Ministry for the Environment
Manatū Mō Te Taiao

A guide to section 32 of the Resource Management Act 1991

Incorporating changes as a result of the Resource Legislation Amendment Act 2017

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Executive summary

Section 32 (s32) of the Resource Management Act 1991 (RMA) is integral to ensuring transparent, robust decision-making on RMA plans and policy statements (proposals).

The section requires that:

- new proposals must be examined for their appropriateness in achieving the purpose of the RMA
- the benefits and costs, and risks of new policies and rules on the community, the economy and the environment need to be clearly identified and assessed
- all advice received from iwi authorities and the response to the advice needs to be summarised
- the analysis must be documented, so stakeholders and decision-makers can understand the rationale for policy choices.

The Resource Management Amendment Act 2013 introduced new requirements under s32. These new requirements do not change the purpose of s32. They do however encourage quantification of costs and benefits, emphasise the need to assess economic costs and benefits, and generally require a more robust, more clearly articulated analysis that is proportionate to the type of proposal.

The Resource Legislation Amendment Act 2017 introduced a further requirement under s32 requiring the report to summarise all advice received from iwi authorities and the response to the advice including any provisions of the proposal that are intended to give effect to the advice.

This guide is designed to assist practitioners and decision-makers to undertake good practice s32 evaluations, and in doing so to improve planning practice across New Zealand.

The guidance focuses on local authority plans and policies, including regional policy statements, plans, and plan changes. It covers proposals on any RMA planning issue and of any scale or significance.

Guidance steps

The guide breaks the s32 process into key steps based on the planning process, explains each, and provides tips and examples, tools and approaches.

Table 1 provides an overview of the core guidance provided for each of these key steps. In reality, the planning process is likely to be more iterative.

Table 1: Guidance steps

Step	Key guidance
Define the problem	The problem statement should identify what the key issue is, and in what way it isn't being addressed well at present. As part of this, the current situation (or baseline) should be clearly defined and understood.

Step	Key guidance
Scope and organise the evaluation approach	The approach to evaluation should be defined before initiating a proposal. Key matters should be considered throughout the evaluation process and the guide provides tips on how to do this.
Identify and assess objectives	Criteria should be developed for assessing objectives, which provide guidance on trade-offs.
Identify and screen response options	Identify a list of options, and narrow this through a screening process. Creative thinking is required with input from multiple people/stakeholders.
Collect information on the selected option(s)	List all effects of the options, assess their scale and significance, quantify the costs and benefits if practicable (monetise if possible), and assess the uncertainty and risks of the option compared with no action.
Evaluate option(s)	Compare and contrast options and choose the most appropriate. Use an evaluation method tailored to the proposal to do this.
Write evaluation report	Core content should be included in the evaluation report. Thought should be given to how to best present the analysis of the options so the report tells a clear and convincing story.
Consider evaluation, evaluate changes post notification and consider evaluation when deciding	Decision-makers need to be well informed of their responsibilities, and understand the policy development process. Changes post-notification must be addressed in a rigorous way, and communicated transparently.

Key messages

The guidance has the following key messages about how to undertake a good practice s32 evaluation.

- S32 evaluation should be fully integrated into decision-making throughout the planning process, and should not been seen as merely a reporting requirement.
- The s32 process should be flexible, iterative and customised to the context.
- Iwi/Māori, the community, and key stakeholders can be involved throughout the policy development process. This is particularly important for complex policy involving multiple interests.
- A well-defined problem forms a strong foundation for an evaluation. Proposed policies and methods should then demonstrate a clear link to this broader context.
- Strong supporting evidence and a well-scoped and -organised evaluation approach is critical to a good quality s32 evaluation.
- Identify a sufficient range of options to address the problem or issue, and critically compare these before narrowing in on a preferred option or options.
- Quantitative information and analysis can improve the analytical rigour of an evaluation. However, most proposals are likely to have a mix of qualitative, quantitative and monetised information.
- All costs and benefits of a proposal should be identified and assessed so decision-makers have a sound understanding of the impact a proposal will have on the community, the economy, and the environment.
- The method chosen for evaluating options needs to be able to produce consistent results, and be transparent. More sophisticated evaluation tools such as multi-criteria analysis or benefit-cost analysis should be considered for proposals of higher scale and significance.

- A succinct, high-quality analysis is recommended over a lengthy report based on questionable analysis. The evaluation report should tell a clear and convincing story.

This guidance is intended to be a living document, so is intended to be updated as practice continues to evolve.

1. Introduction

The Resource Management Amendment Act 2013 introduced new requirements under Section 32 (s32). These new requirements do not change the fundamental purpose of s32, but they do require a more robust, clearly-articulated s32 evaluation, and set out more clearly what is required in s32 reporting. The Resource Legislation Amendment Act 2017 introduced a further requirement for a summary of advice received from iwi and details of any response to that advice.

Section 32 (s32) is integral to ensuring transparent, robust decision-making in Resource Management Act (RMA) plans, plan changes and policy statements (which are defined in s32 as proposals). S32 requires new proposals to be examined for their appropriateness in achieving the purpose of the RMA, and the policies and methods of those proposals to be examined for their efficiency, effectiveness and risk.

The effects of new policies and rules on the community, the economy, and the environment need to be clearly identified and assessed as part of this examination. The analysis must be documented, so stakeholders and decision-makers can understand the reasoning behind policy decisions.

The RMA is not the only statute requiring the rigorous evaluation of policy proposals. The Local Government Act 2002 has similar requirements for local authorities when planning new infrastructure or community investment. Central government agencies must also perform regulatory impact analysis when looking at new national-level policy, laws and regulations.

1.1 Scope and purpose of this guidance

This guidance is designed to help practitioners and decision-makers perform good practice s32 evaluations and, in doing so, to improve planning practice across New Zealand. The guidance focuses primarily on local authority planning documents, including plans, and plan changes, and regional policy statements. The guidance covers proposals of any scale or significance.

Councils have been undertaking s32 reporting since the introduction of the RMA in 1991, and have faced a number of challenges to practice over this time. This guidance addresses some of these challenges by providing ideas on frameworks, tools, methods and approaches to use in evaluation. In this way, it builds on the guidance provided by the Quality Planning website (QP).

This document should be read in conjunction with other plan-making guidance on the QP website.

1.2 Who is this guidance for?

The guidance is targeted for the intermediate or senior planning practitioner undertaking s32 evaluations for local authority plans and policies. However, the guidance could also be of use to others involved in s32 evaluations, including other RMA practitioners, iwi, submitters, and decision-makers.

1.3 What the guidance does not cover

The guidance does not cover or focus on the following aspects:

- what is required to meet the minimum legislative requirements (rather, it outlines a good practice approach)
- guidance on planning in general. It does recognise the integral linkages between the overall planning process, and s32 evaluations
- s32 evaluations for national policy statements, national environmental standards, and RMA regulations (although the guidance is likely to be relevant to these)
- the project and people management aspects of a s32 process
- guidance on specific RMA issues, such as s32 evaluations for flood hazard management or heritage proposals.

1.4 Status of this guidance

This is an updated version of the guidance to take into account both the Resource Legislation Amendment Act 2017 and the Resource Management Amendment Act 2013.

The Ministry then requested comments from practitioners, councils and iwi. We also held two multi-disciplinary focus groups early in 2014[1] to inform improvements to the guide. This version of the guidance incorporates feedback received through these processes.

The guidance will be built on over time as new good practice and case law emerges. It is likely that the material from this guidance will be integrated into the QP website.

1.5 Use of terms and phrases

S32 evaluation is a phrase used through the guide to refer to the evaluation *process*. **S32 report** is used to describe the actual report prepared at the end which documents this process.

The guide uses the phrase **plan or policy change** or **proposal** to refer to any local authority planning document requiring a s32 evaluation, including new plans, plan changes, variations, full plan reviews, new and amended regional policy statements.

1.6 How to use this guidance

The guidance is not intended to set rigid requirements, but to highlight different approaches and steps for undertaking s32 evaluations that can then be tailored to suit. The planning process is iterative and the steps are unlikely to progress in a linear way.

Because the guide caters to proposals of any scale or significance, it should always be read in that context. For example, if the guide discusses different forms of modelling and impact assessments by experts, this will generally only relate to the effects of proposals of higher scale and significance.

Legislation, audit criteria, information about tools and approaches, references and a glossary can be found in the appendices.

[1] These groups were made up of 17 practitioners, including lawyers, consulting and council planners, and consulting and council economists.

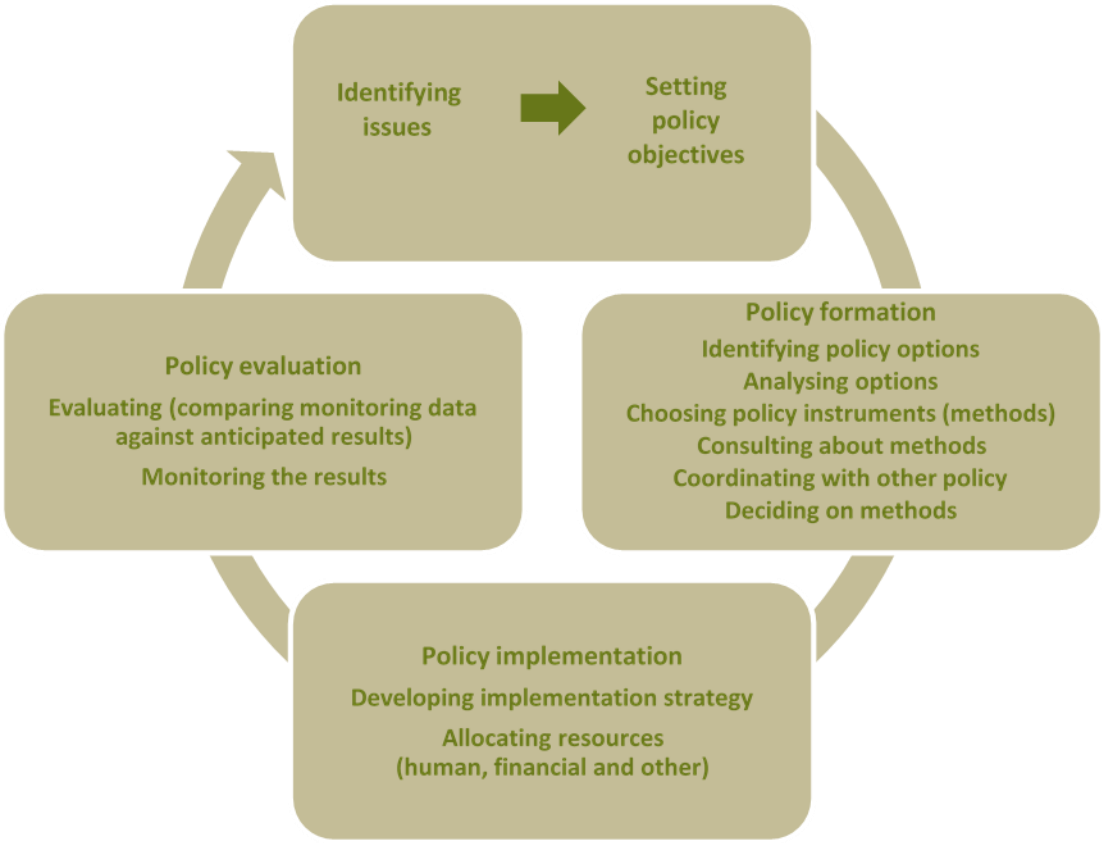
2. Section 32 and planning

2.1 Planning under the RMA

The RMA provides a process through which local authorities and their communities develop policies and plans for sustainably managing natural and physical resources. Policy- and plan-making under the RMA often involves difficult and complex decisions, trade-offs between values, and multiple, sometimes competing, interests.

The development of RMA policies and plans follows a systematic, rational approach to identifying issues, establishing objectives, selecting and implementing policies and methods, and evaluating the outcomes.[2]

Figure 1: The RMA planning cycle



Central and local government generally adopt this systematic, rational approach as part of ensuring robust, evidence-based public policy. However, the approach does have limitations. The linear nature of this process means it may not be suited to dealing with more complex problems where there are multiple interests and values. This process may also lack flexibility and discourage constructive participation.

[2] The statutory process for policy and plan development is outlined in Part 5 and Schedule 1 of the RMA.

Because of this, councils and communities are increasingly taking a more iterative, open approach to contentious resource management issues. In particular, innovative approaches such as collaborative planning and co-management are being used to develop solutions. See Collaborative planning for complex issues in Chapter 4 and Appendix 3 for reference to this.

2.2 The value of section 32 to the planning process

S32 helps planners to demonstrate that:

- objectives, policies and methods of proposed RMA planning documents have been well tested against the purpose of the RMA
- the anticipated benefits of introducing new regulation outweigh the anticipated costs and risks.

Plans that are developed using sound evidence and rigorous policy analysis lead to more robust, enduring provisions, and can mean issues are resolved early on in plan-making, reducing opposition during hearings or at appeal.

S32 evaluations aim to transparently communicate the thinking behind RMA proposals to the community and decision-makers. They tell the 'story' of what is proposed and the reasoning behind it.[3] Decision-makers then have clearly communicated, sound policy analysis on which to base their decisions about resource management issues.

The s32 evaluation also provides a record for future reference of the process, including the methods, technical studies, and consultation that underpin the plan change / policy process, including the assumptions and risks.

2.3 Section 32 and the RMA framework

S32 evaluations under the RMA do not take place in isolation, but are part of a wider RMA framework that sets the purpose, principles, roles, responsibilities, and scope for plan-making.

Table 2: Section 32 in the RMA outlines some of the components of the wider context that need to be kept in mind when undertaking a s32 evaluation.

Table 2: Section 32 in the RMA

Aspect of RMA	Relevance to section 32
Part 2 sets the overall purpose and principles that all RMA decision-making falls under, and provides guidance on weighting and importance of matters.	S32(1)a requires an examination of the extent to which the objectives of the proposal being evaluated *are the most appropriate way to achieve the purpose of the Act*. The purpose of the Act should be at the forefront of the mind when examining the appropriateness of a proposal.
The Act sets out: • the role of district and regional councils • associated plan-making responsibilities and requirements • the scope of plans and rules.	S32 evaluations need to be undertaken within the appropriate scope. The evaluation of a policy, rule, or other method should be carried out with consideration to all the applicable provisions of the Act.[4]

[3] This will be particularly useful for supporting second generation plans which may not include explanatory detail.

[4] See Gisborne DC v Eldamos Investments Ltd 26/10/05 and Gunbie v Rodney DC EnvC A143/06.

Aspect of RMA	Relevance to section 32
Plans are not developed in isolation. There is a hierarchy of plans and policy statements from national, to regional, to district levels.	Higher-level documents influence the scope and content of lower order documents. This in turn determines the s32 evaluation scope and effort, particularly where a higher level document sets a clear direction.
As required by the RMA, evaluation occurs both **before** new proposals are implemented and **after** being implemented.	S35 monitoring can test whether the s32 evaluation results and assumptions were correct, and make adjustments to the provisions as necessary. If both are carried out well, this can lead to continually improving evidence-based plans.
Decision-makers have multiple considerations relating to RMA requirements when deciding on plans and policies.	S32 requirements are only one aspect that must be considered by decision-makers[5]

Local government strategy and other legislation

The development of RMA plans and evaluation reporting under s32 sit within a broader local government framework. These set the strategic framework, vision and outcomes for a region or district.[6] The RMA requires that regional councils and territorial authorities take into account management plans and strategies prepared under other Acts, making this wider strategic framework relevant when determining what is 'most appropriate'. S32 evaluations can also be more robust if they support the direction set through those higher-level strategic local government processes that have had full community engagement.

Multiple other pieces of legislation can often be relevant to a resource management issue.[7] Understanding and incorporating this broader context is essential when developing policy and undertaking a s32 evaluation. This is particularly in terms of ensuring all options are considered (not just RMA regulation) and the impacts of these options are assessed from a broad perspective.

Treaty settlement legislation and other partnership arrangements with iwi/Māori

Consultation with tangata whenua under the RMA is a legal requirement in some circumstances. Even when it is not a legal requirement, consultation is generally best practice and can lead to a stronger understanding of the issues, and result in better environmental outcomes.

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5 See Long Bay-Okura Great Park Soc Inc v North Shore CC EnvC A078/08 and the legal overview of s32 at this link for the list of these criteria. In addition, Gunbie v Rodney DC EnvC A143/06, applying the Eldamos analysis found that the evaluation of a policy, rule, or other method should be done by considering all the applicable provisions of the Act.

6 For example transport and economic development strategies, long-term and annual plans, and long-term financial strategies including funding, financial management, and investment policies.

7 For example, the harvesting and milling of indigenous timber requires a sustainable forest management permit under the Forests Act 1949. The Queen Elizabeth the Second National Trust Act 1977 enables land to be voluntarily protected. The Heritage New Zealand Pouhere Taonga Act 2014 makes it unlawful for any person to modify or destroy, or cause to be modified or destroyed, the whole or any part of an archaeological site without the prior authority of Heritage New Zealand.

The role of iwi/Māori in relation to having mana whenua over an area, statutory acknowledgements, treaty settlements, and more generally as Treaty partners can vary from region to region. Iwi/Māori have often been afforded specific roles in decision-making, and all of these factors must be considered as part of the s32 evaluation.

The level of consideration of these arrangements, and documents, including iwi management plans, is important. For example, a statutory joint committee of council and iwi will usually produce a high-level strategy document which councils must have particular regard to when preparing or changing regional policy statements, regional plans or district plans, whereas an iwi management plan must be taken into account.

The Quality Planning website provides guidance on consulting with iwi/Māori about resource management decision-making.

3. Section 32 requirements, concepts and terminology

This section gives an overview of the Section 32 (s32) requirements, and outlines a number of the key concepts and terms used in s32. Relevant case law is referred to where possible.

The full text of Section 32, 32AA and 32A are outlined in Appendix 1: Section 32, 32A and 32AA. A legal overview of changes to s32 as a result of the Resource Management Amendment Act 2013 is available in the form of webinars. Read the overview of the changes as a result on the Resource Legislation Amendment Act 2017.

3.1 Key section 32 requirements

S32 evaluations must be carried out by the appropriate responsible government agency for all:

- new plans
- plan changes
- policies
- standards
- regulations.

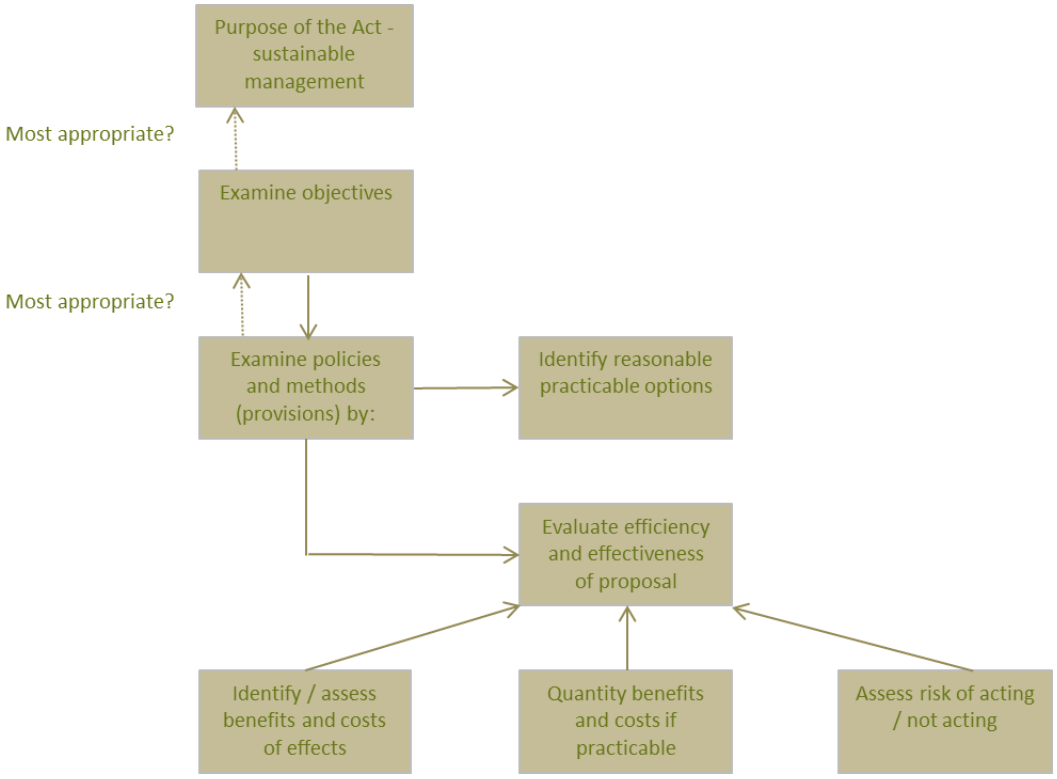
These are all termed as proposals under s32.[8]

An evaluation must examine whether the objectives of the proposal are the most appropriate way to achieve the purpose of the Act, and whether the provisions (that is the policies, rules and other methods) are the most appropriate way of achieving the objectives. Figure 2 illustrates the key components of a s32 evaluation.

When a proposal is notified, an evaluation report must be made available at the same time, and decision-makers must have particular regard to it before notifying. If changes are made to the proposal following notification, a further evaluation must then be made available at the time of the decision and decision-makers must have particular regard to that further evaluation. Submitters may challenge the s32 evaluation in their submission.

[8] s32(6). Note that in relation to s32AA(3) and 32A(3), proposal relates only to a proposed statement, plan or change.

Figure 2: Key components of the s32 evaluation process



3.2 Evaluation requirements

Extent to which objectives and provisions are the most appropriate

Objectives are to be assessed as to whether they are the most appropriate to achieve the purpose of the Act. Provisions are to be assessed against whether they are the most appropriate to achieve the objectives.[9]

To date, s32 case law has interpreted 'most appropriate' to mean "suitable, but not necessarily superior".[10] This means the most appropriate option does not need to be the most optimal or best option, but must demonstrate that it will meet the objectives in an efficient and effective way.

The Court has found previously that it is not necessary for each objective individually to be the most appropriate way of achieving the purpose of the Act. This is because objectives may interrelate and have overlapping ways of achieving sustainable management.[11] In another

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[9] It is noted that in Long Bay-Okura Great Park Soc Inc v North Shore CC EnvC A078/08, the Court set out that *"each proposed policy or method (including each rule) is to be examined having regard to its efficiency and effectiveness, as to whether it is the most appropriate method for achieving the objectives of the district plan taking into account:*

(a) the benefits and costs of the proposed policies and methods (including rules); and

(b) the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods."

[10] Rational Transport Soc Inc v New Zealand Transport Agency HC Wellington CIV-2011-485-2259, 15 December 2011.

[11] Rational Transport Soc Inc v New Zealand Transport Agency [2012] NZRMA 298 (HC).

case,[12] the Court held that an "holistic" approach should be taken rather than a more focused, vertical or "silo" approach to objectives, policies and methods.[13]

As part of assessing what is most appropriate, s32 does not require different options for objectives to be identified. However, several options will often need to be compared to determine which is "most appropriate". As a minimum, proposed objectives should be assessed against the alternative of doing nothing. For more contentious proposals, it is good practice to have a number of alternatives to doing nothing, which could include:

- requiring different timeframes for achieving the same outcome
- seeking to either fully or partially achieve identified community outcomes
- providing for differing levels of trade-off between competing uses
- setting out extremes in terms of maximising protection or maximising development goals.

See identify reasonably practicable options for provisions below.

Amending proposals

An amending proposal (as outlined in s32(3)) is one that amends an existing or proposed proposal. The provisions of the plan change must be evaluated against both the objectives of the proposed plan change (if there are any), along with the objectives of the existing plan where these are relevant.

This is so a plan change cannot be justified based solely on its own objectives, without being consistent with the broader plan objectives (this is more likely to occur in the situation of private plan changes).

The evaluation must assess whether the new provisions will help achieve the objectives already in the plan or statement and will not undermine them.[14]

Stringency in relation to a national environmental standard (NES)

If a proposal relates to a matter regulated under an NES and that proposal introduces stronger regulation than an NES, it must be looked at carefully in the context of the region or district.[15]

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12 Art Deco Soc (Auckland) Inc v Auckland Council [2012] NZEnvC 125, [2012] NZRMA 451.

13 This aligns with the changes to s32 as a result of the RMAA2013.

14 In Environmental Defence Soc Inc v The New Zealand King Salmon Co Ltd [2014] NZSC 38, (2014) 17 ELRNZ 442, the Court found that the need to consider alternatives will be determined by the nature and circumstances of the particular plan change. The RMA does not require consideration of alternative sites as a matter of course, but there may be instances where a decision-maker must consider possible alternative sites when determining a private plan change relating to the applicant's own land. The question of alternative sites may have even greater relevance where the proposal would involve the use of part of the public domain for a private commercial purpose.

15 S32(4).

3.3 Examining provisions

Provisions are the aspects of the proposal that implement, or give effect to, the objectives of the proposal (or proposed plan or change). The policies are to implement the objectives, and the rules or other methods are to implement the policies.[16]

For a proposed plan or plan change, this will be the policies, rules, or other methods. For policy statements, this will just be the policies.

Identify reasonably practicable options for provisions

As part of examining the provisions, reasonably practicable options for achieving the proposed objectives must be identified.[17] "Reasonably practicable" is not defined in the RMA, but may include options that:

- are both regulatory and non-regulatory
- are targeted towards achieving the goal/objective
- are within the council's resources, duties and powers
- represent a reasonable range of possible alternatives.

Section 77 of the Local Government Act (LGA) also requires local authorities to "seek to identify all reasonably practicable options for the achievement of the objective of a decision". The High Court has commented that the requirement to identify all reasonably practicable options in this context will always involve "at least two options" and "consequently, there will always be a choice to be made between doing nothing and doing something".[18] The Court of Appeal has also commented that the range of reasonably practicable options must be seriously considered before choosing the preferred option.[19] In other words, the options should not be pre-determined.

The requirement in s32 is to identify all options, but not necessarily to assess all of these options in detail. However, good practice will require at least a screening of other options, or a full assessment of a number of options depending on the scale and significance of the proposal.

See Identify and screen response options in Chapter 4 for guidance on developing reasonably practicable options.

Assess effectiveness and efficiency

S32 requires that as part of assessing the appropriateness of the provisions in achieving the objectives that the efficiency and effectiveness of the provisions are to be assessed.[20]

Efficiency and effectiveness are not defined in the RMA.

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16 Long Bay-Okura Great Park Soc Inc v North Shore CC EnvC A078/08.

17 S32(1)(b)(i).

18 Whakatane District Council v Bay of Plenty Regional Council, CIV-2007-463-000606 (HC), para 40(iii).

19 Whakatane District Council v Bay of Plenty Regional Council, CA258/2009, 2010 (NZCA), para 57.

20 Section 32(1)(b)(ii).

Effectiveness assesses the contribution new provisions make towards achieving the objective, and how successful they are likely to be in solving the problem they were designed to address.

Efficiency measures whether the provisions will be likely to achieve the objectives at the lowest total cost to all members of society, or achieves the highest net benefit to all of society.[21] The assessment of efficiency under the RMA involves the inclusion of a broad range of costs and benefits, many intangible and non-monetary.

There have been differing views of how efficiency should be interpreted. In one case an approach based on a strict economic theory of efficiency was taken.[22] A more holistic approach was adopted in another case.[23] Referring to those two cases, the High Court stated that:

> "The issue of whether s32 requires a strict economic theory of efficiency or a more holistic approach was raised before Woodhouse J in Contact Energy Limited versus Waikato Regional Council [2011] NZEnvC 380 … while economic evidence can be useful, a s32 evaluation requires a wider exercise of judgement. This reflects that it is simply not possible to express some benefits or costs in economic terms … in this situation it is necessary for the consent authority to weigh market and non-market impacts as part of its broad overall judgement under Part 2 of the RMA."[24]

Although assessing different things, effectiveness and efficiency are closely interconnected as they are both aimed at assessing what the most appropriate policy choice is. They each put a slightly different (but overlapping) lens on this assessment.

See Step 3: Evaluate costs, benefits and risks of provisions for further guidance.

Assess costs and benefits

As part of assessing efficiency and effectiveness, s32(2)(a) requires the responsible agency to:

> "Identify and assess the benefits and costs of the environmental, economic, social and cultural effects that are anticipated from the implementation of the provisions, including the opportunity of economic growth and employment that are anticipated to be provided or reduced."

A cost, or negative effect, can be described as what society has to sacrifice to obtain a desired benefit.

A benefit, or positive effect, can be described as a consequence of an action (eg, a plan change) that enhances well-being within the context of the RMA.

The RMA defines costs and benefits to include those that are both monetary or non-monetary. Requiring the benefits and costs to be identified and assessed encourages a thorough approach is taken to examining provisions, drawing on sound evidence.

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[21] The Court in Long Bay-Okura Great Park Society Inc v North Shore City Council stated "*Our understanding is that generally efficiency is the allocation of (limited) resources to the uses for which society values them most."*

[22] Marlborough Ridge Ltd v Marlborough DC (1997) 3 ELRNZ 483; [1998] NZRMA 73 (EnvC).

[23] St Lukes Group Ltd v North Shore CC [2001] NZRMA 412 (EnvC).

[24] Contact Energy Ltd v Waikato RC (2007) 14 ELRNZ 128 (HC).

Environmental, economic, social, and cultural effects anticipated

The benefits and costs of all four types of effects anticipated must be identified and assessed.[25] This is to ensure all of these types of effects are considered in the s32 evaluation, rather than to create an artificial distinction between these categories. This ensures the regulatory impact of a proposal on society is comprehensively evaluated.

See Considering categories of effects in chapter 5 for further discussion.

Opportunities for economic growth and employment

S32(2)(a)(i) and (ii) requires that the opportunities for economic growth and employment that are anticipated to be provided or reduced are assessed.

Economic growth is the net increase in the size of the economy (production/consumption of goods and services and supply of money). The economy should be considered from a broad perspective to include people, business/government, and the biophysical resources affected by production and consumption.

For these reasons, growth is not simply the increases in business activity, household income or population gain, but should be seen from a broad district, regional or even national perspective.

Employment opportunities are the potential for economic growth or any other aspect of a proposal to generate job or work opportunities. Both positive and negative effects on economic growth and employment should be considered.

Specifically referring to economic growth and employment opportunities is not to add greater weight to these matters, but to ensure they are addressed as part of the evaluation.

This recognises that Part 2 of the RMA includes economic well-being, and the use and development of natural and physical resources invariably involves economic activity.

See Assessing effects on economic growth and employment in chapter 5 for discussion on how to evaluate these.

Quantify costs and benefits if practicable

Section 32(2)(b) requires costs and benefits to be quantified if practicable.

To quantify means to place a numerical value on, not necessarily to monetise. Specific figures support analysis, and help decision-makers make informed decisions.[26]

The inclusion of 'if practicable' recognises that for either ethical reasons or methodological limitations it may be difficult to quantify particular impacts, such as:

- biodiversity
- amenity values
- recreational uses of natural resources

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[25] Section 32(2)(a).

[26] S32(2)(b) states that costs and benefits must be quantified, if practicable.

- iwi/Māori spiritual values
- principles of kaitiakitanga.

In these cases, qualitative descriptions of costs and benefits may be more appropriate. 'If practicable' can be taken to mean that quantitative data should be collected if:

- it is possible to collect quantitative data
- the costs of collecting the data are appropriate to the scale and significance of the impacts or the overall problem to be addressed, or the costs of choosing an inferior policy option
- the data can be analysed or compared in a meaningful way.

S32 does not require a fully monetised cost-benefit analysis, but encourages increased analytical rigour in evaluations. It recognises that a range of methods can provide a robust analysis where there is a mixture of qualitative, quantitative and monetised data.

See Quantify the costs and benefits if practicable in chapter 4.

Assess the risk of acting or not acting

As part of assessing the efficiency and effectiveness of proposed provisions, an evaluation must take into account the risk of acting or not acting where there is uncertain or insufficient information.

The concept of risk includes the likelihood (or probability) of an effect, and the cost of the consequence of it occurring. Risk is usually expressed as 'likelihood times consequence' and relates to a potential positive or adverse effect (benefit or cost) to the environment, society or the economy.[27] It is therefore directly connected to the definition of effect in the RMA.[28]

The RMA does not necessarily require a highly quantified risk assessment. In 2008, the Environment Court came to the conclusion (after discussing several superior court judgments) that there is no standard of proof for future events. A decision-maker must make an assessment of the probabilities of future events (even if they are lower than 50 per cent), then work out the costs and benefits of the events so as to assess the risk.[29]

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[27] The meaning of risk in ISO31K terms includes any type of uncertain effect, including opportunities as well as losses. The Court in Johns Road Horticulture Ltd v Christchurch CC [2011] NZEnvC 185 stated that the test is not whether one party should be entitled to certainty, but what the local authority's (or the Environment Court's) judgment of the risk is. It noted that risk is the product of the probability of an effect and the costs of its consequences.

[28] The Court in Long Bay-Okura Great Park Soc Inc v North Shore CC EnvC A078/08 stated *"The risk analysis required by section 32 refers back to the definition of 'effect' in section 3 of the Act. The word includes [78]: "… (f)Any potential effect of low probability which has a high potential impact". The conjunction of "low probability" and "high potential impact" strongly suggests the concept of risk because the relationship between probabilities of an effect and its consequences or costs is incorporated in the definition of "risk". The relationship can be expressed as a simple product: Risk = Probability of an effect X Cost of consequences. So the RMA requires local authorities to examine both the probability of an effect and its consequences or costs (i.e. the risk)."*

[29] Clifford Bay Marine Farms Ltd v Marlborough DC C 131/03.

The Environment Court has not considered that the risk assessment in s32 needs the precautionary principle and does not consider all risk needs to be avoided.[30] Instead, it has set out the following considerations:

- A judgment about the risk of future impacts is based on an evaluation of the evidence by the Court, rather a party being required to prove that an impact is likely to occur and to have certain consequences.
- The Court will not prevent socio-economic development when risks are only perceived rather than based on credible evidence, which cannot be demonstrated as real by credible evidence, are raised.
- The Court should consider allowing socio-economic development even where uncertainty may exist.
- The Court will on occasions adopt the methodology or risk management approaches taken by industry, or by professional groups.

See Identify the risks of the options in chapter 4 for further information and guidance.

3.4 Evaluation reports

The evaluation report must examine the extent to which the:

- objectives are the most appropriate way to achieve the purpose the Act
- provisions are the most appropriate way to achieve the objectives.[31]

The evaluation report must contain all aspects of the evaluation under s32(1) and give reasons for why the provisions have been chosen.[32] Evaluation reports must be publically available when local authority plans and policies are notified.[33]

Responsibilities for preparing evaluation reports are outlined in the respective plan-/policy-making sections. For example, the requirements to prepare an s32 evaluation report for a district plan are outlined in section 78(1)(d).

See Write evaluation report in chapter 4 for guidance on preparing evaluation reports.

Detail corresponding with scale and significance

The evaluation report "must contain a level of detail that corresponds to the scale and significance of the … effects that are anticipated from the implementation of the proposal."[34]

[30] The Environment Court in Otago RC v Dunedin CC [2010] NZEnvC 120, [2010] NZRMA 263 held that in relation to managing natural resources, "There should be flexibility for individuals to accept risk where policies contemplate a level of risk that some might find acceptable."

[31] S32(1).

[32] S32(1)(b)(iii).

[33] S32(5).

[34] S32(1)(c).

This means that, where the impacts of a proposal are likely to be low, little detail will be required in the evaluation report. Conversely, major proposals require more detailed analysis and write-up.[35] This introduces proportionality into s32 evaluation reports.

Scale refers to the size or magnitude of the effects, including how many people or species or other natural resources are affected, by how much, and over how wide an area.

Significance refers to the importance of the effects, whether this is at a national, regional or local level. See Assess scale and significance in chapter 4 for further guidance.

3.5 Further evaluations

Section 32AA aims to ensure any changes to plan provisions during the hearings process are subject to a similarly high level of analytical rigour and transparency as the original evaluation.

S32AA outlines the requirements for further evaluation. A further evaluation must include all matters in s32, but only in relation to the changes that have been made to a proposal since the evaluation report for it was completed.

The level of detail of the further evaluation must correspond to the scale and significance of the changes.

A further evaluation may be carried out by producing an evaluation report, or it may be documented as part of the overall decision-making record.

See Evaluate changes post-notification (further evaluation) in chapter 4 for guidance on further evaluations.

3.6 Particular regard of the evaluation

Particular regard of the s32 evaluation must be given at three key points in the process:

- when deciding to proceed with the proposal. (Schedule 1, clause 5) (If the local authority does decide to proceed, the proposal is publically notified)
- when making a decision on a proposal. (Schedule 1, clause 10)
- when deciding whether to accept a private plan change (section 25(1A) Schedule 1)

Decision-makers must have particular regard to the further evaluation when deciding on a proposal.

Particular regard, in relation to other sections of the Act where this applies,[36] means to give particular weight to, and imposes a high test and creates a duty to be on inquiry. Passive action or inquiry by a local authority does not meet the test. The evaluation needs to be considered

[35] In a similar way in relation to resource consents, Section 88(2) (which refers to the AEE to be at a level of detail that corresponds with the scale and significance of the effects) contemplates that the material prepared should be proportionate to the potential effects. In Hubbard v Tasman DC W001/95 (PT), the Court found that the wording of s88(2) allows for a subjective assessment of the detail required when estimating the scale and significance of the proposal's actual and potential effects.

[36] i.e. Section 7 (have particular regard).

and carefully weighed in coming to a conclusion.[37] To "have particular regard" requires matters to be considered, but does not set absolute requirements or standards. This means the analysis of whether the objectives and the provisions are the most appropriate, including that they are efficient and effective, is a matter decision-makers must actively consider and should influence the decision taken.

See Consider evaluation report before notifying in chapter 4 and Appendix 2 for further discussion.

3.7 Challenges to section 32

As outlined in s32A, challenge to a proposed objective, policy, rule or other method can only be made on the grounds that:

- an evaluation report has not been prepared or considered
- a further evaluation has not been undertaken
- sections 32 or 32AA have not been complied with.

A person hearing a submission or an appeal may take into account the s32 evaluation.[38] However, the RMA does not require the local authority / decision-maker to revisit and amend its original s32 evaluation report if an appeal is wholly or partly successful. It is the proposal itself that is amended.[39]

3.8 Private plan changes

A request for a private plan change under clause 22 of the 1st Schedule must contain an evaluation report prepared in accordance with s32. The local authority has 20 working days from receiving the request to require further information. This further information may include the benefits and costs, the efficiency and effectiveness, and any possible alternatives in relation to the plan change request, if they have not be sufficiently covered in the evaluation report.

While the requester of the private plan change prepares the s32 evaluation, the local authority undertakes the further evaluation in accordance with s32AA and has particular regard to the further evaluation in making a decision on the plan change.

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37 Gill v Rotorua DC (1993) 2 NZRMA 604 (PT); Marlborough DC v Southern Ocean Seafoods Ltd [1995] NZRMA 220 & 336 (PT).

38 S32A(2).

39 By way of examples from case law, in Infinity Group v Queenstown Lakes DC EnvC C010/05, the Court found an appellant was not entitled to contend that the council had failed to comply with s32 duties, because it had not been raised in the primary submission challenging the variation. The Court observed that, in relation to the merits as to the appropriateness of the contents of the variation, those could be addressed elsewhere in the decision. The Environment Court emphasised in Naturally Best NZ Ltd v Queenstown Lakes DC EnvC C049/04, that there should be no procedural challenge to the adequacy of a report, except by way of submission.

3.9 Summarising advice from iwi

Section 32 of the RMA has been amended to require any evaluation reports about proposed policy statements, plans or plan changes (prepared under Schedule 1 through the standard, streamlined or collaborative planning processes) to include summaries of:

- all advice received from iwi on the proposal
- how the proposal responds to that advice, including reference to any proposed provisions that are intended to give effect to the advice.

These provisions, like all requirements of section 32, must still contain a level of detail that corresponds to the scale and significances of the proposals anticipated effects.

4. Good practice guidance

This section outlines how to undertake a good Section 32 (s32) evaluation.

The key steps for carrying out a robust and transparent s32 evaluation, which is integrated into the planning process, are outlined in figure 3. Each step in the figure can be clicked to link to the corresponding section of guidance.

It should be noted that some of the steps apply more broadly to the planning-process than specifically to the s32 evaluation requirements. This information should also be read with reference to the audit checklist in Appendix 2: Auckland Unitary Plan audit criteria.

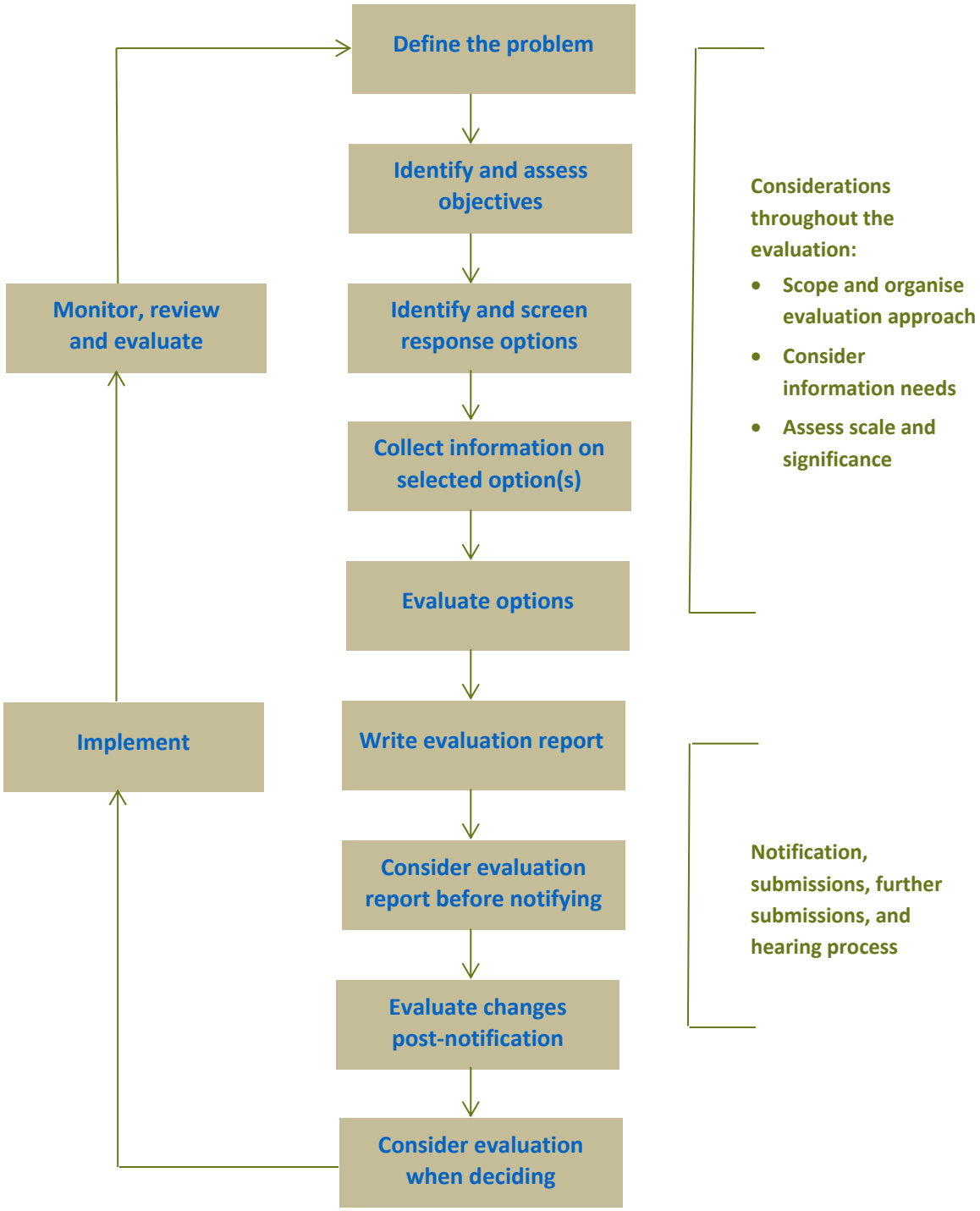
Although the steps present a linear process, the actual planning process is likely to be more iterative, and may return to earlier steps. RMA proposals will be of varying scale and significance. The different steps and guidance given here for each should be scaled to suit the particular circumstances of the plan being made.

4.1 Key points for good practice

A summary of the key good practice messages contained in this chapter is as follows:

- S32 evaluation should be fully integrated into decision-making throughout the planning process, and should not be seen as merely a reporting requirement.
- The s32 process should be flexible, iterative and customised to the context.
- Iwi/Māori, the community, and key stakeholders can be involved throughout the policy development process, as they can contribute strength and durability to proposals. This is particularly important for complex policy involving multiple interests.
- A well-defined problem (supported by high-quality baseline analysis and clear outcomes) forms a strong foundation for an evaluation. Proposed policies and methods should then demonstrate a clear link to this broader context.
- Strong supporting evidence and a well-scoped and -organised evaluation approach is critical to a good quality s32 evaluation.
- Identify a sufficient range of options to address the problem or issue, and critically compare these before narrowing in on a preferred option or options.
- Quantitative information and analysis can improve the analytical rigour of an evaluation and effort should be made to quantify effects. However, most proposals are likely to have a mix of qualitative, quantitative and monetised information.
- All costs and benefits of a proposal should be identified and assessed so decision-makers have a sound understanding of the impact a proposal will have on the community, the economy and the environment.
- The method chosen for evaluating options needs to be able to produce consistent results, and be transparent. More sophisticated evaluation tools such as multi-criteria analysis or benefit-cost analysis should be considered for proposals of higher scale and significance.
- A succinct, high-quality analysis is recommended over a lengthy report based on questionable analysis. The evaluation report should tell a clear and convincing story about what the preferred option is, and why it was chosen.

Figure 3: Good practice s32 evaluation steps



4.2 Define the problem

Clearly defining the problem, issue or opportunity is a critical part of robust policy analysis and is strongly linked to s32 evaluation. The degree of clarity about the problem will influence the type and range of policy solutions to be considered, and the quality of analysis of the options.

A good problem definition needs to clearly explain the gap between the current situation (ie, the *status quo*), and the outcome aimed for, and should set out the case for intervention. The following questions should be answered:

- What is the key issue and its context, scope, scale and significance? (Guidance on drafting issues can be found on the Quality Planning website)
- How is this issue tied to identified outcomes? See planning outcomes to inform s32 evaluation below.
- What are the drivers for addressing the problem and its root causes?[40]
- What is currently being done to address the problem, and why is it not adequate?
- Why is local government intervention warranted?
- What are the risks of acting or not acting?

EXAMPLES OF PROBLEM DEFINITIONS

Environment Canterbury's section 32 report for variation 1 in relation to setting water quality includes a comprehensive problem description, including information on the *status quo* and outcomes.

The section 32 evaluation for plan change 48 to the Queenstown District Plan includes a clear summary of the problems with the existing District Plan provisions.

Some problems or opportunities are very simple with an obvious cause and reasonably simple solution(s). Other problems are more complex, difficult to define, have multiple causes, change, have no clear solution, and can involve multiple parties.[41]

Planning outcomes to inform section 32 evaluation

Having clear, supported outcomes (or anticipated environmental results) is an important part of problem definition and the starting point for high-quality plans. The evaluation of objectives and provisions can be undertaken with much greater clarity if tied to clearly defined outcomes. Defining outcomes can draw on a broad range of sources. Councils can use a number of methods to define a sustainable management outcomes-based decision-making framework beyond any legislative requirements. For example:

- Genuine progress and sustainability tools – see:
  - A Tangata Whenua Perspective on Sustainability Using the Mauri Model on the Sustainable Society index

[40] For example, the root cause of climate change is a result of anthropogenic factors rather than natural processes. This means that policy responses will focus on changing human behaviour.

[41] See this article for a discussion about problem definition of wicked problems.

  - the Waikato Regional Community Outcomes MARCO Indicators Data Analysis Report Update 2012, which reports on the Waikato region's progress towards sustainability and well-being indicators
  - Improving the Living Standards of New Zealanders: Moving from a Framework to Implementation from the New Zealand Treasury.
- Natural capital and ecosystem services frameworks can be particularly helpful when dealing with natural resources – see:
  - EcoSystem Services – Emerging Issues, from the Royal Society of New Zealand
  - An Ecosystem Services Approach to the Cost of Soil Erosion and Value of Soil Conservation, which takes an ecosystem services approach to the cost of soil erosion.
- Using a welfare economics-based framework such as total economic value, which provides an economic framework for organising and categorising values.

The Planning under a Co-operative Mandate research also contains many publications about planning outcomes.

Describe the current situation (the baseline or *status quo*)

A core part of the problem definition is to clearly understand the situation now *and in the future* in the absence of a new RMA proposal. This will form one of the options, and enables other options to be compared to a policy of no change. It also may indicate why local government intervention is required.

Think carefully about what the appropriate baseline is for comparing to other options. The existing RMA provisions may not represent the most appropriate baseline. See the audit of the Auckland Unitary Plan for a discussion of this.

Consider the following aspects, and scale the analysis to be proportionate with the proposal:

- Assess the effectiveness of the current provisions (if any) (section 35 plan efficiency and effectiveness monitoring should form part of this review).
- Describe the wider strategic context.
- Outline the interests of all relevant stakeholders, expected behaviours, motives, values and how these may change over time.
- Outline the key values, interests, and involvement of Māori/iwi.
- Describe the environmental, social, cultural and economic conditions associated with the problem and where these may be headed in the absence of intervention. There may be large uncertainties in this information, and difficulties in obtaining some information. Examples include:
  - land use state and trends – patterns of growth, intensification, and change in land use types[42]
  - current population and future projections

[42] Outlined in Queenstown Lakes DC v Hawthorn Estate Ltd (2006) 12 ELRNZ 299, RNRMA 424 in a case about actual or potential effects of a resource consent application under section 104.

  - economic state and trends – where the local or regional economy is likely to be heading (see Finding data on economic effects when a specialist economic impact assessment is not possible in Chapter 5)
  - environmental state and trends – the state of key resources and/or places and the likely trends in terms of quality and quantity
  - at a smaller scale, information on the state of buildings or specific infrastructure in an area, rates of consenting for specific types of activities, etc
- outline what decisions have already been taken, if any, that may limit or define the scope of the new proposal ie, higher level requirements.

See the information on identifying and assessing the effects of options in Chapter 5 for more guidance.

EXAMPLES OF *STATUS QUO* INFORMATION

The Pauatahanui Judgeford Structure Plan process included a technical assessment of the demand and supply profile of the rural-residential market in Wellington Region and Porirua, and projections of demographic and economic growth for Wellington Region and Porirua. This was part of describing the *status quo* or baseline. See Appendix B of the structure plan document for the technical report.

4.3 Considerations throughout the evaluation

The key aspects that need to be considered throughout the evaluation process include the need to:

- scope and organise the evaluation approach
- consider information needs
- assess scale and significance
- integrate evaluation with community and iwi engagement.

Scope and organise evaluation approach

It is recommended that local authorities establish an evaluation approach before starting any proposal that can then be adapted as appropriate. This will ensure the right questions are asked, at the right time and in the right sequence, to maximise efficiency in the process.

Doing this will also ensure s32 analysis is integrated into the whole plan development process and that evaluations are reliable, robust and defensible. It will also help prioritise effort, and provide a coherent plan and organising structure for the evaluation. The approach should:

- establish approaches to core aspects, including:
  - overall approach to the evaluation – scope, timing, roles and responsibilities, general process
  - where information can be found, how it will be collected and analysed, and what this information will comprise

  - setting the appropriate timeframes for analysis
  - selecting evaluation methods
  - deciding the type and level of community involvement, in particular iwi, in the process
- establish consistent analysis criteria, including for:
  - the scale and significance of the proposal
  - the appropriateness of objectives and provisions
- establish core information for the analysis, including:
  - the range of benefits and costs that are relevant to a city, district or region
  - data and analysis on the current situation to form part of the baseline scenario
  - indicators and characteristics to identify important effects, costs and benefits
- set up templates and checklists, including:
  - guidance on what should be included in an evaluation report
  - ensuring s32 evaluation reports contain all relevant information and meet the statutory requirements.[43]

Consider information needs

Sufficient evidence is critical for s32 evaluations. Evidence-based analysis should be able to demonstrate relationships between issues, objectives and policy responses. This avoids policy being developed on the basis of 'gut instinct', habit, imitation or prejudice.

Many types of knowledge and information can contribute to a robust s32 evaluation. For example, traditional environmental knowledge such as that held by iwi/Māori can be valuable, along with local knowledge and observations, scientific information, expert views, and numerical data. See Appendix 3 for methods for collecting information.

Information on its own is not sufficient to support policy analysis. That information needs to be analysed and interpreted and understood in relation to the context. The following should be kept in mind when assessing and presenting information:

- analysis is focused on the data and its appropriate interpretation
- advice is unbiased with respect to the use of the data
- assumptions can be clearly stated, what is known and not known
- there should be no conflicts of interest, and independence must be maintained from any end user perspective
- the reliability or unreliability of source information must be distinguished eg, independently peer reviewed.

It may be useful to prepare a simple table tailored to the proposal, which specifies the information needed for each or selected effects, or combination of effects, and the approach to collecting this information. This would include identifying whether specialist skills are

[43] See also the audit of the Auckland Unitary Plan section 32 which takes a good practice approach to assessing the quality of a section 32 evaluation.

needed or whether the work can be done in-house. This table should be updated throughout the policy development process.

Assess scale and significance

Practitioners should assess the scale and significance of the proposal at a high level at the start of the planning process. This should continue to be reviewed as new information on the effects of the provisions comes to light.

Criteria should be developed for determining scale and significance as part of the evaluation framework, and table 3 provides guidance on what these criteria might be. The proposal should then be screened against these criteria.

A ranking approach (with weightings if necessary) could be used, such as high, medium, low or 1 to 5, to indicate where on the continuum of scale and significance the proposal falls.

For a full plan review, scale and significance should be assessed for different parts of a proposed plan as well as for the plan as a whole. This is because some parts of a proposed plan may result in different impacts and therefore differing levels of analysis.

Table 3: Considerations for assessing scale and significance

Considerations and criteria for determining scale and significance	
For all except the first criteria, consider all bullet points and make overall assessing of scale and significance for that criterion using ranking. Then make overall assessment across all criteria.	
1. Reasons for the change	Choose one or more as appropriate: • 10-year review • Giving effect to higher level RMA document • Ministerial direction/requirement for plan to not be inconsistent with NES • Responding to a Court decision/direction • Implementing non-statutory planning initiative (eg, urban growth strategy) • Initiated locally because of plan effectiveness monitoring, community reaction to resource use, etc • Assessed as having high significance under the Local Government Act
2. Degree of shift from the *status quo* (*status quo* defined as the current approach)	• Addressing existing or new resource management issue • Proposing a new management regime/minor or major change in rule framework • Extent and scale of regulatory impact • Degree of 'Packaging' with other plan changes or other interventions • Discrete provisions, or broader suite of existing provisions • Changing existing plan objectives, and to what degree
3. Who and how many will be affected?	• Degree of public interest and engagement in issue • Degree to which proposal will address identified community outcomes • How many will be affected? Single landowner/multiple landowners/occupiers/ neighbourhoods/businesses/cities/future generations • Degree of impact on private property
4. Degree of impact on, or interest from iwi/Māori	• Level of interest from iwi/Māori engagement with iwi on the issue • Likely degree of impact on iwi/hapū? • Impact on sites, areas or resources of significance to iwi/Māori • Degree of consistency with iwi management plans

Considerations and criteria for determining scale and significance	
5. When will effects occur?	• Temporarily (weeks or months) • For the next 1–5 years • Ongoing into the future
6. Geographic scale of impacts	• Very localised or wide ranging (ie, single site/whole zones/one or more regions/single or multiple natural resources)
7. Type of effect	• Acute/chronic/temporary/cumulative/positive/negative/irreversible • Likelihood and consequence (eg, low probability, high consequence) • Part(s) of environment affected (ecosystems, infrastructure, amenity) • Degree of impact on social, cultural or economic well-being • Degree of impact (positive/negative) on Part 2 matters
8. Degree of policy risk, implementation risk, or uncertainty	• Community reaction • Whether: – novel, untested approach – weak evidence base – highly uncertain benefits and costs – dependent on other initiatives (such as non-RMA mechanisms) – challenging implementation timeframes

Tailor information and analysis to scale and significance

Once the scale and significance of the proposal has been assessed, a further assessment needs to be made about the extent of research and analysis needed to understand the effects of the proposal more fully. The ranking of scale and significance will influence the following:

- The type and extent of information that needs to be collected.

  Greater detail about impacts will be required for proposals of higher scale and significance. Specialist expert analysis may be required. Proposals of lower scale and significance may be able to rely on the existing information base.

- The approach to quantification or monetisation of the effects.

  Proposals of higher scale and significance will have a higher expectation of quantification.

- The likely evaluation method/tool to be used.

  Proposals of lower scale and significance could use more simple ranking matrices. Proposals of higher scale and significance should consider more rigorous methods such as multi-criteria analysis and benefit-cost analysis.

- The type and level of community engagement in identifying options and describing and assessing effects.

  For issues with high iwi/Māori or community interest and multiple perspectives, a more partnership based or collaborative approach may be appropriate.

- Associated costs of the evaluation process, and how time- and resource-intensive it might be.

  Logically, proposals of higher scale and significance will be more time- and resource-intensive.

EXAMPLES OF ASSESSMENT OF SCALE AND SIGNIFICANCE IN EVALUATION REPORT

The section 32 evaluation for the proposed Regional Air Quality Plan for Environment Southland includes a statement about the scale and significance of the proposed plan.

The Auckland Unitary Plan s32 evaluation stated its approach to assessing scale and significance in its s32 evaluation. See also the comments about this approach in the audit of the s32 evaluation.

See also 4.8 Write evaluation report for further examples of evaluation reports for proposals of different scale and significance.

Integrate evaluation with community and iwi engagement

It is important to think about scaling the level of community engagement to be appropriate to the scale and significance of the issue or potential policy response (see Assess scale and significance).

Engaging with the community has a number of benefits to s32 evaluation, including that it can:

- help create stronger links between community outcomes and aspirations, including those of iwi/Māori, and policy options and solutions
- help identify the full range and scale of likely environmental, economic, social and cultural effects that may arise from implementing the proposal
- strengthen the information base to support the introduction of new provisions (community knowledge is an important source of information)
- be a way of obtaining feedback on the efficiency/effectiveness of different planning options from a range of perspectives before a preferred option is chosen, thereby reducing implementation risks.

EXAMPLE OF INVOLVING STAKEHOLDERS IN PLAN DEVELOPMENT EARLY

In developing the Proposed Southland Regional Policy Statement, Environment Southland held workshops with all Southland local authorities and iwi at an early stage to test the resource management issues and policy options. This reduced the likelihood of any 'surprises' in the formal consultation process.

Collaborative planning for complex issues

Councils are increasingly involving communities up-front in the plan development process to:

- reduce legal action
- discuss local challenges and aspirations
- gather robust information
- get more robust outcomes.

Some councils have used more collaborative planning approaches in developing freshwater management.

Collaborative processes need to be based around a strong evidence base. Collaborative groups need to understand and evaluate costs and benefits of proposed options, including choosing appropriate evaluation methods. Independent review of this evaluation may be required.

EXAMPLES OF COLLABORATIVE APPROACHES TO PLAN MAKING

For two examples of collaborative approaches to plan making, see Environment Canterbury's s32 evaluation of Variation 1 of the proposed Land and Water Plan, and the Selwyn Waihora zone committee programme as part of the Canterbury Water Management Strategy.

Iwi/Māori engagement in plan development and section 32

Alongside the s32 (4A) requirements to summarise advice from iwi authorities and the proposed response councils need to decide whether and how iwi should be involved in:

- defining outcomes, defining the problem, and assessing options
- providing input into research and evidence, including the degree of quantification appropriate
- understanding iwi/Māori values towards resources/places etc
- how to integrate statutory documents and iwi management plans into s32 evaluation
- how to integrate iwi/Māori values into evaluation methods and approaches.

See the Quality Planning website for guidance on consulting and engaging with iwi/Māori on plan-making, including guidance on meeting Schedule 1 statutory requirements.

EXAMPLES OF INVOLVEMENT OF IWI/MĀORI IN SECTION 32

See the Review of Issues and Options for Tangata Whenua in developing the second generation Northland Regional Policy Statement for ways of involving iwi/Māori in plan development.

See the frequently asked questions on iwi management plans (IMPs) on the quality planning website for guidance on using IMPs.

4.4 Identify and assess objectives

The starting point for formulating objectives should be the problem definition (or resource management issue) which should be based on clearly defined outcomes.

For information on how to draft good plan objectives, see the Quality Planning website.

For some amending proposals, such as plan changes, the existing objectives may remain unchanged. If this is the case, there should be a clear statement that the evaluation of

provisions will be undertaken against existing plan objectives and the purpose of the plan change.

EXAMPLE OF SETTING OBJECTIVES

For a discussion regarding setting objectives early, see The preferred approach for managing the cumulative effects of land use on water quality in the Canterbury region – A working paper.

Assessing objectives

S32 encourages a holistic approach to assessing objectives, rather than looking at each objective individually. This recognises that the objectives may work inter-dependently to achieve the purpose of Act.

In most cases, objectives will be evaluated qualitatively against criteria as a separate process from assessing provisions, and then subsequently re-evaluated after the provisions. Example criteria are outlined in table 4. See also Step 5: Re-evaluate objectives and provisions if necessary, for re-evaluating objectives once provisions have been developed.

Table 4: Criteria for assessing objectives

Category	Criteria	Comments
Relevance	Directed to addressing a resource management issue	
	Focused on achieving the purpose of the Act	This could either be identified as one overall assessment, or separated out into each relevant Part 2 matter.
	Assists a council to carry out its statutory functions	That is, section 30 or 31.
	Within scope of higher level documents	That is, objectives of national policy statement, regional policy statement.
Feasibility	Acceptable level of uncertainty and risk	This will not be known until after the provisions have been assessed.
	Realistically able to be achieved within council's powers, skills and resources	This will not be known until after the provisions have been identified and assessed.
Acceptability	Consistent with identified iwi/Māori and community outcomes	This should be informed by earlier community outcomes processes, or further consultation.
	Will not result in unjustifiably high costs on the community or parts of the community	This will not be known until after the provisions have been identified and assessed.

Note: You could rank criteria using a scale of 'achieves', 'neutral', 'uncertain', and 'fails to achieve', or alternatively a ranked scale could be used, such as from one to five.

4.5 Identify and screen response options

See Identify reasonably practicable options for provisions.

It is important to think as broadly and creatively as possible about potential solutions to achieving the objective(s) within the scope of the local authority's powers and responsibilities. Regulation under the RMA should not necessarily be the primary or only option. The Quality Planning website lists both regulatory and non-regulatory responses to an RMA issue.

Considerations for identifying options include:

- how do you want people's behaviour to change and how will the option create this change?
- legitimacy and/or acceptability of certain methods for achieving certain outcomes
- how would each option on its own or together with other options address the problem?
- degree of regulatory control (for example, through activity status)
- level of certainty for those being regulated
- cumulative impact of multiple rules on the same land parcel or area
- factual basis of the thresholds of certain rules (for example, flooding or hazard overlays)
- costs and time required for consent applications.

Examples of sources of options include:

- existing relevant policies and rules (the *status quo*)
- options identified:
    - through public consultation and engagement with iwi/Māori
    - in other strategic documents such as iwi management plans
    - through previous or new research studies or international approaches
    - through plan effectiveness monitoring
    - by politicians
- the provisions or methods used by other local authorities to manage the same issue
- options that represent varying levels of regulatory control
- regulatory and non-regulatory approaches.

It can be helpful to involve people with multiple perspectives, training and backgrounds, including key stakeholders, in identifying these options.

The range and number of options will be influenced by the scale and significance of the issue. For example, a plan change that aims to protect landscape values over a large area of land is likely to consider a reasonably wide range of options, both regulatory and non-regulatory. However, if a plan change is only proposing to make minor amendments to vehicle crossing widths or lighting levels, only one or two options would be necessary.

A suitable level of information should be gathered about these options to allow for understanding and high level evaluation. Refer to 4.6 Collect information on the selected option(s) for guidance on collecting this information, keeping in mind that at this early stage, information collection will likely be at a more scaled back level.

If going through a full plan review, local authorities should explain the rationale for both retaining and changing parts of the plan. Information from monitoring the effectiveness of plans can be one means of doing this, along with comparing to other councils' approaches, and other research. Do not assume existing plan provisions can just be 'carried over' into the new plan.

Screening options

Not all of the costs, benefits and risks of all options need to be assessed in detail. A pragmatic approach would be to review the initial list of options through a screening process to identify the preferred option and several key alternatives, and subject these to a more detailed examination.

S32 does not require a full analysis of all options. However, it is good practice to assess enough alternatives to allow meaningful comparisons to be made, and to ensure the recommended option is the most appropriate. Documenting this in the evaluation report demonstrates to readers that the RMA proposal was not pre-determined from the start.

Table 5 provides examples of criteria for screening. It may be that only the effectiveness criteria are used in this screening exercise, and the selected options are then assessed for efficiency (benefits versus costs) in more detail at the next stage.

Table 5: Criteria for assessing provisions

Category	Specific criteria	Comments
Relevance	How effective provisions are in achieving the objective(s)	This could be done by measuring the provisions against individual objectives, or an overall assessment against all relevant objectives.
Feasibility	Within council's powers, responsibilities and resources Degree of risk and uncertainty of achieving objectives Ability to implement, monitor and enforce	These criteria essentially test the options against whether or not they can be implemented.
Acceptability	Level of equity and fair distribution of impacts Level of community acceptance Likely political acceptance	These criteria assess the likely level of buy-in for the option(s).
Benefits	Choose all or select key benefits	The list of benefits (and related costs) will not be finalised until after information on the effects of the options has been gathered. See Attributing effects as costs and benefits for a description of benefits.
Costs	Choose all or select key costs	See Attributing effects as costs and benefits for a description of costs.

EXAMPLES OF COMPARING POLICY OPTIONS

Plan Change 13 to the Palmerston North District Plan is a good example of choosing and comparing policy options. PC13 aims to protect heritage items and significant trees within the plan. The s32 report evaluates four policy options (see Sections 3.2 and 3.3 of the s32 report).

Many councils release issues and options papers as part of seeking the views of the community on high level policy options. For example, see the Whangarei District Council's paper on rural reverse sensitivity, and the Westland District Council's paper on options for its District Plan review. It is important that these publications are referred to in the s32 report as they form a strong part of the policy development 'story'.

For a more complex, economic analysis see Landcare Research's report which is an evaluation of the impacts of different policy options for managing to water quality limits.

4.6 Collect information on the selected option(s)

Once a preferred option is identified, along with several key alternatives, more detailed information needs to be collected about its / their likely effects. The option(s) should also be developed further, to flesh out what they entail. Information on the 'do nothing' option would have already been collected as part of defining the problem but this may now require more detailed examination.

Information should be gathered throughout the planning process, right from problem definition to the hearing, where new and potentially more detailed information may come to light as a result of submitters' evidence.

Multiple sources and methods should be used to gather information. See Appendix 4: Methods for assessing effects of options for a table of some of these methods. This can include gathering stakeholder perspectives and the views and knowledge of iwi/Māori, through to environmental or economic modelling, expert assessment, and technical quantitative, or monetary-based information and analysis.

Bear in mind the use of this information in submissions, hearings, and potential appeals process, to ensure the information will be appropriate for those processes.

Information for specific issues

The Quality Planning website provides guidance on gathering information for some specific issues. For example, see the heritage guidance note.

Gathering the information

The steps below outline an approach to gathering this information taking a good practice approach to s32:

1 Identify the full range of effects

2 Describe the scale and significance of the effects

3 Quantify the costs and benefits, if practicable

4 Monetise the costs and benefits if possible

5 Decide the level of information certainty and/or sufficiency

6 Identify the risks of the options.

Step 1: Identify the full range of effects

The effects of proposed provisions are the predicted or assumed consequences of introducing those provisions. They should be able to be attributed reasonably directly to the proposal rather than effects that may occur anyway if the proposal was not introduced. In other words, the cause-effect relationship between the effect and the option should be carefully considered.

All likely environmental, economic, social and cultural effects[44] of the options **compared to the effects of no change** should first be identified (possibly as a list).

For example, a new proposal to rezone an area of land from rural to residential may have impacts over the short and long term on:

- high class soils
- waterways
- rural character
- cultural sites
- rural industry
- urban form
- community facilities
- housing provision
- population change
- flow on economic activity
- noise
- traffic and transportation
- construction.

[44] Effect in the Act is defined to mean — (a) Any positive or adverse effect; and (b) Any temporary or permanent effect; and (c) Any past, present, or future effect; and (d) Any cumulative effect which arises over time or in combination with other effects – regardless of the scale, intensity, duration, or frequency of the effect, and also includes— (e) Any potential effect of high probability; and (f) Any potential effect of low probability which has a high potential impact.

Step 2: Describe the scale and significance of the effects

The effects identified now need to be investigated to gain a fuller picture of what they entail. Obviously some uncertainty will remain and this can be managed in a number of ways (see Step 5: Decide level of information certainty and/or sufficiency). Understanding the effects of a proposal as thoroughly as possible helps ensure the best option is selected, and reduces the risk of regulatory failure.

See Table 3: Considerations for assessing scale and significance for guidance on what aspects should be included in assessing scale and significance. In particular, rows 3 – 7 are particularly helpful.

For proposals of high scale and significance, this might include a range of workstreams for collecting new information involving multiple specialists. For proposals of lower scale and significance, this may mean largely relying on existing information such as from plan monitoring, or collecting a smaller range of new information.

The information can be qualitative, quantitative or monetary, or most likely a mix of all of these. See the following steps for further discussion including associated methods.

EXAMPLES OF DESCRIBING EFFECTS

For an example of a proposal of high scale and significance, see the number of workstreams for the Waikato River Scoping Study

The section 32 evaluation for Plan Change 130 to the Whangarei District Plan includes a summary of a number of specialist assessments of the impacts of rezoning land in Whangarei to allow for bulk format retail. The appendices (B to E) provide the full technical assessments including an economic, landscape, transport, and urban design assessments.

Attributing effects as costs and benefits

Key aspects of understanding the scale and significance of effects are:

- determining who or what is likely to be affected, and by how much
- determining whether the effect is positive or negative.

Understanding this can illustrate what the overall increase or decrease in well-being there will be across the district or regional community as a whole along with determining how and what will be most affected.

Typically, costs and benefits can be distinguished based on the following parameters:

- the type of cost or benefit (administrative, compliance costs or savings, charges, tangible or non-tangible costs/benefits)
- the relationship between the regulation and the cost or benefit considered (direct and indirect costs and benefits)
- the frequency of occurrence of the costs/benefits (one-off or recurring costs and benefits)
- the degree of certainty of the costs or benefits (costs/benefits versus risks)

- the nature of the recipient of the costs or benefits (businesses, property owners, iwi/Māori, community, public authorities, etc)
- if they are economic, social, cultural or environmental costs or benefits.

Table 6 can be used as a reference checklist of most general costs and benefits that can result from new RMA plans/policies on different parts of the environment and community.

Table 6: Standard costs and benefits on parts of community

Affected group	Examples of costs	Examples of benefits
Existing community (district, regional, national)	Adverse effects on: • places, resources or sites valued by members of the community • social cohesion • opportunities for leisure and recreation • health and safety • access to employment opportunities.	Improved: • recreational and leisure opportunities • ability for social interaction • social cohesion, character and services in the community • employment opportunities.
Future generations	Reduced: • ability to experience highly valued resource or area • opportunities for leisure/recreation • health and safety and social cohesion.	Improved: • access to highly valued resources or areas • recreation/leisure opportunities • health and safety.
Iwi/Māori (recognise diversity of views/values within iwi/Māori groups and communities)	Adverse effects on: • sites of significance to iwi/Māori • iwi/Māori institutions and businesses • the ability to meet the principles of the Treaty of Waitangi • natural resources of value to iwi/Māori • places and areas of historical, spiritual or cultural significance.	Improvements to: • sites of significance to iwi/Māori or areas or resources valued by iwi/Māori • iwi/Māori communities • iwi/Māori institutions and businesses • quality of natural resources, including waterways.
Landowners	Direct adverse eg, noise, traffic, dust, overshadowing, odour. Reduced use or development rights. Increased consent costs and time. Reduced property values.	Increase in property values. Direct positive effects ie, reduction in noise, traffic, dust, overshadowing, improved accessibility. Direct positive effects as a result in an increase in amenities. Reduced consent costs and time.
Businesses	Increased costs from: • consenting • familiarising with the regulations • materials and production • lost sales due to restricted access to markets • licence fees or other charges • meeting reporting, monitoring or record-keeping requirements.	Increase in revenue and sales. Reduction in consent costs and licence fees. Reduced costs of materials required to comply. Lower production costs. Reduced compliance costs.
Consent authority	Cost of administering the new provisions: • providing information • recruiting and training staff • processing consent applications.	Reduced resource, administrative, compliance, and enforcement burden.

Affected group	Examples of costs	Examples of benefits
	Cost of verifying compliance: • conducting inspections and audits • monitoring. Cost of enforcement: • investigating non-compliance • conducting prosecutions.	

It is important to separate effects out sufficiently to allow robust analysis. However, while all stakeholders are important, s32 does not require an evaluation of the impact of new provisions on all individuals. Costs and benefits can be assessed based on the generic impacts on stakeholder groups. See Deciding whether effects are costs or benefits in Chapter 5 for further discussion.

Qualitative information

Qualitative information is usually collected as descriptions, anecdotes, opinions, quotes and interpretations. It is generally either not able to be reduced to numbers, or considered more informative and valuable if left as narratives.

Qualitative information is often used for values-based assessments about character, amenity, and spiritual aspects of the impact.

Presenting only 'soft data' can indicate a lack of attention to robust analysis. However, qualitative information can reflect complex and rich detail in a way quantitative information cannot. For it to be robust, it is important to draw on a variety of sources to test reliability and accuracy. Examples of methods for collecting qualitative information include:

- consultation, focus groups, workshops, hui
- collaborative processes
- impact assessments, for example, cultural impact assessments see the Quality Planning website for examples
- qualitative surveys/questionnaires – the people's panel for Auckland Council is an example of a way of collecting feedback on Auckland Council's planning documents
- case studies and literature reviews.

For further information on qualitative methods for identifying effects, costs and benefits see Appendix 4: Methods for assessing effects of options.

Step 3: Quantify the costs and benefits if practicable

The evaluation report should say why costs and benefits have or have not been quantified.

Quantitative information is used widely in resource management and can add specificity, depth and rigour to analysis. Quantitative information should be collected where this is practical.

Assumptions, limitations and the scope of quantitative information should be stated. This is to be transparent about the accuracy and strength of numerical information to provide appropriate context for relying on that information.

In some instances, the amount of effort or resources required to quantify a particular cost or benefit may not be justified based on the scale and significance of the proposal. Alternatively, the effect may not be able to be quantified, such as for spiritual values or the aesthetic value of a space. If this is the case, a qualitative assessment can be made.

However, simple quantitative information is often not difficult to obtain. For example, it may not be resource-intensive to gather existing information that between 50–100 people visit a particular reserve in any year, or that fencing of streams in a particular catchment would increase from 20 to 75km.

See Appendix 4 for further information on methods for collecting quantitative information on effects, costs and benefits of options.

EXAMPLES OF QUANTIFYING EFFECTS

PC84 Special Purpose (Airport) Zone to the Christchurch City Plan clarifies issues relating to the Christchurch International Airport. A number of specialist assessments were commissioned. The Integrated Transport Assessment (Appendix 12) quantifies the transport effects of four development scenarios associated with the proposal.

The Pauatahanui Judgeford Structure Plan process included an assessment of population, household and employment changes, and capacity in the Pauatahanui–Judgeford area under various scenarios of residential, industrial and commercial development, which would support different structure plan options. See the technical report in Appendix B.

Step 4: Monetise the costs and benefits if possible

Monetised value is when a financial value is placed on an aspect of the proposition, or an effect of it. S32 does not require costs and benefits to be monetised, however, it is good practice to express costs and benefits in monetary terms where possible.

The strengths of monetised values are that they provide a common unit of measurement to enable comparison between different impacts, and in particular for this data to be put into a monetised cost-benefit analysis to determine net benefit (or efficiency).

Some costs and benefits are best presented in monetary terms. These include likely compliance costs for council, increased or decreased consent application fees, etc. Economic costs can generally be valued with reference to market transactions (although methods to do this may require specialist input). Earthworks, fencing, drainage, construction, planting, engineering, legal representation. and labour can also often be valued through market prices.

Some of the methods to determine monetary values, particularly for non-market impacts, are often costly and have questionable methodologies. Impacts on amenity, biodiversity, spiritual values, iwi/Māori, and community cohesion are difficult to value in monetary terms and it is often seen as inappropriate to do so.[45]

[45] For example, see Careys Bay Assn Inc v Dunedin CC EnvC C150/03 for consideration of how to evaluate cost-benefit, efficiency, and effectiveness in the context of mitigating noise effects in plans regulating the use of port land.

However, it may be worth the effort to employ non-market valuation methods to monetise some of these costs and benefits where the scale and significance of the effects is high, an accepted methodology can be applied, and there is an aim to use a monetised economic evaluation method to evaluate costs and benefits.

For further information on methods that place a monetary value on effects, costs and benefits see Appendix 4: Methods for assessing effects of options.

EXAMPLES OF EXPRESSING EFFECTS IN MONETARY VALUES

The Proposed Auckland Unitary Plan s32 evaluation for design statements estimates the economic cost of requiring design statements as part of resource consent applications based on time and cost on resource consent applicants. The process developed to monetise these costs is outlined.

The economic assessment carried out for Plan Change 130 to the Whangarei District Plan provides monetary costs and benefits of introducing bulk format retail.

The New Zealand non-market valuation database identifies non-market valuation studies that have been undertaken in New Zealand, including studies such as the valuation of the aesthetics of the Kawarau Gorge, the value of Whanganui River recreational canoeing, and the valuation of the agricultural impacts on Canterbury streams and rivers.

The Waikato River Scoping Study (Appendix 13) outlines an economic input-output analysis of economy-wide effects resulting from the introduction of measures to clean up the Waikato River. Landcare Research's paper, Using economic modelling to inform limit setting processes for freshwater resources also summarises the use of economic modelling to inform limit setting processes for freshwater resources.

Step 5: Decide level of information certainty and/or sufficiency

Planning processes do not need to ascertain with certainty all future effects of all future activities, just enough to understand if the option will form a robust framework, and to avoid significant unforeseen circumstances and high unexpected negative impacts.

Once information on effects, costs and benefits has been collected, information sufficiency/certainty for all options should be assessed. See Table 7 for types of uncertainty.

Table 7: Types of uncertainty

Data- and science-related uncertainty	Value- and behaviour-related uncertainty	Regulatory uncertainty
• Measurement error such as logging errors, incorrect use of instrument, etc • Incorrect data analysis/processing • Incorrect modelling assumptions • Unknown relationships within and between ecosystems and humans • Rapidly changing and highly unpredictable environmental conditions (ie, storm events, earthquakes, hydrological cycles	• Uncertainties about community values • Unknown future consumption patterns • Influences due to values and attitudes of managers/decision-makers • Influences due to current political 'climate'	• New and untested approaches • Flexibility of regulation to allowing for different eventualities

The level of uncertainty could be assessed using a ranking system of high, medium, or low uncertainty, or 1–5.

If information is found to be fully sufficient, this should be clearly documented, including the reasons why it is considered that there is full information.

If there is a high level of uncertainty about the effects of the different options, ways of reducing this uncertainty should be considered. This is particularly the case if the lack of information is likely to have a high impact on the ability to robustly evaluate the options, and/or may result in a high level of risk. See Predicting the effects over time and testing implementation outcomes for a discussion of ways of playing potential effects out over time.

EXAMPLE OF ASSESSING UNCERTAINTY

See Environment Canterbury's discussion of uncertainty for managing of nutrients in the Hurunui River Catchment.

See the annotated references relating to uncertainty.

Step 6: Identify the risks of the options

Some RMA issues have inherently more risk and uncertainty associated with them. For example, the risk of loss of property and people's health and safety in a potentially hazard-prone area as a result of allowing further development. For guidance on taking a risk-based approach to natural hazards, see GNS's publication on managing flood risk.

There are different ways risks can be identified and managed as part of development and analysis of options for a proposal. Some of these are outlined in table 8.

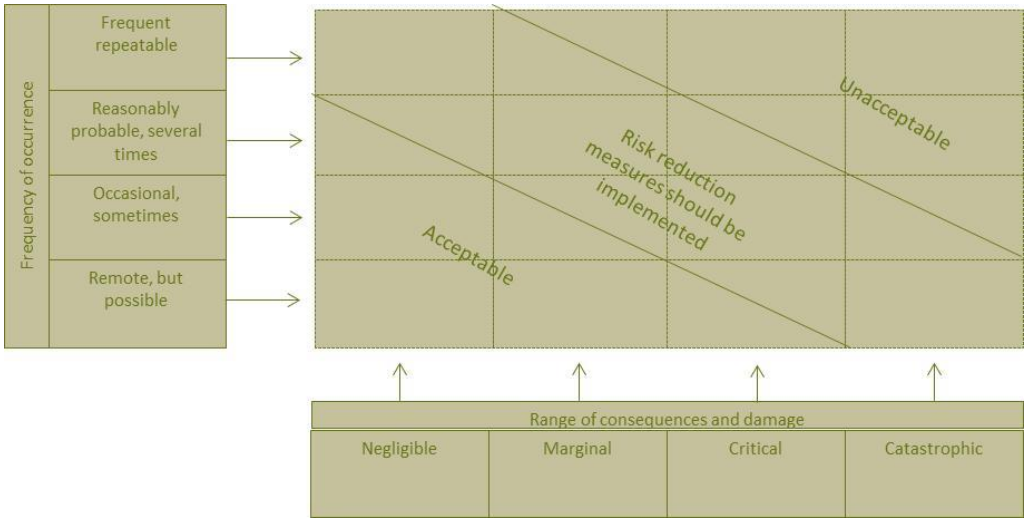
Table 8: Steps and approaches for assessing risk

Step	Approach
Incorporating uncertainty and risk considerations into problem definition	A preliminary risk assessment can be undertaken during problem definition. Questions to ask could include: • Are any of the options likely to be novel, or unprecedented? • Is the evidence base for the size of the problem or the effectiveness of different policy options weak or absent? • Are the benefits or costs of the policy options likely to be highly uncertain? Are there obvious risks that need to be managed? • Is the success of any of the options likely to be dependent on other policy initiatives or legislative changes?
Considering risk as part of identifying and assessing the effects of different options	Give explicit attention to identifying and assessing effects that have high potential consequences and low potential probability. Involve experts and other stakeholders as necessary as part of this process.
Building risk criteria into the analysis of options	For example, ranking options based on their risks to human health, indicator species, etc.
Consulting with stakeholders and the community on acceptable levels of risk	This will provide insights into differing levels of risk perception and acceptability.
Testing variations of outcomes of options based on different eventualities	This means testing the options and the methods of evaluation by changing some of the inputs. This can be done using multi-criteria analysis and cost benefit analysis.

While not a requirement, a comprehensive risk assessment may be justified and should be determined on a case-by-case basis, depending on the scale and nature of the proposal, the degree of uncertainty in key costs or benefits, and the risk tolerance of stakeholders.[46]

Figure 4 provides a qualitative approach to assessing the level of risk, and what may need to be done about it.

Figure 4: Assessing response to risk assessment



[46] If that is the case, see the Joint AS/SNZ ISO 31000:2009 Risk management principles and guidelines; and SA/SNZ HB436:2013 risk management guidelines handbook for further guidance.

If the risk is assessed as being unacceptable or needing reduction, this may mean either acting or not acting until further information comes to light depending on which has greater risk.

Table 9: Different approaches for managing risk

Step	Approach
Building flexibility into policies and rules to allow for managing risks	This could mean setting an activity status for certain activities that allow for further assessment of risk at consent stage.
Building an adaptive management approach[47] to accommodating new development or use	This may, for example, mean adopting the proposal, but setting certain thresholds and building in regular policy reviews, while more scientific research is being undertaken.
Setting up a policy framework to deal with risk at a lower level of decision-making	For example, a national policy statement could defer to a regional policy statement, a regional policy statement to a regional plan, or a district plan rule to a consent application. This acknowledges that better knowledge may be present in subsequent processes where more in-depth analysis may be undertaken.
Apply the precautionary principle if there is risk of serious or irreversible damage	This would be to either act or not act depending on the proposal even if uncertainty is present, or amend the proposal so that it avoids serious or irreversible damage.

It is essential to document information on uncertainty and risk, and the assumptions made as a result. This needs to be clearly stated in the evaluation report.

4.7 Evaluate options

The next key step in the s32 evaluation is to compare and contrast the options that are being assessed by using all the information collected. This is likely to be an iterative process.

Step 1: Collate all information and put into comparable format

All relevant information on the effects, costs, benefits and risks of the preferred option and key alternatives (including the baseline option or *status quo*) needs to be collated and turned into a format that can allow comparison. This includes any:

- specialist reports
- responses from community/iwi engagement
- numerical data
- compliance and implementation costs
- plan monitoring information
- scenarios
- modelling
- case studies, etc.

Assessment criteria should be the basis for sorting this information into groupings, and this criteria should be based on the two key concepts of effectiveness and efficiency. It may be beneficial to turn all information into a similar format, such as rankings of 1–5 or low to high in

[47] See Environmental Defence Soc Inc v The New Zealand King Salmon Co Ltd [2014] NZSC 38, (2014) 17 ELRNZ 442

terms of level of impact. If not being converted to a similar format, all qualitatively expressed information could be summarised. At the very least, all information being used to assess the options should be available in one place to form the information base for analysis.

It may be useful to record the information in one table which displays monetised, quantified and non-quantified costs and benefits clearly for each option to provide an overall comparative picture. Separate more detailed tables could be prepared for each option which disaggregates the costs and benefits to different parts of the community.

The means of collating the information will be influenced by the evaluation method being used. For example, if using multi-criteria analysis or a matrix based on rankings, information will likely need to be converted to a numerical ranking.

It is important at this point to clearly communicate and have available any issues, limitations, uncertainties, assumptions, etc, with the information.

Step 2: Select evaluation method

A number of evaluation methods can be used to evaluate the preferred option and key alternatives. These tools help decision-makers make an informed decision. They do not make the decision for them, or necessarily make the decision easier. This step is shown here, but should also have been considered when setting up the evaluation approach.

The evaluation method should be appropriate to the scale and significance of the proposal, and to the type of information and issue. Tips for choosing an evaluation method (as adapted from envirolink) include:

- clearly define the questions an evaluation method needs to help answer. Core s32 questions include being able to compare costs and benefits
- consider how the method may link into the decision-making process to be followed (timeframes, resources, community participation)
- understand how the information provided by a method will need to be presented to be useful for the community engagement and decision-making process
- see how easy the method is to use – can it be readily included into an existing decision making process?
- understand the underlying assumptions and limitations of the method – will these be explainable and defensible?
- understand what data and technical expertise is required to run the evaluation method – can these be provided or sourced?
- check if the results could withstand peer review by other experienced practitioners, and be explainable to a variety of audiences.
- check if there are additional costs involved in using the method such as software or licencing
- check if there is support for learning about, setting up, and using the method (documentation, case studies, NZ examples/users)
- understand the 'maturity' of the method – new and emerging methods may require more resourcing to learn and implement
- take time to explore options and to understand the merits of using different methods.

Appendix 5: Methods for evaluating options summarises the key methods that can be used to evaluate options, including to summarise their uses, strengths, weaknesses and information requirements. These range from ranking matrices, through to formal cost-benefit analysis and multi-criteria analysis.

Chapter 5 also provides a commentary on some of the questions and challenges associated with selecting and using an evaluation method.

Choosing an evaluation method for a specific purpose

Table 10 gives guidance on choosing a fit for purpose evaluation method:

Table 10: Choosing an evaluation method

If the proposal…	then the most appropriate method may be…
• is of small scale or significance, and • the information is fully qualitative	a simple matrix (either using rankings or descriptions)
involves many trade-offs and multiple stakeholders	a collaborative process with a rigorous method agreed as part of the overall group
has a large scale and high significance of impacts (particularly if there are likely high costs)	one that is able to analyse more detailed and potentially quantified or monetised information, such as multi-criteria analysis, or cost benefit analysis
includes values and impacts on iwi/Māori	an evaluation method that best recognises these
has benefits that do not vary across options	one that analyses costs in detail only. Cost effectiveness analysis is an example of this
has benefits and costs that can mostly be monetised	an economic evaluation method, such as cost-benefit analysis or cost-effectiveness analysis
includes considerable uncertainty in the costs and benefits	one which is able to change different variables using sensitivity analysis may be most appropriate. This would include cost-benefit analysis and multi-criteria analysis
has information that can be translated into numerical rankings and/or weightings	multi-criteria analysis
• places importance on the need to demonstrate a net benefit, and • most costs and benefits can be monetised	Cost-benefit analysis

Step 3: Evaluate costs, benefits and risks of provisions

The chosen evaluation method or methods should be used to evaluate the efficiency, effectiveness, and risk of the provisions of the selected options. Depending on the scale and significance of the proposal, this may include just the preferred option (the proposal) or several options. Also, it may be that effectiveness of the options have been screened earlier, in which case only the efficiency and risk of the selected or preferred option are evaluated. The method(s) should refer to the criteria developed earlier (see 4.5 Identify and screen response options). Appendix 5: Methods for evaluating options summarises different evaluation methods, and provides a statement about what each method is suitable for.

EXAMPLES OF DIFFERENT APPROACHES TO EVALUATING POLICY OPTIONS

Ranking matrix: See the Queenstown District Council's signs plan change s32 evaluation, which was of reasonably low scale and significance

Spatial-based approach: The Pauatahanui-Judgeford Structure Plan took a spatial based approach which is often suited to discrete development areas such as those proposed through structure plans.

Structured decision making: The Hawke's Bay Regional Council TANK process used structured decision making which was a collaborative process based on agreed outcomes.

Collaborative approach: The Canterbury Water Management Strategy which involved a complex, multi-stakeholder policy process followed a collaborative approach.

Multi-criteria analysis: The Auckland Regional Council used multi-criteria analysis of for assessing aquaculture options given that monetary information was not available for many impacts. The report includes a summary of why this method was chosen over others.

Cost-benefit analysis: Auckland Council undertook a cost-benefit analysis of parking requirements as part of the Auckland Unitary Plan. This issue is of high importance, costs could be monetised and it was useful to see net benefit.

Step 4: Decide most appropriate option

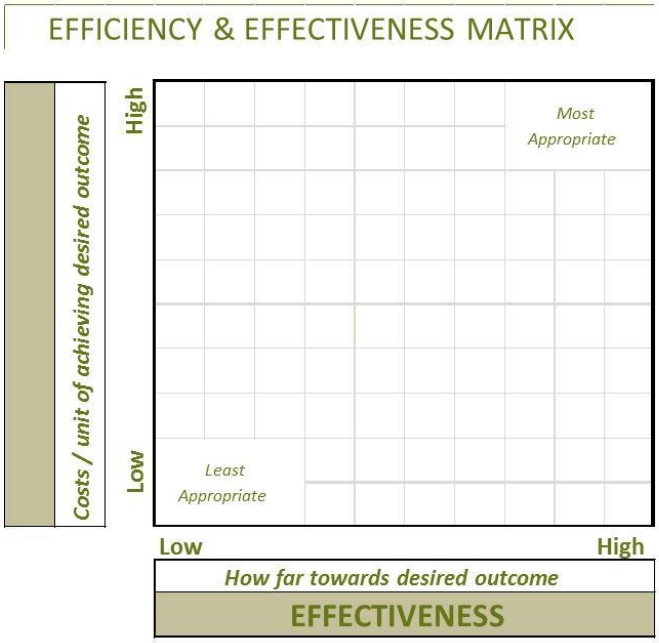
The decision of what is most appropriate is the culmination of all previous analysis of options. It will involve a balancing of effectiveness and efficiency as shown below in Figure 5. Ideally, the preferred option for provisions will be that with the highest efficiency and effectiveness. However, this may not always happen. In addition, there may not be a 'stand-out' option.

The most appropriate option may end up being a combination of a number of options, or a slight iteration of an option as a result of further examination, such as setting a slightly different rule trigger or limit.

Where it is difficult to distinguish between one or more options, the following questions should be asked:

- Do the criterion, including the weightings, soundly represent the outcomes sought? For example, have the trade-offs between different goals been correctly articulated?
- What are the sensitivities in the analysis if one or more factors is changed? How does this affect the results?
- Are there any specific results that breach a threshold of acceptability, ie, level of costs to certain parts of the community, environmental bottom lines reached?
- Are there uncertainties or assumptions that may skew the results?
- What differences in impacts would there be under different possible futures?

Figure 5: Efficiency and effectiveness matrix



Once the most appropriate option has been selected, further information collection is likely to be needed to support its inclusion in the evaluation report, and to support the proposal being notified.

Step 5: Re-evaluate objectives and provisions if necessary

After completing the analysis of the provisions, the objectives should be re-evaluated to check their continuing relevance and appropriateness. This is particularly the case if no option appears to provide sufficient benefits for the level of cost involved.

4.8 Write evaluation report

The evaluation report needs to tell a clear and convincing story of the what, how and why of the results of the planning process so the proposal rationale is clear and logical to readers. It is essentially a summary of all the substantive work and analysis of the plan/policy development. An example table of contents is in Appendix 3. Some of the core content that should be included in the report is:

- contextual information, including links to wider strategic context. This is particularly important given the pared-back nature of second generation plans under the RMA
- the justification for taking action. Clearly outline the problem or issue, and describe the deficiencies with the current situation
- how information was collected, including how the community and/or iwi/Māori were involved in policy/plan development
- the key alternative options considered and a summary of the analysis of those alternatives, including their efficiency, effectiveness, and appropriateness
- a summary of advice received from iwi authorities and the response to the advice, including any provisions of the proposal that are intended to give effect to the advice
- a description of the approach to analysis including:

  - the rationale for the level of quantification of costs and benefits
  - the methods used to estimate costs and benefits and why these were chosen
- all major assumptions, including the scope of the analysis
- the biases, limitations, risks and deficiencies of the analysis
- the relationship between scale and significance of the effects of the provisions and the detail in the report.
- a summary of the environmental, social, economic and cultural effects of implementing the provisions and any alternatives, and an evaluation of their benefits and costs
- a clear, robust recommendation as to why the preferred option was chosen, outlined in a way that its implications and reasons are easily understood by decision-makers and submitters.

The Auckland Unitary Plan audit checklist can also be used as a helpful reference to check all aspects of the evaluation are covered. See Appendix 2: Auckland Unitary Plan audit criteria.

Clear, readable, consistent reports

The evaluation will potentially be read by a range of stakeholders, particularly decision-makers and submitters. It is vital that the information is clear, logical and easy to read. The right balance needs to be struck between being comprehensive and being concise.

It can be useful to prepare a template before the writing process begins to make sure all aspects are covered, and to ensure all different s32 writers use a consistent structure. This is particularly important for full plan reviews or large plan changes.

Some additional ways of to make the report easier to read include:

- inclusion of a navigation document for full plan reviews
- inclusion of a clear, easy-to-understand table of contents. (see Appendix 3: Example evaluation report table of contents)
- inclusion of an executive summary, particularly for longer reports
- writing in plain English and minimising the use of jargon
- stating at the start who the audience is, and keeping this in mind while writing
- explaining at the start how the report is structured and how the document should be navigated
- using visuals where possible. This is particularly the case for explaining evidence. Maps, graphs and other visual tools can be used
- putting detailed analysis and description, such as provided by technical reports, into appendices
- avoiding the use of pages of tables assessing the provisions. Instead think of more concise, helpful ways of presenting this analysis
- inclusion of a glossary
- think about how the structure of the report works with the planning document and try to align
- have one person review all reports for consistency if they are written by different writers

- have the report available online, with links to different chapters and appendices listed separately.

Deciding on report detail and structure

The amount of detail contained in the report will be determined by the scale and significance of the proposal and the corresponding level of analysis undertaken. It is better to include a succinct summary of high-quality analysis than to write pages on sub-standard analysis.

All reports should include standard content (see Appendix 3: Example evaluation report table of contents). However, there will be differences in detail around:

- the description of the problem and the baseline. For larger scale and more significant proposals this should be fully articulated and detailed, including reference to high-quality supporting evidence
- the process of development, including how options were selected. This is likely to include a wider range of options if the proposal is of higher scale and significance
- the rationale for the evaluation, including approaches taken, assumptions made, key decision points, risks, etc
- the effects of the different options. For higher-scale and -significance proposals, more directly related research and investigation may have been done, so links to detailed appendices may be appropriate
- the analysis of benefits and costs. For simple proposals, a summary table may suffice. For a more complex, more contentious proposal, a link could be provided to a more detailed, analytical evaluation using multi-criteria analysis (for example)
- how the community was involved in the process, and what their responses were could differ considerably.

Presenting the analysis of provisions

Practitioners often struggle to come up with clear, concise ways of presenting the analysis of provisions. The most common approach is to present descriptive tables with information on costs, benefits, effectiveness, efficiency and risks.

This may still be appropriate for some plans and plan changes. However, it often results in pages of tables which are difficult to read, so the 'story' is lost.

Following are some tips for providing more concise, readable, summaries of the analysis:

- Presenting the analysis of larger packages of options rather than analysing each individual policy or rule. The s32 evaluation would tell a clearer, more convincing story that is more accessible to readers if it summarised the analysis of a wider package of provisions.
- Having a spreadsheet or table in an appendix which comprehensively assesses costs and benefits for policy/rule packages for different parts of the community, and records which option has the highest overall benefit relative to costs. The actual evaluation report could just state the outcome and refer to the appendix.
- A table could be included in the main body of the report which summarises the overall assessment of the provisions in terms of effectiveness, efficiency and risk. Further analysis again could be included in the appendix (see table 11).

- Only specific policies and methods which have high scale and significance could be individually evaluated. This could reduce the length and detail of the evaluation.

Table 11: Example table for presenting options analysis summary

Options	Objectives	Impacts		Overall assessment
	Are they met? How?	Net effects	Risks	Preferred? Why?
Option 1	Describe	+ / –	Describe	Describe
Option 2	Describe	+ / –	Describe	Describe
Option 3	Describe	+ / –	Describe	Describe

Other possible content

- The report should outline the monitoring and review requirements on the provisions if the anticipated effects are uncertain, or where scale and significance of effects is high.
- Anticipated environmental results could be included (these no longer need to be included in plans).

EXAMPLES OF EVALUATION REPORTS

For an example of the use of a template for preparing a large s32 evaluation, see the Auckland Council's template for preparing the s32 evaluation reports for the Auckland Unitary Plan. Using a template when there are multiple authors helps achieve consistency.

The Waikato Regional Policy Statement is an example of a detailed evaluation reflecting high-scale and -significance of issues at a regional level. Part A of the report provides a succinct overview of the significant resource management issues of the region, including a description and explanation for each issue. Part A also explains how the Council determined the scale and significance of these resource management issues with a detailed explanation of each key issue provided.

For two examples of small scale plan changes, see:

- The section 32 evaluation for plan change 48 to the Queenstown District Plan is clear and well organised.
- The Wellington City Council Plan Change 78 – General Minor Amendments to District Plan Text and Maps (2014).

4.9 Consider evaluation report before notifying

See chapter 3 for further discussion on the meaning of "have particular regard".

If the evaluation is of low quality, the local authority may decide that the proposal cannot be notified until the s32 evaluation is improved to address concerns, or council may require staff to develop a different approach to the proposal. Local authority staff should consider:

- ensuring the evaluation report is ready well in advance of the notification date for the plan

- ensuring that councillors are 'taken on the journey' of the policy/plan development process. This includes understanding what information is being collected, the methods of analysis, the approach to quantifying costs and benefits, and the policy options and their relative merits
- running training courses or workshops for staff and councillors to ensure they are well versed about the s32 requirements
- issuing a draft s32 evaluation for comment if a draft plan is provided for comment to the community. This provides an opportunity to seek feedback before formal notification and may iron out any issues with the evaluation.

4.10 Evaluate changes post-notification (further evaluation)

A further evaluation is required if changes are made to a proposal as a result of the submissions/hearings process.[48] This is required even though an original evaluation report for the proposal has been completed. If no changes were made in the hearing process, no further evaluation is required. If the changes are very minor, a very simple further evaluation can be carried out.[49]

Often however, a range of changes, some substantial, may be made to a notified proposal as a result of the submissions and hearing process. Submitters may raise valid concerns and issues with the proposal. Submissions can also challenge the s32, such as challenging the approach to, or conclusions about, the costs and benefits, or the risks of the proposal etc. Pre-hearing mediation and conferencing can mean alternatives are agreed to amongst multiple stakeholders and experts. A considerable wealth of evidence is often presented before and during the hearing which can influence the direction of a proposal, or specific parts of a proposal. Decision-makers then evaluate all this information and come to a decision which may involve changing the proposal.

S32AA requires that all changes to a proposal since the original evaluation must be well justified and supported by sound information that demonstrates the change will be appropriate, efficient and effective. This needs to be transparently documented.

Key matters to consider

Points to consider when completing a further evaluation and having particular regard to that evaluation include:

- Who will prepare the further evaluation and how will it be prepared?

  Because the further evaluation can either be referred to in the decision-making record or documented in a further evaluation report, the responsibility for the further evaluation needs to be clarified and confirmed. The hearings panel should be more aware of their obligations under s32 with the new requirements.
- The link between the further evaluation and hearing evidence, and in particular, the council officers' report on recommended changes as a result of submissions and further submissions.

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[48] The new evaluation report must cover all matters in s32(1)-(4).

[49] See chapter 3 for more about the submissions/hearing process and how changes may be required.

- How the results of caucusing and/or mediation will be reflected in the further evaluation. Think about how these results can be documented.
- What recommended changes to the plan or plan change since notification have a larger scale and greater significance of effects, and what level of evidence is needed to support those changes (including evidence from submitters).

  If evidence is not sufficient, consideration will need to be given as to how this evidence will be collected. It may be that further evidence may need to be commissioned.
- How the further evaluation report will be structured to allow comparison to the original evaluation but be clear about changes made.

EXAMPLES OF FURTHER EVALUATIONS

The Palmerston North City Council proposed plan change 11: Institutional zone provides an example of a further evaluation that has been recorded as part of the decision-making record.

The Ruakura Private Plan change request was subject to a board of inquiry process and provides an example of a further evaluation report prepared by consultants acting for the applicant.

4.11 Consider evaluation when deciding

Decision makers need to ensure they meet their obligations to have particular regard to the further evaluation before deciding on a proposal. This might include considering:

- the scale and significance of the changes since the original evaluation
- whether there is sufficient evidence in the further evaluation for determining what is most appropriate, particularly where changes have been made since the original evaluation
- the basis for any submissions that raised challenges to the original evaluation.

4.12 Implement

Choices around implementing an RMA proposal can have a major influence on expected compliance rates and whether the expected benefits materialise. Sometimes a lot of costs can be incurred during the implementation phase (such as the costs of monitoring and data collection), so these key parameters should be included in the analysis of the costs and benefits of options. This is part of identifying and assessing effects, costs and benefits of each option. Practical implementation issues can include:

- operational issues such as how the policies and rules will function, and what resources will be needed to administer them
- the information that regulated parties will require to comply with the new provisions and how this will be provided
- timing and transitional arrangements, such as delayed or gradual introduction of new requirements, and/or provision of interim assistance. It is critical to consider the timeframes for implementation and how practical and realistic these are

- how compliance will be enforced, and what the process will be
- the degree of flexibility allowed in decision-making, and the quality of that decision-making, such as at resource consent stage
- whether sufficient attention has been put into designing policies and rules to account for uncertainties and implementation risks
- the likelihood of, and ways of managing, consent runs (ie,. the likelihood of an increase in landowners applying to carry out an activity in advance of new restrictions being introduced).

This is why it is important to involve consent and compliance teams in policy development to check implementation risks and issues. It is also important to test assumptions and potential requirements with key stakeholders, including those likely to be needing to comply with the new requirements.

Ways of reducing compliance costs should be considered during the evaluation of options. There may be trade-offs between compliance costs and the administrative costs to a council, and these should be explicitly identified.

4.13 Monitor, review and evaluate

It is important that new policies are monitored and evaluated, to ensure they are working as expected, that there have been no unforeseen consequences, and that they continue to be necessary as circumstances change and evolve.

When new plans and plan changes are being proposed, it is important to determine:

- how effectiveness will be measured
- what indicators will be used
- what data will be required
- how this information will be collected, and by whom.

A monitoring and evaluation programme should be designed at the same time as plan provisions are being developed.

These monitoring and evaluation costs should be factored into the analysis of options:

- is there still a problem?
- have the benefits and costs incurred been as anticipated?
- did we get it right or not?
- if not, in what way is it not right?

For more information on monitoring, refer to the policy and plan effectiveness monitoring guidance note on the Quality Planning website.

5 Key practice questions and considerations

These practice questions and considerations address comments received on the interim version of the guide, feedback from the focus groups used to inform revisions to this guide, and questions raised through the s32 workshops.

Dealing with time, cost and resource constraints

Local authorities have to make difficult decisions about how to allocate limited resources. A key way of managing time, cost and resource constraints is to have a clearly set out evaluation approach. This includes having efficient systems to draw on already available data and information, and setting priorities early.

Taking a strong project management approach to all proposals can also help to allocate resources wisely, and make the most efficient use of each staff member's time. This includes taking a proactive and strategic approach to seeking specialist input.

In addition, each council has a wealth of information that could be shared across different councils. Working with other councils and learning from other councils' approaches could greatly assist in managing time, cost and resource constraints.

Addressing issues of information availability

Perfect information is rarely possible in resource management decision-making, particularly when attempting to forecast the effects of new policies. Step 5: Decide level of information certainty and/or sufficiency in Chapter 4 covers information insufficiency, and ways of assessing the risks of this. The annotated references contain further resources.

However, there is a wealth of information available at a general level that can be drawn on to help assess effects and test policy validity. In particular, plan effectiveness monitoring can provide a solid information base if sufficiently resourced.

It is also important to take a multi-disciplinary, multi-source approach to collecting and testing information, and to have a structured approach to evidence-gathering from an early stage in policy development. This helps to ensure that the right evidence is gathered in the right way. This is particularly important for proposals of high scale and significance.

Considering categories of effects

S32(2)(a) lists a range of effects and puts them into the categories of environmental, economic, social and cultural. These categories are not necessarily separate and distinct, and often have complex relationships that overlap. Effects may have environmental, economic, social and cultural dimensions in their likelihood, scope, scale, location, timing, and their positive or adverse significance. For example, cultural effects on iwi/Māori incorporate aspects

relating to the economic well-being of iwi/Māori and opportunities for business development, along with spiritual values towards the environment.

Instead of classifying effects to these four categories from the outset, it can be more useful to identify who is affected, rather than in what category the effect falls. However, it is important to ensure effects from all four categories have been included in the assessment. See Appendix 4: Methods for assessing effects of options for different ways of collecting information across all four categories.

Assessing effects on economic growth and employment

How economic growth and employment opportunities are assessed will depend on the scale and significance of the proposal. For proposals of lower scale and significance, data can be collected on available key economic information. See Finding data on economic effects when a specialist economic impact assessment is not possible.

Economic growth and employment effects are most commonly assessed through economic modelling, such as input-output analysis and general equilibrium modelling (GE). See the table in Appendix 4: Methods for assessing effects of options for more information on these and other methods. These generally need to be carried out by a qualified economist.

Models identify the direct effects of a proposal (for example, a plan change to enable commercial development on a site), and track through the effects on business output, the value added, employment, household incomes, and government revenues. Models take into account existing structures and interflows in the economy, and allow for both changes in directly affected sectors, as well as flow-on effects across other sectors (indirect effects), and consequent effects from household spending (induced effects).

Estimates of economic and employment effects made in isolation run considerable risk of double counting. Net effects and the wider effects need to be identified. For example, increased dairy farming means higher output, higher value added and higher employment in regional economies, but may also generate increased nutrient runoff into the river system.

Incorporating economic growth and employment assessment in cost-benefit assessments

While higher levels of economic output and employment are generally considered beneficial for the community, an increase in GDP or employment cannot be automatically considered a benefit. This is because economic activity includes both benefits and costs – additional activity incurs additional resource inputs, employment includes the time and energy input of the person employed. The shares of economic activity and employment that can be considered a benefit are difficult to measure, and generally double-count costs or benefits that have already been considered and would in any case vary from situation to situation.

Therefore, economic growth and employment measured as gross indicators – commonly GDP and persons employed – need to be treated very carefully alongside other indicators of costs and benefits within a s32 evaluation.

The recommended approach is to report growth and employment effects separately from the evaluation.

Including the inter-relationships between cause and effects in analysis

Part of understanding the effects of a new proposal is to consider the inter-relationships between different factors from a systems perspective. This is particularly important for complex environmental and/or social systems. Page 47 of this report prepared for Environment Canterbury (ECAN) by ECAN, NIWA, AgResearch, Harris Consulting and Dairy NZ shows the causal relationships between nutrient losses and social and economic factors in the Hurunui catchment.

Systems thinking is one example of a method for establishing causal connections between effects. For example, see Systems thinking on the SustainabilityNet for a number of links to systems thinking methods.

Systems thinking is a method of capturing how one factor influences another by means of influence diagrams (sometimes called causal loop diagrams). Creating these diagrams and working out how factors interact when taken as a whole, brings increased understanding of the inter-relationships at play.

Deciding the significance of effects and assigning weightings

There are often complex underlying tensions in achieving resource management goals. For example, development decisions on private property where community values are likely to be impacted, and the fair and appropriate use of publically-held resources.

It is often difficult to make decisions about the policy and method settings associated with these goals, and also to weigh the relative importance of these factors together when faced with conflicts. This essentially requires that some sort of weighting is applied to rank the importance of effects.

In part, timeframes are an important part of weighing different goals. This is addressed in Setting an appropriate timeframe for analysis. In addition, the following can provide direction on how to determine this weighting in the context of a new planning proposal:

- reference to the overall decision-making framework within which s32 sits
- Part 2 of the RMA and case law around Part 2, including the different levels of weighting within it
- higher level documents that can address priorities and how to deal with competing values
- consultation and local community values – the nature, spread and distribution of these
- monitoring of outcomes to help identify where too little or too much weight has been given to some outcomes in the past
- for particular issues, methods that involve polling representative members of the community on what their decisions would be in certain situations could be done.

Good quality policies and methods will be explicit about the outcomes they are trying to achieve, and therefore the weighting that has been applied and trade-offs made, rather than leaving this to consent stage. However, some uses and activities do need to be tested at consent stage.

Significance can also be thought about in relation to who the relevant community of interest is. Although the impacts on individual property owners should be considered, the ultimate question when considering new RMA proposals is whether the provisions would promote

sustainable management, considering economic, cultural and social well-being and environmental effects. This is about considering the effects holistically rather than just at an individual property level.

Deciding whether effects are costs or benefits

It may be that some effects are difficult to classify, as they are positive for some parts of the community and negative for others. The easiest way to resolve this issue is to disaggregate an effect, into its negative effect(s) and its positive effect(s). For example, relocating a park will affect a community's access to park space. Overall access (as measured by average walking distance) may improve by 10 per cent. However, if that average improvement is a combination of some people facing a 20 per cent deterioration while others get a 30 per cent improvement, then it is preferable to identify both the negative and positive outcomes, and understand how many receive a benefit and how many a cost.

It is generally straightforward to identify the specific effects of a proposal, and whether they are negative or positive. If an effect is still bi-directional (ie,. shows negatives/costs to some, positives/benefits to others) then some further disaggregation may be needed. This will depend on the importance of understanding the costs and benefits at this level of detail.

What are direct and indirect effects and should they both be included in the evaluation?

Direct effects are those that are experienced in the same time and place as the activity. Indirect effects are a flow-on consequence of the proposal. For example, a direct effect is a cost to a business as a result of a new rule or the effect on a neighbour of a new extension. An indirect effect could be the effects on a town's economy as a result of the introduction of new heritage provisions. The key is to ensure a cause and effect relationship between the indirect effect and the option. There are many processes or driving forces at work in the community, economy and the physical environment.

The combined direct and indirect effects are an important part of policy evaluation and planning, and they both need to be addressed in s32 evaluation. It is necessary to:

- be able to differentiate between direct effects and indirect effects to ensure there is no double-counting
- have established guidelines as to the extent of inclusion, and significance of indirect effects, and how these are to be dealt with in any evaluation, relative to the direct effects.

Indirect effects are likely to be at a lower average level than direct effects, and be more widely spread within the economy and community, and geographically. Also, there is often more scope for indirect effects to be in the opposite direction from direct effects – ie, where direct positive effects accruing to one group or locality may give rise to indirect negative effects accruing to other groups or localities, albeit at a lower average level per person (business) affected.

Setting an appropriate timeframe for analysis

The timeframe for analysis should relate to when the costs and benefits are likely to occur. Part 2 of the RMA provides guidance on timeframes for analysis. In particular, "sustainable management" recognises the need to provide for the well-being of future generations.

The Court in Suburban Estates Ltd v Christchurch CC C217/01 considered that two generations is a minimum to consider and that the term is more flexible (upwards) depending on the nature of the resource being considered, and the threat to it.

Therefore, if the benefits of a proposal will occur a long time in the future, it is important that the basis for evaluating costs and benefits is also over a long time scale.

What is discounting and does it need to be used in evaluating costs and benefits?

In standard cost-benefit analysis, discounting is used to account for differences in when costs and benefits occur. It gives a single figure of the present day value of the overall impact of the regulations. The Treasury recommends a 10 per cent discount rate for use in standard cost-benefit analysis.[50] The main reasons for using discounting include:

1 people place a higher value on a benefit that they obtain today than one they will obtain in the future

2 there is a higher risk or uncertainty that an expected future benefit will not be obtained

3 discounting can account for price inflation. That is, a dollar will buy less in the future than it buys today.

However, there has been difficulty and criticism in applying discount rates to environmental policy issues (and in RMA decision-making) for the following reasons:[51]

- principles of sustainability run counter to discounting future benefits
- the benefits of environmental policy are often felt over a long time period of 20–50 years or more. Applying a discount rate any higher than 5 per cent means future benefits are discounted to zero, calling into question much of the RMA regulation
- there is little guidance on the process or framework for choosing an appropriate discount rate, meaning setting one can be arbitrary and subjective
- the legitimacy of applying discounting to non-market environmental services is questioned, as discounting is based on people making decisions on what to purchase in a market economy
- the precautionary principle means the potential uncertainty of the long-term benefits may still justify the introduction of the new policy.

These reasons all raise questions about if and how discounting should be used when evaluating RMA planning proposals. This guide does not recommend whether discounting should be used, and does not recommend a specific discount rate. This is because the range of policy issues, responses, and risks, and the uncertainties around the use of different rates, means a case-by-case approach is needed.

Discounting is not likely to be used if qualitative evaluation methods are used. Where it is used, it is recommended that a range of discount rates are used to test different possible results. For example, use high positive discount rates, zero discount rate, and a declining discount rate over time.

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[50] See Treasury's cost benefit analysis primer

[51] See for example the Stern Review: The economics of climate change , and the Economics of Ecosystems and Biodiversity

For a more in-depth discussion on discount rates when applied to environmental policy, see the sources in the annotated references.

Predicting the effects over time and testing implementation outcomes

Assessing the effects of a new proposal should not relate only to a fixed point in time, but should include reference to both short- and long-term effects. It is also important to remember that the effects relate to the incremental change from the baseline or current situation. This should align with the chosen timeframe for analysis.

There are ways of playing out the different possible futures, taking into account short- and long-term effects, and also to address uncertainties. Policy options can be tested through methods such as:

- using scenarios to assess the robustness of the proposed policies against different possible future outcomes. This can build in key trends and how these might impact implementation over time
- modelling possible impacts over time
- using case study analysis to determine how a policy might play out in a particular area
- using sensitivity analysis to provide an understanding of the risks and uncertainties surrounding each policy option. This can give a picture of the extent to which changes might affect the effectiveness of the measures
- using intervention logic (see Appendix 5: Methods for evaluating options)
- consent testing (see the Auckland Unitary Plan's s32 evaluation introduction)
- basing the assessment of the impacts on an annual basis.

Many of these methods are covered in more detail in Appendix 5: Methods for evaluating options. The Planning under a Co-operative Mandate research also contains guidance on determining cause and effect in relation to plan effectiveness monitoring.

Despite these methods, uncertainties will often still be present given the information available. In addition, these methods have their own assumptions and limitations, leading to further uncertainty. It is important to document these continuing uncertainties, including documenting the limitations of the information gathered. See Step 5: Decide level of information certainty and/or sufficiency Step 5: Decide level of information certainty and/or sufficiency in Chapter 5 for a discussion about uncertainty.

Considering equity and distributional issues

Equity generally revolves around who bears the negative impacts *'who pays and who benefits?'* where payment may be in dollar terms, or through bearing negative impacts. An outcome where costs (negative effects) are distributed in or close to the same way as benefits (positive effects) is generally seen as fair and equitable, while a materially different distribution is deemed unfair/inequitable.

To look at equity considerations, sufficient information is needed to identify effects at an appropriate level of detail (disaggregation), and decisions are needed about how equity considerations may be applied in RMA decision-making. To identify how both costs and benefits are distributed, effects across the following should be understood:

- between major sectors, including the business, household and farming sectors
- within those sectors, to understand whether benefits or costs are concentrated on specific groups or distributed evenly
- across locations
- across important segments of the population (for example, economically vulnerable groups, older age groups, and so on) or industries within the business sector (for example, those which are critical in the local economy).

Equity and fairness is an important aspect of social well-being. However, the level of detail will depend on what matters are important to specific councils. The plan objectives and policies are the base point of guidance for these matters, but more specific guidelines will usually be required, including:

- the rationale for how and why the distribution of effects matters
- the aspects of distribution which address equity and fairness considerations
- identification of specific groups, sectors, locations to be accorded priority.

The significance these priority groups should be accorded in the decision-making process, including s32 evaluation.

Aspects to consider when deciding whether specialist economic input is needed

Some knowledge of economic processes and methods will be required for some or all s32 evaluations. Whether specialist input is required will depend on the likely scale and significance of a proposal, and what capacity will be available within the timeframe. It would also be based on consideration of:

- the expected complexity of a proposal's effects, and which aspects of the economy it will affect
- whether the proposal will have significant indirect or flow-on effects
- the economic processes through which effects are likely to arise
- what share (percentage) of the city/district is likely to be affected
- how different the proposal is from other proposals previously subject to rigorous s32 evaluation
- the levels of uncertainty around the proposal, its effects, and the available information
- how much base economic information is available within council.

Finding data on economic effects when a specialist economic impact assessment is not possible

Where a targeted economic impact assessment is unlikely or unnecessary, relevant information may be available from:

- the literature, especially studies of similar proposals from other cities or districts. Careful consideration is needed to ensure comparability of this proposal with the other studies

- general economic information that is commonly needed in assessing effects such as information on:
  - population, households, dwellings (Census and updates)
  - residential property (rating and property datasets)
  - business sector activities (commercial and public sector) including scale, location and nature of activity (Statistics New Zealand Business Frame)
  - business property
  - infrastructure and facilities serving the household sector and the business sector
- abundant data is available on each aspect to establish the context for economic activity, much of it at a refined geographic level. Councils need to have a strong and well-organised information capability to draw on this data
- understanding of the processes by which (economic) effects will arise
- models from other disciplines such as traffic models, spatial interactive models (retail, services, community facilities), and ecological/biophysical models (see Appendix 4: Methods for assessing effects of options).

Ensuring economic analysis and evidence is useful

The Court in Carter Holt Harvey versus Waikato Regional Council [2011]NZEnvC380 stated:

> "If economic evidence is to assist the court, the issues to be addressed have to be clearly identified, either by agreement between the parties or the economic experts. The economists should then meet to endeavour to determine the appropriate economic methods or approaches which should be applied when addressing the identified issues. This reflects the Code of Practice."

This makes it important, when commissioning work from an economist, to carefully consider the:

- scope of analysis
- methods that will be used, and their likely acceptability within a hearings or court setting
- experience of the economist in applying economic evaluation to RMA issues
- means of communicating the findings of the economic evaluation, particularly in terms of ease of understanding by a non-specialist, framing, assumptions, and extent to which conclusions can be used.

Key areas of contention within economics regarding evaluating environmental policy

The main areas of contention regarding evaluation of environmental policy revolve around the monetary valuation of non-market values and uncertainty, especially in resource valuation.

Economic approaches generally seek to simplify and quantify matters, aiming for less complex and 'cleaner' analysis, with ability to assess on a common denominator (usually by monetising).

Assuming the science base is sufficiently developed to offer robust quantitative information, the challenge is how to assign an accurate value, especially valuing non-market goods or services. The literature and expertise in non-market valuation applies value estimates to a range of environmental and social, and sometimes cultural, goods and services.[52] Valuations are commonly based on research into people's willingness to pay and willingness to forego (WTF) for gains that are difficult to quantify. For example, willingness to pay for a percentage improvement in water quality. These approaches generally lie within the total economic valuation paradigm.

Despite significant advances in the quality and availability of quantitative information about the environment, key information is still often limited or incomplete, and lacking a sufficient science base to support evaluation of policy. Research using such techniques as willingness to pay also faces the twin challenges in clear articulation of complex matters (even with adequate science base), and respondents' level of understanding of that complexity.

[52] Such as ecosystem services

Appendix 1: Section 32, 32A and 32AA

32 Requirements for preparing and publishing evaluation reports

(1) An evaluation report required under this Act must—

(a) examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of this Act; and

(b) examine whether the provisions in the proposal are the most appropriate way to achieve the objectives by—

(i) identifying other reasonably practicable options for achieving the objectives; and

(ii) assessing the efficiency and effectiveness of the provisions in achieving the objectives; and

(iii) summarising the reasons for deciding on the provisions; and

(c) contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal.

(2) An assessment under subsection (1)(b)(ii) must—

(a) identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—

(i) economic growth that are anticipated to be provided or reduced; and

(ii) employment that are anticipated to be provided or reduced; and

(b) if practicable, quantify the benefits and costs referred to in paragraph (a); and

(c) assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.

(3) If the proposal (an **amending proposal**) will amend a standard, statement, regulation, plan, or change that is already proposed or that already exists (an **existing proposal**), the examination under subsection (1)(b) must relate to—

(a) the provisions and objectives of the amending proposal; and

(b) the objectives of the existing proposal to the extent that those objectives—

(i) are relevant to the objectives of the amending proposal; and

(ii) would remain if the amending proposal were to take effect.

(4) If the proposal will impose a greater prohibition or restriction on an activity to which a national environmental standard applies than the existing prohibitions or restrictions in that standard, the evaluation report must examine whether the

prohibition or restriction is justified in the circumstances of each region or district in which the prohibition or restriction would have effect.

(4A) If the proposal is a proposed policy statement, plan, or change prepared in accordance with any of the processes provided for in Schedule 1, the evaluation report must—

(a) summarise all advice concerning the proposal received from iwi authorities under the relevant provisions of Schedule 1; and

(b) summarise the response to the advice, including any provisions of the proposal that are intended to give effect to the advice.

(5) The person who must have particular regard to the evaluation report must make the report available for public inspection—

(a) as soon as practicable after the proposal is made (in the case of a standard or regulation); or

(b) at the same time as the proposal is publicly notified.

(6) In this section,—

objectives means,—

(a) for a proposal that contains or states objectives, those objectives:

(b) for all other proposals, the purpose of the proposal

proposal means a proposed standard, statement, regulation, plan, or change for which an evaluation report must be prepared under this Act

provisions means,—

(a) for a proposed plan or change, the policies, rules, or other methods that implement, or give effect to, the objectives of the proposed plan or change:

(b) for all other proposals, the policies or provisions of the proposal that implement, or give effect to, the objectives of the proposal.

32A Failure to carry out evaluation

(1) A challenge to an objective, policy, rule, or other method on the ground that an evaluation report required under this Act has not been prepared or regarded, a further evaluation required under this Act has not been undertaken or regarded, or section 32 or 32AA has not been complied with may be made only in a submission under section 49, 149E, 149F, or 149O or under Schedule 1.

(2) Subsection (1) does not prevent a person who is hearing a submission or an appeal on a proposal from having regard to the matters stated in section 32.

(3) In this section, proposal means a proposed statement, plan, or change for which—

(a) an evaluation report must be prepared under this Act; or

(b) a further evaluation must be undertaken under this Act.

32AA Requirements for undertaking and publishing further evaluations

(1) A further evaluation required under this Act—

(a) is required only for any changes that have been made to, or are proposed for, the proposal since the evaluation report for the proposal was completed (the **changes**); and

(b) must be undertaken in accordance with s32(1) to (4); and

(c) must, despite paragraph (b) and s32(1)(c), be undertaken at a level of detail that corresponds to the scale and significance of the changes; and

(d) must—

(i) be published in an evaluation report that is made available for public inspection at the same time as the approved proposal (in the case of a national policy statement or a New Zealand coastal policy statement), or the decision on the proposal, is publicly notified; or

(ii) be referred to in the decision-making record in sufficient detail to demonstrate that the further evaluation was undertaken in accordance with this section.

(2) To avoid doubt, an evaluation report does not have to be prepared if a further evaluation is undertaken in accordance with subsection (1)(d)(ii).

(3) In this section, **proposal** means a proposed statement, plan, or change for which a further evaluation must be undertaken under this Act.

Appendix 2: Auckland Unitary Plan audit criteria

See the audit of the s32 evaluation for this criteria and the audit.

Statutory requirement	Criteria	
General quality criteria	1.1.	The evaluation report is communicated in plain English, with minimal use of jargon and any technical terms explained.
	1.2.	The evaluation report identifies what information was used in undertaking the evaluation.
	1.3	The evaluation report is structured in a way that is easy to understand and helpful to the reader.
	1.4.	The material contained in the evaluation report is concisely presented with minimal duplication, appropriate use of tables and diagrams, and references to more detailed evidence or source material, to help manage the length.
	1.5.	The evaluation report clearly identifies what consultation was undertaken, with whom.
	1.6.	The evaluation report identifies how information provided through the consultation was presented to decision makers and how it informed the evaluation process.
Scale and significance (s32)(1)(c)	2.1	The evaluation report identifies the process and the underlying assumptions (eg, demographic, economic) used for determining the scale and significance of effect(s) anticipated from the implementation of a provision.
	2.2	The process used for determining the scale and significance of effect(s) has been applied consistently in the evaluation report or the reasons for the inconsistency are clearly explained.
	2.3	The evaluation report identifies the processes and underlying assumptions used to confirm those provisions that are deemed to be of minor significance / scale such that they are not further addressed in the evaluation report.
Appropriateness of objectives to achieve the purpose of the Act (s32)(1)(a)	3.1	The evaluation report links the objective with a resource management issue that must be resolved to promote the purpose of the RMA.
	3.2	The evaluation report links the objective with its intended outcome and confirms that the outcomes are achievable and within the Council's powers under s30 & 31 of the RMA.
	3.3	The evaluation report articulates the overall broad judgment under Part 2 as to appropriateness of the adopted objectives, including any feedback from the consideration of methods.
Appropriateness of provisions to achieve the objectives (options) (s32)(1)(b)	4.1	The range of options considered for a provision is proportionate to the scale and significance of the proposal (or provision within that proposal).
	4.2	Where a proposal (or provision within that proposal) has been deemed to be of a scale and/or significance such that options need to be considered:

Statutory requirement	Criteria	
	4.2.1	the range of options considered extends beyond a simplistic binary of *status quo* versus change
	4.2.2	the range of options includes existing provisions or an appropriate range of provisions to reflect the *status quo*
	4.2.3	the evaluation report details what consultation was undertaken in relation to the development and/or evaluation of options (including alternatives identified though consultation processes).
	4.3	Where a choice has been made to roll over or to change an existing provision, the rationale for that choice is explained
Appropriateness of provisions to achieve the objectives (efficiency and effectiveness) (s32)(1)(b)(i)(ii)(iii) And **(s32)(2)(a)(i)(ii)** And **(s32)(2)(b)**	5.1	The assessment of the appropriateness of provisions to achieve the objectives has responded to the full scope of an objective.
	5.2	The assessment of the efficiency and effectiveness of provisions is proportionate to the scale and significance of the proposal (or provision) being evaluated.
	5.3	Where the evaluation report has identified that a proposal (or provision within that proposal) is significant there is a comprehensive and transparent disclosure of the costs and benefits arising from both the provision and other reasonably practicable options.
	5.4	Where the evaluation report provides an assessment of the benefits and costs the 'recipients' of such benefits and costs are also identified.
	5.5	The evaluation report transparently identifies the information provided (including technical and consultation inputs) to decision-makers on the consideration of environment, economic, social and cultural effects that were anticipated, including effects on employment and economic growth or forfeited effects.
	5.6	The evaluation report identifies any limitations in information or information gaps that were identified to decision-makers and records the implications of this on the decision-making process.
	5.7	The evaluation report identifies the methodology used for determining whether it is practicable to quantify and/or monetise the costs and benefits.
	5.8	The evaluation report identifies the valuation methodologies used where benefits and costs have been monetized.
	5.9	The methodologies have been applied transparently and consistently across the evaluation report, with the reasons for any inconsistencies identified.
	5.10	The evaluation report is transparent on how monetised benefits and costs have been presented to decision makers (eg,. any "calibration" or weighting against quantitative and qualitative assessments).
	5.11	Where benefits and costs have not been quantified, they are qualitatively evaluated and the basis for those qualitative assessments is described.
Restrictions greater than a NES (s32)(3)	6.1	Where a greater restriction is imposed, the evaluation report includes sufficient documentation of the analysis and rationale to justify the decision made.

Statutory requirement	Criteria	
Sufficiency of information and risk (s32)(2)(c)	7.1	The evaluation report has a consistent approach for identifying whether information was considered sufficient or certain for proposals (or provisions) and clearly identifies where decision-makers made decisions on proposals or provisions with uncertain or insufficient information.
	7.2	Where the evaluation report identifies that there was uncertain or insufficient information for decision-makers, there is transparent documentation of the risks that were considered in acting or not acting on decision.
Summary of reasons (32)(1)(b)(iii)	8.1	The summary of reasons identifies the rationale to support the decision made (eg, why is it the most appropriate way of achieving the objective).
	8.2	The conclusions clearly identify the analysis process and information provided to decision makers (including technical reporting and consultation inputs).

Appendix 3: Example evaluation report table of contents

1 Introduction and planning context

- 1.1 Purpose of report
- 1.2 What is a S32 report?
- 1.3 Outline of plan/plan change/variation
- 1.4 Legal/statutory context
- 1.5 Planning context – national and regional planning context

2 The Development of plan/plan change/variation (process)

- 2.1 Community/stakeholder engagement
- 2.2 Consultation with iwi authorities

3 Problem definition

4 Current state, issues and desired outcomes

5 Approach to evaluation

- 5.1 Scale and significance
- 5.2 Quantification
- 5.3 Choice of evaluation method(s)

6 Evaluation of objectives

7 Identify and assess reasonably practicable options

8 Evaluation of preferred option(s) for provisions (policies and methods)

- 8.1. Assess effectiveness, efficiency, benefits, costs, risk
- 8.2 Decide most appropriate option

9 Conclusions

Appendix 4: Methods for assessing effects of options

Qualitative methods / techniques

Something for which measurability has not been established is called a quality or a characteristic of the object (eg, opinions about an object).

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Consultation/focus groups/workshops/hui Consultation of stakeholders and communities affected by a proposal helps to draw in different forms of knowledge, highlight debates over the nature and scale of future effects, including who is affected and how significant these effects are (perceived or actual). Consultative methods can take many forms, including roadshow-type meetings, open invite or specific invite meetings, and requests for written feedback.	All RMA plan-making processes should involve consultation as part of preparing new provisions. For more complex issues, consultation may need to be in multiple stages (ie, issues and options; assessment of options; preferred direction). Recommended when community buy-in is important; cultural effects are anticipated; if large numbers of stakeholder groups are affected; and there is wide geographic spread of effects. Particularly useful if there is not good existing information about what is 'valued' (ie, the significance of effects).	Helps highlight debates over the value of resources and the nature and scale of existing and future effects. Sometimes, new effects are identified, while in other cases, the consultation reveals different assessments of what is more or less important. Risks are often identified.	For more than an "off the cuff" assessment of future effects, people being consulted need good information and understanding of the process that they are involved in. May not reach consensus on effects (and their scale and significance).	There is risk of gaps in the combined knowledge of participants, where important effects may be missed or underestimated. Group situations which are predominantly verbal may result in views/knowledge of more vocal participants getting undue weight. May result in a large set of articulated 'effects' if views are not categorised. For practical reasons, consultation might be broken down by stakeholder group/location or by area of effect (ie,. social effects dealt with separately from environmental effects).	Can be time and resource-intensive if more than a one-off exercise. Care is required to accurately record verbal discussions. Councils are usually well resourced to run or facilitate consultation type methods.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Deliberative valuation/ collaborative processes Unlike standard consultation, collaboration gives more decision-making power to the participants, who are made up of a range of stakeholders on the issue. In such approaches, in-depth information is presented to a selected group and lengthy deliberations and trade-offs occur between the different interests and participants until a consensus is reached (in this case, on the relevant effects and their scale and significance).	Best used when stakeholder buy-in is necessary, good for more sensitive issues (compared with wider consultation methods), well suited to issues which require effects to be considered holistically rather than in isolation. Strongly recommended if cultural effects are anticipated. Less appropriate for issues that are district/region wide, ie, suited to issues where effects are localised.	Opportunity to build relationships and better lines of communication with stakeholders. In agreeing on effects anticipated to arise from proposed provisions, collaboration process may also reveal options for avoiding, remedying or mitigating the effects identified. Develops an understanding of distributional impacts of alternatives. Provides opportunities for participants to change preferences after exploring the problem. Group cohesion and cooperation improve a group outcome compared with the average or maximum by individuals.	This relies on identification of participants able to adequately represent different interests. Requires stakeholders to have a sound knowledge of the issue and the nature of effects. The process may not include input or participation of experts.	Group situations which are predominantly verbal may result in the views/knowledge of more vocal participants getting undue weight.	Can be time and resource-intensive if more than a one-off exercise. Care required to accurately record verbal discussions. May benefit from an independent collaboration expert, particularly if the council is an interested party.
Rating of environmental values Assessment of the value of existing resources, such as landscapes and terrestrial ecology based on their intrinsic and use value, eg, outstanding natural landscapes, significant	A common starting point in plan preparation. Proposals to change existing plan provisions may not need to undertake new rating exercises	Provides a comprehensive view of what is important or valued, based on judgement of those involved in the rating exercise. Sets a context for assessing future changes to environments. Links to section 6 of the RMA and establishing which areas	Can result in detailed sub-categorisation of resources (eg, national, regional, local), which may imply detailed management methods should follow. Some resources like streams and rivers not easily subdivided as they represent	That the value of natural and physical resources can be objectively rated by reference to a range of methodologies. It therefore involves a degree of judgement as to future effects and consequences.	Site surveys. Needs expert input/assessment. Use of a consistent methodology across a council or district area is needed, preferably one that can be replicated in

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
natural areas. This helps to identify the current 'baseline' or *status quo*.		and resources are identified as being of national importance.	an integrated system within which landscape and ecological values may vary considerably.		other areas and is easily understood and credible.
Impact assessments Assessment of future effects of a proposal on a resource or a sector of the community. These typically involve a combination of both qualitative and quantitative methods, but in some areas the qualitative aspects and use of expert opinion are especially important, such as social impact assessment, cultural impact assessments, heritage impact assessments, urban design assessment, landscape assessment, visual impact assessment, archaeological assessment etc.	Best used when there are specific effects or resource issues that need to be examined in-depth (and are likely to lead to hearings later in the plan change process). Also when a defined project is proposed, for example, a re-zoning.	Systematic identification of future effects under current conditions, as well as in relation to changes in policy/methods. Results in an assessment relevant to particular resources and is likely to determine nature and scale of changes (positive and negative).	Identifies nature and scale of effects in terms of the individual resource, but not necessarily across resources or areas.	Relies upon a range of inputs, including assessments of value, consultation and case studies.	Usually needs expert involvement. Often involves stakeholder consultation. Draws upon a variety of methods, guides and data bases.
Qualitative surveys/questionnaires Surveys of communities and/or specific sectors to obtain primary data on knowledge, opinions, values, priorities and so on.	Applicable to many resource management issues, where community or sector attitudes and values are important. Can be used in conjunction with more focussed consultation or collaborative processes.	Assuming well-designed survey instruments, and adequate coverage, these are a good source of primary data, which offers generally accurate material from the persons or businesses covered.	Reliability of results depends on representativeness of the sample, and the influence of non-response rates.	Assumes survey instruments are adequate to capture the relevant information, and that respondents are well enough informed to provide valid feedback.	May require significant resource and expert input in survey design and administration if the issue is complex and the affected community is wide-spread.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Expert testimony/opinion Information which draws on the existing knowledge and opinions of those with expertise in relevant matters, without necessarily requiring new research. This can draw on individuals or groups of experts, such as through a Delphi process[53] (which may also be considered a collaborative method).	Use to identify key issues and processes, and nature, scale and significance of effects. Suitable if anticipated effects are outside expertise of in-house staff. Useful as a preliminary step to help identify issues/effects and to inform where further resources/effort should be focussed (if relevant).	Able to make use of knowledge and expertise in a relatively quick and cost-effective manner. This is especially useful in the early stages of an assessment, to scope and understand the key issues, and as a guide to next steps including more formalised analysis. Able to maintain an 'arm's length' position based on (initial) expert advice, before committing.	This depends on the quality of the experts who are drawn on for advice. It depends on the scope of work given to the expert being adequate to address the relevant matters. May not be clear what experts are needed initially – may be an iterative process.	Need to provide experts with sufficient information on plan change and issues so they are prepared and can offer constructive advice. May or may not require in-person meetings with experts.	If bringing experts together to discuss effects as a group, sufficient planning is needed to coordinate a meeting (or phone/video conference) and spend time finding areas where experts agree. Costs for travel/expert time required.
Case studies/samples/ literature review Estimating future outcomes and effects for the resource or area being considered, by examining comparable areas or resources where either similar or demonstrably different management options or resource use patterns have been implemented, and reported on.	Useful as a base point for estimating likely effects based on outcomes that have occurred in the past and/or elsewhere. Most appropriate when there is experience within a council area (local case studies) and/or when the matter is rated low in scale and significance.	Can be used to identify possible future effects of different management options, if comparable situations can be identified. May highlight effects in the absence of appropriate management eg, negative effects experienced) or the positive effects of appropriate management.	Provides an indication of future effects, though careful interpretation is required, and the assessment may not be sufficient for important issues. Environmental outcomes for a particular area are the result of a range of inputs, making it difficult to get directly comparable examples.	The main risks relate to the degree to which case studies are directly comparable to the matter at hand.	Finding comparable examples can be difficult. Often needs detailed investigation of the case study areas/ environments. Disagreement on choice of case study.

[53] The Delphi technique is a quantitative option aimed at generating consensus. It solicits opinions from groups in an iterative process of answering questions. After each round the responses are summarised and redistributed for discussion in the next round. Through a process of convergence involving the identification of common trends and inspection of outliers, a consensus is reached.

Quantitative or monetary methods / techniques

The characteristic of an object is measured (eg, relative size, length or cost), and a measurable characteristic is called a quantity or magnitude.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, Risks	Inputs, resources, skills required
Simple quantitative data analysis Relatively simple quantification of primary and secondary data, through basic indicators including percentage shares, changes between time periods, differences between locations, and measures of concentration or dispersal (location quotient). The data is characterised by interval scales (numbers indicate specific magnitudes) and ratio scales (specific magnitudes and an absolute reference point) such as distance, time and area.	Used to establish basic information, to establish baselines and for situation assessment where core description is required. Commonly as a foundation for more complex analysis.	Core analysis using basic methods widely used for organisation, description and comparison purposes. The methods are simple and easily understood. The results are generally easy to interpret. Greater precision of information than data based on nominal or ordinal scales, and calculation allows direct comparison on a common base.	Analysis using basic methods is seldom adequate to provide more than part of the information required.	Risk of seeking to examine complex issues with simple analytical tools, which are unable to provide adequate information.	Some capability in Excel or comparable tools. Applied to base information, especially Statistics New Zealand Census and Business Frame, generally available online at an appropriate geographic resolution. Council property datasets generally important.
Spatial analysis Methods that examine the geographical distribution and patterns of resources and activity. These include methods to portray and examine visual data (usually mapping) to identify features with similar (or contrasting) distribution patterns. Also included are tools to analyse and/or simulate spatial interactions, such as journey to work and travel to shop patterns.	Use when the geographical distribution of resources and activity, and spatial interactions are relevant to the proposal or issue under consideration.	Allows an 'on the ground' approach to analysis and interpretation, including understanding of inter-relationships and feedbacks. Key issues including effects and impacts, efficiency, sustainability are influenced by the (relative) location of resources and activity.	Spatial association does not necessarily indicate causal connection.	Care is needed when interpreting patterns and inter-relationships, especially where the geographic breakdown is coarse eg, at census unit level for a small study area.	Can require significant resource and time inputs, although large amounts of basic information are available at a refined geographic level.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, Risks	Inputs, resources, skills required
Quantitative surveys/ questionnaires Surveys using instruments which elicit quantitative information from respondent, directly through reporting on factual information (such as household size) and interactively using intelligent survey tools.	Relevant for resource management issues, where community or sector attitudes and values are important, and the current attitudes are not well understood; and where the scale and significance are sufficient to require new or updated information.	A strong source of primary data, which offers generally accurate material from the persons or businesses covered.	Reliability of results depends on sample representativeness, and the influence of non-response rates.	Some risk of community over-exposure if surveys are undertaken frequently, and possible limits to survey depth when specific matters are covered within a more general (omnibus-type) survey.	Surveys usually require substantial resource and expert input for design and administration.
Projections/forecasts/ extrapolations A range of methods to identify the future base environment and expected future effects based on current trends, and existing relationships among different factors. Common methods include trend extrapolation (past patterns continuing into the future), and use of models which take into account key influences and project future outcomes based on those known relationships - eg, population forecasts based on demographic drivers (age-sex structures, birth, death and migration rates) and information on capacity for residential growth.	Most situations in RMA, since assessment is predominantly forward-looking, and it is important to understand (at least) the business as usual future as a baseline for assessment of proposals.	Helps to identify the future under the 'without' change option – that is, under current policy settings. Commonly combined with other tools, especially scenario analysis, and information sets to identify different future outcomes.	Most projections are based on a combination of historical actual patterns, and assumptions about the key drivers of those patterns into the future. Hence, they must rely on the robustness of core assumptions. May not take account of changes in management responses.	Projections are usually more reliable at regional or district level, as short-term variations are more evident at the local level. May be based on scenarios. Sensitivity analysis may be required. May need to use in conjunction with discount rates to show present value.	Can be simple or complex, depending on circumstances. Need data inputs in terms of trend/time series, to track historic patterns as basis for trend or modelling. A range of national and regional indicators is available to set context for district or localised projections.

Non-market valuation methods

Non-market valuation techniques are essentially concerned with measuring the extent to which changes brought about by proposed provisions either subtract from, or add to, values experienced by individuals and these values are not traded in a market place.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Revealed preference methods – These methods estimate the value of a non-market good or service based on observed behaviour toward some closely connected marketed good or service. For example, using travel costs to infer the value of recreation or the experience of cultural/heritage sites, based on the cost of travel to those sites. Hedonic pricing infers the value of individual attributes of a market commodity. e.g., the value people implicitly pay for housing with reduced earthquake risk or expansive views.	Useful to evaluate non-market losses (eg, loss of recreation value in a river) or justify the replacement of public goods and services. Can be used when suitable market data (closely connected to the non-market good or service) is available.	Useful when there are close comparators of similar patterns or processes which may reliably be drawn on.	Sensitive to model specification, including choice of functional forms. Limited/narrow application. Can only be applied when relevant market data is available and consumer/producer behaviour can be observed.	Assumes values can be reasonably approximated by some relevant market behaviour.	May be undertaken by a range of persons with appropriate background information.
Stated preference methods – These methods utilise surveys or experiments to elicit what would hypothetically be paid for values which are not traded on markets. They are simulated approaches and are used in the absence of market data to portray consumer intentions. contingent valuation uses surveys to elicit the monetary	Best used when there is no suitable or proxy market data to portray consumer intentions.	Capable of capturing current and future use values as well as non-use values (bequest and existence values). Wide applicability. Choice modelling has gained popularity over contingent valuation in recent years. Choice modelling in particularly can provide a rich data set of	Studies can be very difficult to implement and are complex.	Must be carefully designed to avoid biases. Respondents can misrepresent real preferences in an attempt to anticipate the outcome of the study/process.	Requires specialist expertise in state preference techniques. Primary surveys must be undertaken with comprehensive design and pre-testing.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
value people are willing to pay to avoid a decrement of some type of non-market good or service, or the value they are willing to accept in exchange for its deterioration. In choice modelling, willingness to pay is elicited from experiments in which respondents are asked to rank preferences for different attributes of non-market goods or services.		information directly applicable to policy objectives.			
Benefits transfer methods – Takes values from existing study site(s) and then applies these to the policy site using either a direct or function transfer method. Benefits transfer is used to inform policy and the decision-making process at various stages, including whether the extra expense of a primary survey is warranted.	Useful if there are budget and time constraints that would make stated preference surveys (above) unfeasible. Best used when study site characteristics are very similar to the policy site characteristics.	Can draw upon value estimates from one or multiple other studies.	Sometimes viewed as a controversial method. Large transfer errors are a common problem (differences in experimental design, data collection, and econometric models make comparison difficult). May be limited NZ based studies to draw upon. Errors in the primary study are compounded.	Adjustments of transferred values may be needed (including inflation or exchange rates). Function transfer methods generally perform better than direct transfer methods as they allow for site specific adjustments to be made. Primary studies need to be carefully screened for critical factors (site characteristics, population characteristics, how the research was framed).	A sufficiently similar study or group of studies must have already been undertaken that can then be drawn on.

Modelling

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Simulation models This method refers to a broad spectrum of models used by specific disciplines to examine and quantify effects. In general, simulation models incorporate a calibrated base-line against which the anticipated effect of changes in one or more parameters (operating within a set of rules/assumptions) can be shown. Simulation models are often spatial in nature. Transport modelling is an obvious example, where changes in land use generate traffic, and from this demands on the transport network. Other examples include models for retail/shopping patterns, hydrological changes, demographic changes, noise effects and more.	Recommended for those effects which are anticipated to be large in scale and/or significant as a result of the proposed provisions. Particularly when robust, independent evidence is needed to explain effects to a wide range of stakeholders/affected parties.	Used to determine future effects, based on anticipated changes from a base line. Can provide a strong evidence base as to future effects. Location/study area specific. Once set up, can be used for other applications. Generally not limited in the number of scenarios that can be tested.	Often don't deal with changes in casual relationships brought about by changes in structures and processes. Tend to look at effects in isolation. Other system influences not considered.	Outputs are dependent upon inputs. Sensitivity testing is prudent to account for modelling error. Scenarios are usually required to estimate how provisions translate into tangible effects. For example, to assess the effects of a proposed zone enabling retail activity, scenarios will be needed on the potential mix and timing of retail floor space developed in that zone. Often dependent on a number of assumptions. These must be clearly communicated.	Requires an expert practitioner. Have to be built for or calibrated to local conditions and tested against historical data to demonstrate that they can robustly simulate potential outcomes. Should be based on latest and best data available (and kept up to date). May incorporate other methods (site investigations, surveys, quantitative analysis, and consultation).
Optimisation models These models are designed to find optimal solutions to achieve a defined outcome or objective. They require the ability to simulate the underlying economic processes and relationships, but are	Ideally suited when objectives of provisions are to 'minimise' or 'maximise' a particular outcome, eg, to maximise GDP.	Suitable for both determining between options (by finding the most optimal) and to measure the outcomes/effects. Suitable when there is one objective. (Simultaneously optimising against multiple	Not good at dealing with cause and effect. Not good at dealing with soft variables or poor data. Requires high quality data. High computational requirements to set-up.	Same as for simulation models.	Same as for simulation models. These usually require specialist software packages.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
distinguished from simulation models because they identify the circumstances in which an 'optimal' outcome(s) will ensue. eg, to maximise agricultural output within limits of water availability and competing needs of residential water supply.		objectives is difficult but not impossible.)			

Cross disciplinary/systems-based models

This method refers to models that are also simulation models, but are designed specifically for dealing with a wide scope of processes and effects arising from proposed provisions, and modelling them in a more holistic framework that accounts for the way in which effects interact with and on each other.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Systems dynamics is an inter-disciplinary modelling approach concerned with understanding the dynamic behaviour of systems. It relies on a set of modelling conventions (stocks, flows, feedback loops) to simulate the behaviour of a subject system through time.	Best used when dealing with effects in a complex system, ie, when economic, social and environmental effects are highly interconnected. Ideal for dealing with lags between cause and effect (particularly environmental effects). Not suitable for small budget evaluations.	Can be utilised for a vast range of applications/issues. Able to simulate complex, non-linear, non-equilibrium behaviour of real world systems. Simple to calculate compared with many modelling methods. Can cope with qualitative or 'fuzzy' information on causal relationships.	Methods of validation perhaps not as well formalised as other modelling approaches. May be difficult to understand underlying causes of behaviour due to complexity. Difficult to validate.	Same as for simulation models. Generally promoted as a means for understanding system behaviours rather than 'predictive' outcomes.	Same as for simulation models. Requires specialist software packages.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
		Demonstrates the transition pathway of effects over time (ie, how effects change).			
Agent-based modelling simulates the behaviour of multiple agents acting together within a system. It is concerned with identifying patterns and trends that emerge as a result of the complex interactions of the agents as a whole. Examples of when agent-based modelling is well suited includes (micro simulation) traffic modelling or modelling of shopping behaviour, modelling of facility/resource use behaviour.	Best used when there are lots of agents (ie, modelling the behaviour of all individuals). Useful if there are a large number of stakeholders. Not suitable for small budget evaluations.	Able to simulate complex, non-linear, non-equilibrium behaviour of real world systems. Ability to study emergence of behaviour patterns.	Relatively few experts of this technique. Can show quite erratic results, ie, sensitive to initial conditions. Difficult to validate.	Same as for simulation models. May be difficult to understand underlying causes of behaviour due to complexity.	Same as for simulation models. Requires specialist software packages.
Integrated assessment models take models from a variety of disciplines (eg, scientific, engineering and economic) and combine these into a coherent whole by creating feedback structures between the models. These models tend to be spatial in nature, applying GIS to facilitate data entry and recording.	Suitable for complex/big issues. Often applied in regional or large city contexts. Ideal for strategic policy evaluation, particularly considering transport, economic and land-use issues together. Not suitable for small budget evaluations.	Broadens the boundary of investigation. Collaborative approach. Allows understanding of multiple effects of proposed policy provisions simultaneously. Once set up, speeds up strategic policy development.	Subject to limitations of the underlying models. Huge overheads to set up. Difficult to validate.	Same as for simulation models.	Same as for simulation models. Requires specialist software packages. Requires a range of people with different knowledge/ backgrounds to come/work together (ie, a steering group).

Economic impact assessment

Economic impact assessment (EIA) is an approach used to understand (or often justify) the economic impact that projects, programmes or policies have on an economy. There are two core methods, described below.

Economic impacts are effects on the level of economic activity in a given area and consider not just direct effects but flow-on effects in the economy. Economic impacts are quantified measurements most commonly expressed in terms of a contribution to GDP/value added or employment – hence EIA is directly relevant to addressing s32(2)(a). It is important to note that economic impacts derived from EIA models are not entirely 'benefits' or 'costs'. For example, employment generation is generally seen as a 'positive outcome' but it still implies inputs of time (which are considered costs).

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Input-output (IO) modelling	Suitable for small scale/simple and large scale/complex studies. Generally regarded as the most suitable method for short-run analysis, where economic systems are unlikely to change greatly from the initial snapshot of data used to generate the base IO tables. Generally this approach is best if there is a limited budget and/or a limited time frame. (It is cheaper and quicker than general equilibrium modelling.)	More practitioners of this approach available in the market. Can be applied at a small spatial scale such as a district or a region as well as national level as long as you have an IO table to match the study area. Can account for inter-regional relationships (trade) if modelled with a multi-regional IO table. Well suited to showing the transition pathway of impacts over individual years.	An input-output model has several key assumptions: • factors of production (labour, land, capital) are unconstrained • prices are fixed • production technology is constant • household consumption preferences are persistent. These may mean that the modelled economic effects of a proposal may turn out differently.	Scenarios are usually required to estimate how provisions translate into tangible effects on economic sectors. Projections may also be needed as part of those scenarios. Spending/funding data is often commercially sensitive and may require confidentiality agreements/assurances.	Most recent underlying economic table is 2006/07 year. Expenditure/funding inputs to the model must be deflated to 2007 dollars and results are in 2007 terms. Requires an expert practitioner. Requires detailed data on funding and spending by relevant stakeholders (when, what, where). Surveys may be required to capture spending by large groups in the community.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Computable general equilibrium (CGE) modelling	Most suitable for large scale/complex studies. Most suitable method for medium- to long-run analysis, although short-run scenarios are also possible. Generally practical only when the budget and/or timeframes of the study are not constrained.	Can account for inter-regional relationships (dynamics) if modelled with a multi-regional social accounting matrix (SAM). Explicitly accounts for the efficiency maximising behaviour of firms, and the utility maximising behaviour of households, while ensuring that household and government budgetary constraints are met. Simulates the decision-making processes of economic agents – an advantage over input-output modelling. Dynamic with regards to prices (they can adjust).	Fewer practitioners of this approach available in the market. Will not pinpoint the future year in which the impact results apply, simply the point when equilibrium returns, ie, it does not define a fixed period of time over which impacts occur. Cannot explain transitional (year-on-year) impacts.	As for input-output modelling. Unless there is sufficient information and budget available to model factor substitution and price change dynamics in a meaningful way, the outputs of a CGE model may be not be better than an input-output modelling approach. Traditionally CGE has been carried out at the national level. Recent advances in the development of SAMs will now allow CGE to be run at a regional level.	As for input-output modelling. Requires specialist software packages.

This paper provides a discussion on the use of models in New Zealand at the regional level.

See this economic impact assessment of aquaculture in the Northland region for an example of an economic impact assessment.

Appendix 5: Methods for evaluating options

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Collaborative decision-making A collaborative-based approach where the outcome is based on the consensus amongst the parties involved as to the most appropriate use and management of resources within the study area. Currently being used in NZ for freshwater management. This method can address both efficiency and effectiveness of provisions, although this is done in a predominantly qualitative process.	Where the proposal is expected to be contested by a number of parties, there are a range of value-based interests, and where there is a willingness to negotiate an outcome rather than have the outcome determined by an independent body (such as the Environment Court). Co-management processes may also follow a collaborative decision-making approach.	Its main strength comes from all parties being involved in each stage of the assessment and evaluation process. By having an input into identifying issues, option identification, fact finding and scoring, and weighting of options, there is a large element of knowledge exchange between the parties. Through the process there can be 'buy in' to the solution. Collaborative approaches require consideration of pros and cons / benefits and costs of alternatives. A collaborative process may draw upon the range of evaluative techniques set out below to help participants come to a conclusion.	The dynamics of the process will vary from proposal to proposal. The process is typically based on discussion and interaction, where dynamics within the decision-making group may influence the outcome. Outcomes could be challenged as not being the result of an 'objective' process, with the result being an outcome that satisfies most concerns, but not necessarily be the most efficient. The process could be challenged for not involving some parties.	That as everyone/most agree with the proposed management framework, then it is assumed that adverse effects are appropriately managed and positive effects adequately enabled.	Needs a well-resourced process with an independent chair and a 'secretariat' who can provide information to the parties as needed. Need good/sound analysis of natural and physical resources present as a starting point. The collaborative process is likely to identify a number of management options which will need specific investigation. A collaborative process is likely to take time with a series of meetings, discussions and workshops, interspersed with periods of technical investigations and analysis.
	An example is the Canterbury Water Management Strategy. See *Collaborative Management: Community Engagement Process as the Decision Making Process* for a discussion of collaborative decision-making processes.				
Spatial-based analysis A consultative-based	This consultative-based approach is best applied	Does not need to involve a detailed analysis of pros and	Will not necessarily result in consensus in all cases.	That as everyone agrees with the proposed	Needs commitment from key stakeholders to participate.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
approach where the main RMA issues relate to the spatial layout of activities, for example, a plan change for a new growth area or area of rural-residential development. RMA provisions for an area are agreed through an iterative design process that typically results in an agreed layout (spatial) plan. This method can address both efficiency and effectiveness of provisions although this is done in a predominantly qualitative process.	where the main choices are between different spatial management of resources, such as in the structure planning process, as it has a specific focus on an area's development path.	cons/benefits and costs of all alternatives, although the value of resources and alternative management approaches will be considered through the design process. Useful in rural and urban situations where the main focus is on physical resources (eg, where roads are to be located, density of development) and where important natural resources are not present, or where present, their management has already been determined by a prior process (ie, already set down in a plan). Best in a defined area where there are a limited number of stakeholders/interested parties and they all have 'skin in the game' and therefore interest in achieving a consensus-based outcome. Efficiency and effectiveness of proposed provisions are analysed at the same time by 'testing' different development proposals.	Not appropriate where there are fundamental differences over how resources are to be managed. Outcome could be challenged as not being the result of an objective process. In cases where agreement is not reached and decisions need to be passed to a third party, the reasons for various outcomes and management approaches may not be very clear.	management framework, then it is assumed that adverse effects are appropriately managed and positive effects adequately enabled. Parties must be willing to 'give and take'. That the needs of resource users out of the area (ie, downstream users, adjacent suburbs) are either explicitly represented in the process, or are taken into account in the evaluation.	Good/sound spatial analysis of natural and physical resources present. Clear articulation and agreement to 'bottom lines and non negotiables'. Lead player (ie, council, major landowner) with appropriate facilitation, consensus building skills. 'Hands-on input' required from specialists for the range of effects to be addressed. Design skills to demonstrate how multiple outcomes can be accommodated/integrated through the layout of an area.
	A recent example is the Pauatahanui–Judgeford Structure Plan in Porirua City.				

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Logic mapping (sometimes called intervention logic) A method of determining the appropriateness of provisions where the main issue is how to achieve an outcome. The actions needed to generate outputs that in turn achieve outcomes are mapped, but in reverse order, starting with outcomes and working backwards to actions. This identifies a clearly preferred implementation path. It is most appropriate for process-based RMA provisions, for example, provisions that require a number of actions to be coordinated; and where the emphasis is on modifying how resources are used by people and communities, for example, management of streams. This approach has a focus on effectiveness, and is less able to address efficiency, though it can do so to a degree.	Most useful for process-based RMA provisions where there are a range of RMA and non-RMA actions to coordinate.	Use of diagrams and flow charts set out expected cause-effect relationships between actions and outcomes. The diagrams make assessment of efficiency and effectiveness easier for a range of participants. May highlight interconnections between different outcomes and help to highlight the range of actions (RMA and non-RMA) need to achieve an outcome. Can help generate new management options.	Best used for issues where the objective is clear and agreed. Does not seek to place importance on one criteria or option over another, although as the process of mapping proceeds, key linkages become established. Doesn't generate a 'winner' between options.	That agreement may be reached on how to manage an RMA issue if all parties feel that they have an equal share of the task ahead.	Often needs an independent facilitator to help keep discussion on track and focused. Likely to involve a series of meetings and discussions based around white boards, large maps, sticky notes and the like. Needs commitment from key stakeholders to participate.
	An example of logic mapping (called structured decision-making or SDM) is its use in the Hawkes Bay TANK process.				

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Ranking matrix Through this process, options are ranked against a set of criteria as to which option performs best, next best, and so on. An element of weighting can be included in the assessment to accord greater or lesser importance, for example, by separating RMA section 6 matters (national importance) versus section 7 matters. This method can be used to help determine efficiency (though only at a very general level) and effectiveness.	This approach can be applied to any RMA matter, though the largely qualitative approach means it is best suited to proposals of low to moderate scale and significance, and/or involving limited change from the *status quo*, and/or there is knowledge and experience from other comparable proposals. This method can be useful where there a wide range of options and more complex analysis methods may become cumbersome – including to shortlist the leading options.	Provides an explicit checklist against which options are considered. Has the analysis considered all effects or consequences? Does not require detailed understanding of the nature and scale of all effects. Helps identify if one option clearly dominates, ie, ranks as best overall against all criteria. Where dominance does not occur, is useful as an initial screening of a long list of options to identify options for more detailed analysis. Allows for simple Delphi-type techniques when initial ranking exercises can be fed back to participants to gauge/allow for reconsideration of initial ranking. The analysis/evaluation process can be understood easily and the outputs of a ranking exercise can be presented visually.	Unlikely to adequately capture the key processes and feedbacks, including indirect effects/ externalities. It is not appropriate where there are known, significant 'trade-offs' to be made between outcomes. Ranking does not provide a measure of how much better one option is compared to another, nor the relative size of benefits versus costs. It merely identifies which option may be 'better' than the others. The reasons why options are ranked better or worse may not necessarily be made explicit.	A new RMA framework, or a change to an existing one, needs to demonstrate that the new framework is 'better' than the current framework, but doesn't need to show by how much better. In cases where trade-offs are apparent (there is no clear winner among the management options) and the options perform well in some areas but not others, then the technique cannot inform decision-makers as to how much better or worse options are.	Usually relies upon value/experience judgements of those undertaking the analysis. Ranking likely to be best done by a group rather than an individual so as to counter individual biases. More robust results when a range of stakeholders/experts are involved.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Cost-benefit analysis (CBA) Through this process, options are evaluated by identifying and quantifying each relevant effect, and determine whether it is a cost (negative) or a benefit (positive). These are quantified in common terms (usually monetised), as cost or benefit streams over study time period, and a discount rate usually applied to calculate costs and benefits in present value terms. There may be some weighting to particular costs or benefits if required. The formal process is to sum all costs and sum all benefits, and to identify net costs or benefits, and compare these totals to identify the benefit:cost ratio. This method is strong at determining efficiency because it provides a direct numerical comparison of benefits and costs, and is strong also in relation to effectiveness, where the desired outcomes (objectives) are quantified relative to the total potential.	CBA is best applied when the proposal's effects can be reliably quantified and monetised, and identified as benefits and costs, and where effects are mainly direct, including where effects mainly accrue to businesses and/or households, rather than the biophysical environment. It is less appropriate to proposals which have a range of effects across a wide area, and include indirect effects /externalities which are more difficult to quantify.	Simple structure, which replicates intuitive decision-making process. Focus on quantification of costs and benefits, to degree possible. Clarity of outcome, as benefits either exceed costs or they don't. Well suited to simple issues, where all or most costs and benefits are direct, they occur in short-medium term, are easily quantified and monetised, and are geographically concentrated.	Underpinned by simple maths structure (compare total costs vs total benefits) which may not capture the complexity of the actual decision process. Detail/nuances which underpin the assessment may be lost as costs and benefits are simply added together. Less suited to complex issues, where significant costs or benefits are indirect, medium-long term, are difficult to quantify (eg, environmental effects), difficult to monetise (non-market goods and services), and geographically dispersed. May be less transparent than other approaches, depending on the understanding of the methods to quantify effects.	There is risk of ignoring or excluding relevant costs or benefits if they cannot be quantified to fit the CBA structure ie, the method is more important than the decision). Risk of hard-to-quantify costs or benefits being poorly quantified, so that importance is over- or under-stated. Requires adequate level of disaggregation/detail so different outcomes accruing to different groups are able to be identified specifically. Risk of results being de-valued if the quantification of hard-to-measure effects is not trusted.	This may require considerable resource input (eg, survey, econometric analysis) to adequately quantify information, especially if it is not available locally or is not transferrable from other sources (benefit transfer). Many councils have limited experience in this approach, and are likely to require external assistance. It usually requires considerable information resource, to cover and quantify the range of effects.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
Cost effectiveness analysis (CEA) This is an assessment of the costs of alternative methods to achieve the same type of outcome. It is not necessary to quantify that outcome where the only question is the most cost effective way to achieve it. CEA is increasingly used within health economics in New Zealand. This method is strong at determining efficiency because it provides a direct numerical comparison of costs, by at least two different methods, where a single desired outcome is set.	Cost effectiveness measures the least cost option to achieve a stated outcome by at least two different methods. It is best applied to proposals where the desired outcome is known, and the decision is over how to achieve that outcome. This question is likely to arise later in the decision process, once the decision about the desired outcome is already made, and CEA is used to determine how to achieve it.	A balanced goal of a stated outcome is established, so there is an element of simplicity and directness. Cost effectiveness avoids quantifying benefits. Cost effectiveness requires the calculation of costs (as per cost-benefit analysis) but measures the costs against outcomes, rather than benefits. This tool directly relates to efficiency matters (outcomes achieved per cost incurred).	There is limited relevance to many RMA questions because of its limited scope, ie, the question is not what to do, rather what is the best way to pay for it. Its single focus means some important aspects may be lost in the decision process. For example, unintended effects.	There is risk that CEA may be applied to the wrong question in the RMA context, with an assumption that benefits are commensurate with each other.	This is a similar process to CBA, but less information required, given that benefits do not have to be measured. It is a relatively straightforward process, provided that the relevant information is available.
Simple multi criteria analysis (MCA) Simple MCA is a method where options are scored against agreed criteria. However, there is no common scoring system that enables an overall score to be summed across all criteria, for each option. Scoring can involve a variety of metrics such as Yes/No, Minor/Significant, or have scales of effect, such as none,	This method can be used for any RMA matter. It is most appropriate where there is a range of trade-offs among intangible outcomes for different resources. For more information on simple and complex MCA processes a useful guide is the UK Department for Communities and Local Government's MCA Manual, 2009.	Does allow for comparison between options as to how well options rate against one another for each criteria, and therefore provides an idea of the quantum of benefits and costs for each criteria. Imposes a more disciplined structure than a simple ranking table and therefore helps to counter typical problems associated with human judgement.	Does not provide an overall score for an option, and therefore which one is better. Does not explicitly account for impacts occurring over time (as for example, discounting in cost-benefit analysis). While some criteria may be in a form amenable to discounting, not all will be, and as a result, it is not possible to make an apple for apples comparison across all criteria in terms of effects over time.	That by setting out objectively performance against criteria, more logical and rational decisions will be made, compared to a simple list of which option is better. May be most appropriate where a decision between options swings on a couple of criteria, and as a result the inability to sum costs and benefits across all criteria is not fatal to being	Requires an assessment against each criteria as how an option will perform. An assessment (or consequences) matrix needs to be created with evaluation criteria on the left-hand side forming rows, and the options forming columns. Usually some time needs to be spent identifying the range of criteria and agreeing their wording.

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
small, some, medium, large (or 1–5), or numerical information. In the simple MCA, there is usually no attempt to explicitly weight the criteria. However, more important criteria can be identified and separated from less important. This method can address both efficiency and effectiveness, though its strength in doing so depends on the scope and rigour of the MCA structure, including how well it is able to capture the underlying processes.			However, judgements as to time-related consequences can be included in the analysis.	able to make a reasoned judgement.	This assessment method requires gathering of information and analysis as to how each option performs against each criteria. This may require expert input. Data inputs can be qualitative or quantitative.
Complex multi-criteria analysis (MCA) In complex MCA, options are scored against agreed criteria in a way that enables scores to be summed for each option. Weights are applied to each criteria (or groups of criteria). A structured approach is used to deal with more complex matters, where each criterion is disaggregated to contributing components (and further to contributing elements) in a hierarchical structure. This enables a more direct link between effects	MCA can be used for any RMA matter. It is most appropriate for complex matters, where there is a mix of tangible and intangible effects, and where only some of the relevant effects are able to be reliably monetised. For example, a proposed district growth strategy, which is very significant and with a wide range of effects to be considered in aggregate, as well as individually.	Requires making explicit assessments of weight/ importance between different effects/outcomes. Can cope with quantitative and qualitative data/information, but qualitative data needs to be translated into a numerical score. Provides a measure of how much better or worse options are for each criteria, as well as in total. Allows for sensitivity testing of scores and weights and	Can provide a sense of objectivity/rationality to a decision when the majority of inputs are still 'subjective'. Cannot determine whether costs exceed benefits as there is no common metric between costs and benefits. Open to participants to 'game' the process ie, anticipate the effect of individual scores on the overall outcome) and hence seek to influence the final score by deliberately under- or over-scoring.	Criteria must be independent of one another, how one criterion is scored should not influence how another is scored. Criteria also need to be complete, not involve redundancy, and not double count costs or benefits. Scoring needs to be consistent in terms of the direction of benefits and costs, ie, better performance leads to a	MCA generally requires fairly substantial input of time and information, particularly to ensure the assessment context (criteria, their components, and their elements) is soundly established. Once set up, however, that common context can be applied to many proposals. This approach also requires careful assessment of nature and scale of effects (in qualitative or quantitative terms).

Method/technique	When best used or avoided	Strengths	Weaknesses	Assumptions, risks	Inputs, resources, skills required
identified through technical assessment, and the contribution of these effects, progressively, to elements, components and finally the overall objectives. The criteria themselves are weighted to reflect overall (for example, district-wide) objectives. This enables options to be scored according to their contribution to objectives. The best option is that with the highest score, across the relevant criteria. This method can address both efficiency and effectiveness. It identifies both the negative and positive aspects (costs and benefits) and combines them in a structure where outcomes are able to be compared as to benefits relative to costs (both in aggregate, rather than summed), and the extent of objectives achieved (effectiveness).		therefore enables feedback loops to develop. Weightings and scores can be modified to reflect evolving understanding of trade offs.	Usually not practicable where there is a long list of options to consider.	higher score. Thus low costs score highly, while large benefits also score more highly. This may mean the reversal of normal measurement processes. Weighting of criterion needs to address the relative importance of the associated objective to which each criterion relates.	To be rigorous, it is likely to need some form of independent (third party with no interest in the final outcome) check, review of the scores.
	See the Auckland Regional Council used multi-criteria analysis of for assessing aquaculture options				

Glossary

Benefits and costs	Includes benefits and costs of any kind, whether monetary or non-monetary.
Cost-benefit analysis (CBA)	A systematic process for identifying and assessing all (both direct and indirect) costs and benefits of a proposal. All costs and benefits are assigned a money value, allowing the calculation of the net benefits of different proposals as a basis for evaluating alternatives.
Cost-effectiveness analysis (CEA)	CEA compares the costs of alternative ways of producing the same or similar outputs/benefits. It is often used to find the option that meets a predefined objective at a minimum cost.
Disaggregation	Breaking up of a total (aggregate), integrated whole, or a conglomerate, into smaller elements, parts, or units. For impacts, this helps identify what are costs and what are benefits.
Discount rates	A discount rate is used to convert flows of costs and benefits over time into a net present value.
General equilibrium (GE) modelling	GE models provide a comprehensive and detailed description of an economy that is based on microeconomic foundations and is consistent with key macroeconomic balances and principles. They may readily be extended to model resource use, emissions and other environmental pressures that are directly associated with production or consumption activities.
Intangibles	Costs or benefits that are not easily quantified in monetary terms.
Input-output analysis (IO)	Input-output analysis provides a comprehensive snapshot of the structure of the inter-industry linkages in an economy. An input-output model may be used to trace the direct, indirect and induced economic impacts associated with a given change in final demand.
Monetise	Convert into or express in the form of currency (money).
Multi-criteria analysis	A tool for appraising and ranking alternative policy options against a given set of objectives and criteria. It often includes both quantitative and qualitative variables.
Sensitivity analysis	An examination of how the result of a calculation or model varies as individual assumptions are changed.

Total economic value	Measuring the use and non-use values of a resource and valuing monetary terms, leading to include the environment in an enlarged cost-benefits analysis
Willingness to pay	The dollar value a person would be willing to pay for the benefit of something that may not have a market value, such as protecting a natural area.

Annotated references

General planning practice

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SA/SNZ HB 436:2013 Risk management guidelines: This Handbook provides guidance on the implementation of AS/NZS ISO 31000:2009, Risk management – Principles and guidelines (the Standard). The Standard defines the concept of risk, explains how it comes about, and describes the principles, framework and process that allow risk to be managed effectively.

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The Environmental Valuation Reference Inventory (EVRI). This is currently the most comprehensive database of valuation studies in terms of the number of valuation studies worldwide. At that time 56 studies or about 8 per cent of the 700 studies in EVRI were from Europe, while EVRI currently contains 1608 studies, out of which 370 (23 per cent) are from Europe.

ENVALUE is the principal database for environmental valuation studies in Australia. It contains over 400 studies, one third of which are Australian, covering nine different environmental goods. The aim of ENVALUE is to enhance decision-making by encouraging improved valuation of environmental resources, and improve the credibility of those valuations.

New Zealand non-market valuation database : This database enables easy identification of non-market valuation studies that have been undertaken in New Zealand. The database also includes contact details for New Zealand non-market valuation practitioners and analysts.

Baker, Rick and Brad Rutting. 2014. *Environmental Policy Analysis: A Guide to Non-Market Valuation*. Melbourne: Australian Government Productivity Commission.

Non-market valuation studies

Department for Environment Food and Rural Affairs. 2010. *Improving the use of environmental valuation in policy appraisal: A Value Transfer Strategy*. London: Department for Environment Food and Rural Affairs.

Covec. 2013. *Non-Market Water Values in Southland*. (Authors: Tim Denne, Stephen Hoskins, Gareth Webster (Covec), Ian Jowett (Jowett Consulting)). This report details the approach taken to estimate non-market values for Southland. The general principles can be applied by regional councils elsewhere, but the method is not prescriptive. Regional councils will want to customise their approach, depending on features of the water bodies and policies being considered.

Rohani, M. 2012. *Impact of Hauraki Gulf amenity on the land price of neighbourhood properties. An empirical hedonic pricing method case study North Shore, Auckland.* Auckland

Council Working Paper, WP2012/001: This case study has evaluated the impacts of the Hauraki Gulf on property land values in the North Shore of Auckland. The study used Hedonic price modelling to quantify the effects of Gulf amenity.

Samarasinghe, O. E and Sharp, B. 2008. *The value of a view: a spatial hedonic analysis. New Zealand Economic Papers*, 42, 59-78. This study estimates the value of a view amenity in the owner occupied residential property market in Auckland. Several dimensions of a view are analysed: type of view, scope of view and distance to the coast.

Tait, P. & Baskaran, R. 2011. *Incorporating Local Water Quality in Welfare Measures of Agri-environmental Policy: A Choice Modelling Approach Employing GIS*: This paper tests spatial hypotheses regarding respondents' local water quality and quantity, and their willingness-to-pay for improvements in water quality attributes.

Kerr, G. N and Sharp, B. 2002. *Community perceptions of stream attributes: focus group results*. Report to Auckland Regional Council. Canterbury: Agribusiness and Research Unit, Lincoln University: The principal aim of this project was to apply choice modelling as a tool for development of offsetting mitigation assessment in two locations within the Auckland metropolitan area.

Sinner J, Bell B, Phillips Y, Yap M, Batstone C. *Choice modelling to inform collaborative decisions on the uses and values of rivers*. Australasian Journal of Environmental Management (in review): This is a choice modelling study designed to identify public preferences about freshwater management priorities in a contested policy context, as part of an experiment in collaborative governance about uses and values of rivers.

Kerr, G.N. 2011. *Oral presentation delivered at the 55th Annual AARES National Conference, Melbourne, Victoria, 8-11 February 2011*: This presentation provides a New Zealand perspective on value transfer. It covers the current value transfer market, with a practitioners view on supply and demand, environmental values, and the legal aspects.

Valuing nature and total economic value

Christensen, Mark and Maree Baker-Galloway. 2013. Valuation of Natural Assets – What the Courts Have Said So Far. Resource Management Journal: 9–15. This article sets out what the courts have said so far about the valuation of natural assets.

Clough, Peter, Matt Hickman and John Stephenson. 2013. *Valuing Natural Assets: Essential for decision making*. Wellington: New Zealand Institute of Economic Research.

Ministry of Culture and Heritage. *Value and Culture: An economic framework*. This paper seeks to clarify the understanding of value in the cultural context, using economics concepts. It develops an economic framework for thinking about value in the cultural context and discusses how well various valuation techniques are able to account for such values.

Elmqvist T., T. M. 2011. *Managing Trade-offs in Ecosystem Services*. New York: The United Nations Environment Programme. The paper presents an ecological perspective on regulating services. It demonstrates the role of economics in developing methodologies to manage trade-offs between provisioning and regulating services.

Ministry for the Environment. 2010. *Regional Economic Analysis – Uses of Water in the Waitaki Catchment:* New Zealand Government. This report provides a regional perspective on the costs and benefits of various allocation scenarios for use of water from the Waitaki Catchment. It seeks to understand matters such as the distributional aspects of the costs and benefits and

the social impacts. The report contains a regional cost-benefit analysis and a regional impact assessment.

National Institute of Water and Atmospheric Research. 2010. *Waikato River Independent Scoping Study.* Hamilton: National Institute of Water and Atmospheric Research. This report provides an assessment of the health of the Waikato River and its catchment. It recommends actions that could be undertaken to restore the river. It integrates Matauranga Māori and western science.

Rohani, M. 2013. *Freshwater Values Framework. A Review of Water Valuation Methods Utilised within Total Economic Valuation*, Auckland Council working report, WR2013/001. The paper provides a summary of total economic value (TEV) and economic valuation tools for monetary and non-monetary values associated in fresh water, to inform the preferred approach of an agreed value framework using TEV.