

APP1:
NZTA LANDSCAPE AND VISUAL ASSESSMENT GUIDELINES

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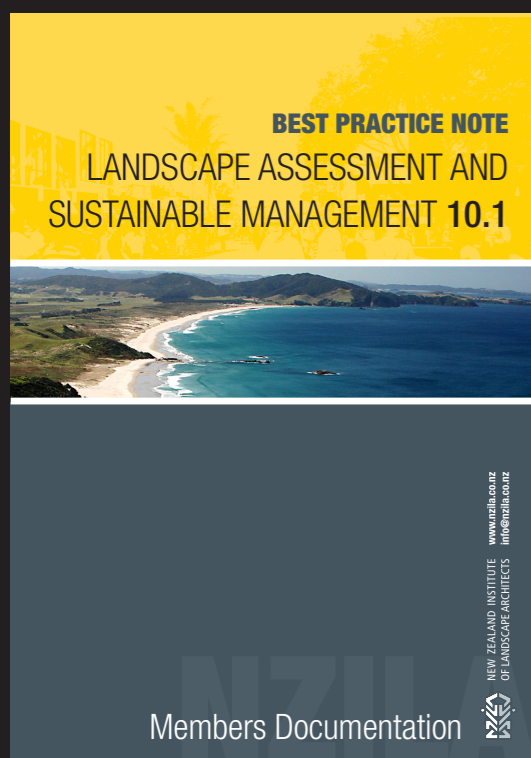


app1:
**NZTA
LANDSCAPE
AND VISUAL
ASSESSMENT
GUIDELINES**

1.0 INTRODUCTION

These guidelines promote 'best practice' for landscape and visual assessments (LVA) for New Zealand Transport Agency (NZTA) projects. LVAs are technical reports forming part of Assessments of Environmental Effects (AEE) for applications for resource consents and Notices of Requirement for designations (NoR). They also form part of the Social and Environmental Assessment (SEA) at the Scoping and Scheme Assessment phases, and may form part of an Outline Plan of Works (OPW).

15. This guideline is consistent with the general approach and principles contained in the 'Best Practice Note 10.1: Landscape Assessment and Sustainable Management', 2 November 2010, published by the New Zealand Institute of Landscape Architects (NZILA)



1.1 PRINCIPLES

The purpose of an LVA is to assist the decision-makers¹⁹. It should be:

- Tailored to the relevant RMA issues;
- Tailored to the specifics of the project;
- Succinct and readable;
- Integrated with the design process (to seek to avoid, remedy and mitigate adverse effects as far as practicable, and seek opportunities for positive effects as part of the design²⁰) and linked to other disciplines (such as urban design, ecology, civil engineering);

1.2 CONSISTENCY WITH CODE OF CONDUCT

An LVA should also be consistent with the Code of Conduct for Expert Witnesses²¹, not least because the LVA will be the foundation for subsequent evidence. It should therefore:

- Be impartial;
- Include all relevant matters (including those detrimental to the client);
- Explain the facts, assumptions and reasons behind the opinions expressed;
- List any literature relied on;
- Describe the methodology.

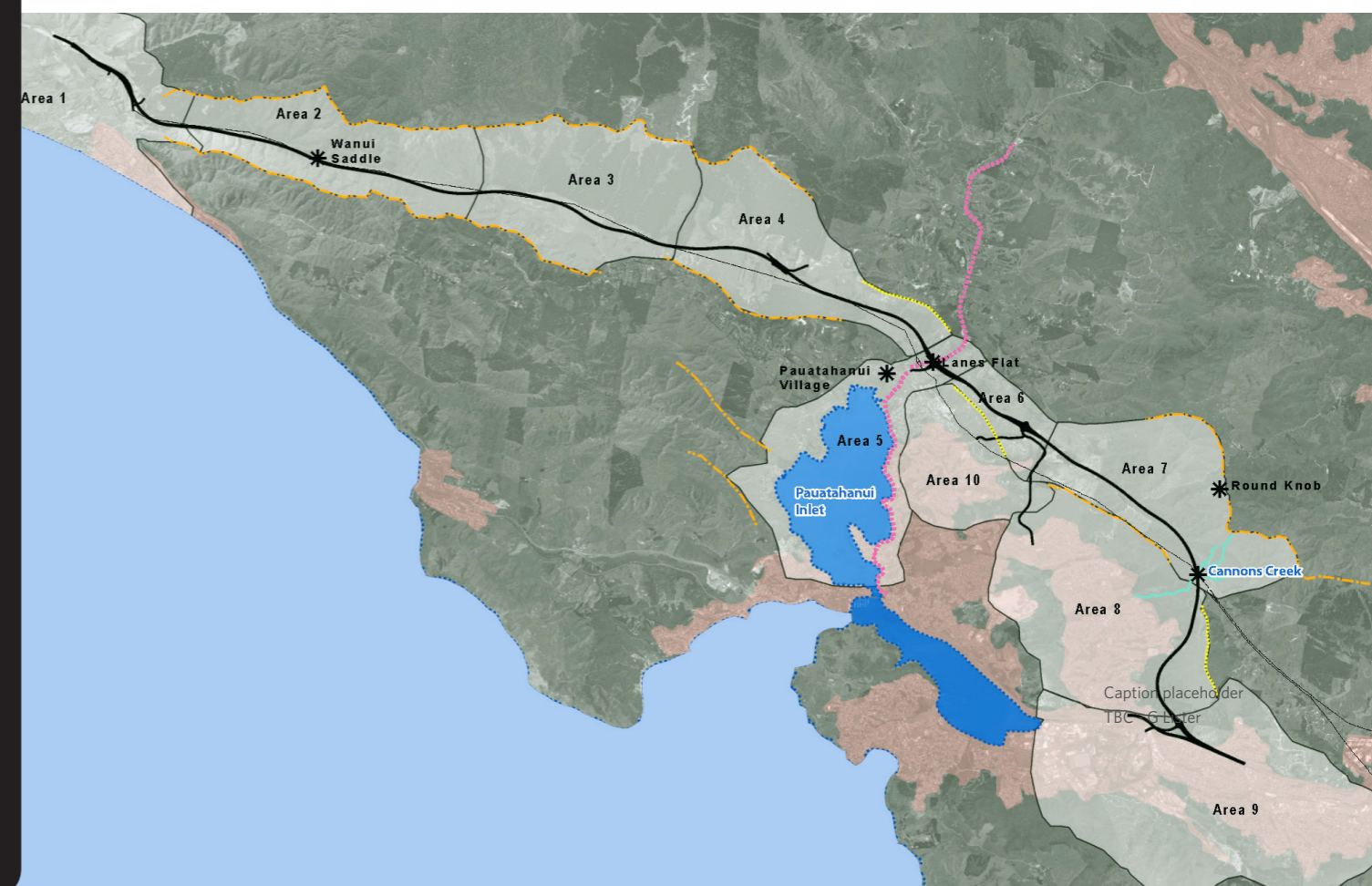
1.3 LEVEL OF DETAIL

The LVA should have a level of detail that corresponds to the scale and significance of the effects the activity may have on the environment (following the principle set out in RMA s88). LVAs for a project with minor effects should be brief, whereas highway or motorway projects with potentially significant effects require a more comprehensive assessment.

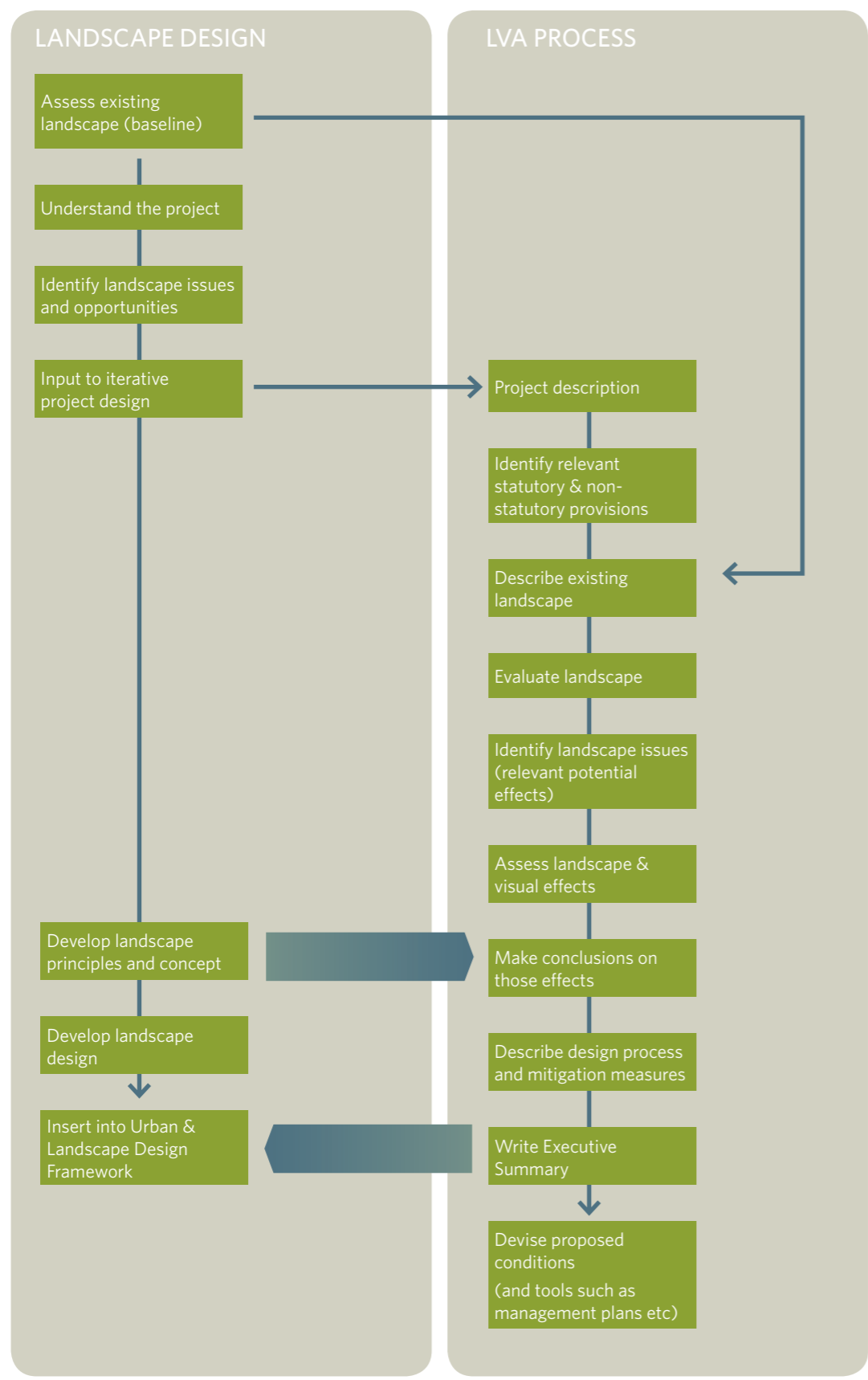
16. For instance; District and Regional Councils, Requiring Authorities, the Environment Court, Boards of Inquiry.

17. While the RMA does not require an application to have positive effects, decision makers are required to take effects (both adverse and positive) into account when recommending or deciding on an NoR or resource consent application.

18. Environment Court of New Zealand Practice Notes, Expert Witnesses Code of Conduct, <http://www.justice.govt.nz/courts/environment-court/legislation-and-resources/practice-notes/expert-witness.html> (retrieved 12/03/12)



**DIAGRAM 1: GENERALISED PROCESS
LANDSCAPE AND VISUAL ASSESSMENTS**



2.0 CONTENTS OF AN ASSESSMENT

Organise the LVA under the following main headings:

- Executive Summary
- Description of Proposal
- Relevant Statutory and Non-Statutory Provisions
- Existing Landscape
- Alternatives
- Landscape and Visual Effects
- Design and Mitigation Measures

Such a structure addresses the matters that need to be included in an AEE as listed in RMA Schedule 4(1).²²

However tailor the sub-headings and content to the specifics of each project. For instance, the sub-headings under 'Existing Landscape' and 'Landscape and Visual Effects' should vary between projects and should reflect the specific landscape context and the issues specific to the project. A common fault is to follow a formulaic approach that includes too much irrelevant material and insufficient focus on the matters pertinent to the specific landscape and the particular issues arising from the proposal. Such an approach is often the result of an uncritical reliance on templates. While the main headings listed above provide a basic template, a critical approach needs to be taken to the sub-headings and content within this basic structure.

Use appendices to keep the main LVA succinct. Much of the detailed analysis and background material (including the methodology, lists of relevant statutory and non-statutory provisions, detailed assessments and inventories) is best placed in appendices.

19. While the LVA is not itself an AEE, it is helpful to follow a similar format because the AEE will draw on material from the LVA along with other reports.



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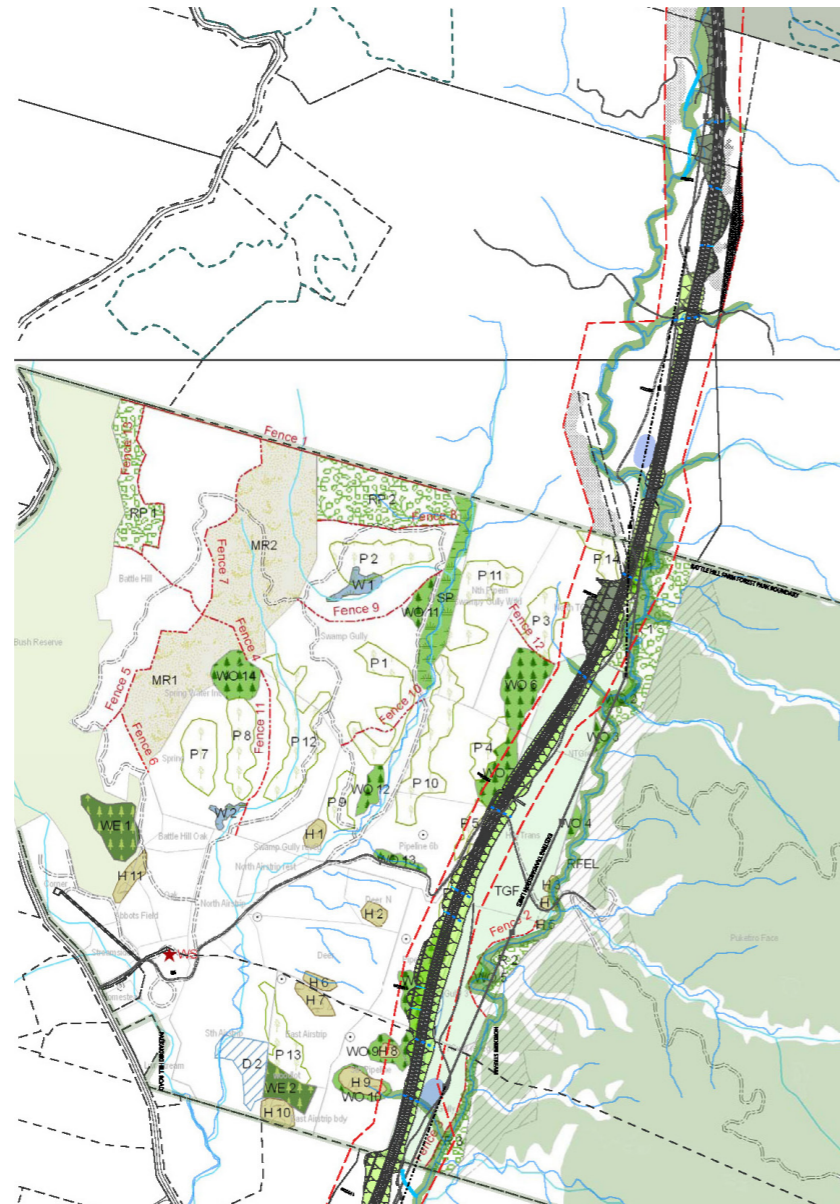
3.0 AN EXECUTIVE SUMMARY

Include an executive summary to assist the decision-makers:

- Identify the main landscape & visual **issues** (potential effects relevant to RMA considerations);
- Summarise the **alternatives** considered
- Summarise the effects (their **nature** and **magnitude**);
- Summarise the design measures incorporated into the project to **avoid, remedy or mitigate** potential adverse effects, and similarly summarise measures incorporated into the design that **may achieve positive landscape effects**.
- Provide a **conclusion** with reasons on each landscape issue.

The Executive Summary should be coherent as a **stand-alone statement**. It is sometimes extracted and copied into the AEE, and may be the only part of the LVA some people will read.

An executive summary should be approximately **1-3 pages** depending on complexity of the project.



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4.0 DESCRIPTION OF PROPOSAL

Paint a brief word picture of the project and highlight those aspects relevant to landscape such as the basic road dimensions, earthworks, vegetation clearance and stream crossings, and structures. The description should be consistent with the official Project Description (PD) -usually prepared by the Planners or Engineers, but its purpose is not to replicate the official PD. The 'Description of Proposal' section of the LVA should:

- Be brief (it may be as short as a paragraph and should be no more than 1 page);
- Focus on elements relevant to the LVA; and
- Be consistent with and reference the official project description.

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5.0 RELEVANT STATUTORY AND NON-STATUTORY PROVISIONS

Because the role of the landscape architect is to assist the decision makers, the LVA should be written in a way that addresses the landscape matters the decision makers will consider under the RMA. In other words it is important the author understands the RMA context of the project. It is recommended that the relevant RMA provisions be discussed and clarified with the project planner or lawyer.

As a general guide, matters to be considered when deciding an application for resource consent or a NoR are set out in RMA s104 and s171 respectively, and those relevant to an LVA include:

- Landscape and Visual Effects of the proposal;
- Policy statement and plan provisions²³ relating to landscape and visual issues; ²⁴
- Alternative locations or methods²⁵; and
- Other relevant matters (e.g. non-statutory documents such as existing district-wide landscape assessment reports)

The matters listed above are subject to Part 2 of the RMA which has the over-riding purpose of promoting sustainable management. Those sections of Part 2 likely to be most relevant to a LVA are listed below. ²⁶

Section 5	Purpose and principles of the RMA
Section 6 (a)	Preservation of the natural character of the coastal environment ... wetlands, lakes, rivers and their margins, and the protection of them from inappropriate subdivision, use and development
Section 6(b)	Protection of outstanding natural features and landscapes from inappropriate subdivision, use and development
Section 7(c)	Maintenance and enhancement of amenity values
Section 7 (f)	Maintenance and enhancement of the quality of the environment

Recommended wording to use in relation to the relevant provisions of the RMA itself is included in the side bar on page (17). Seek advice from the project's planner on the relevant provisions of policy statements and plans. This section of the LVA should typically be 1 to 2 pages long. Highlight only the most pertinent points and place any further detail in an appendix.

It is stressed that the LVA is not a planning assessment. It is the planner's role to assess the project against the relevant provisions. The purpose for identifying the landscape provisions in the LVA is to frame the assessment in a way that focuses on the landscape matters that the decision makers will consider.

20. There is a hierarchy of statutory documents whose purpose is to give effect to the RMA, including national policy statements, regional policy statements and regional plans, and district plans. Other documents (such as a landscape assessment undertaken by a District Council) can be covered under the 'other matters' heading

21. These might include landscape objectives and policies in the policy statements and plans; landscape assessment criteria; and special landscape status such as areas identified as 'outstanding natural features and landscapes' or landscape overlays.

22. Where there will be significant adverse effects on the environment.

23. Other matters, such as s6(c) (the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna) may also be relevant, although they are usually dealt with by other disciplines. Those listed are the matters usually most relevant to landscape.

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6.0 EXISTING LANDSCAPE (DESCRIPTION AND EVALUATION)

6.1 DEFINING 'LANDSCAPE'

Include a definition of the term 'landscape' in each LVA. The definition contained in the NZILA Practice Note ²⁷ is recommended:

'Landscape is the cumulative expression of natural and cultural features, patterns and processes in a geographical area, including human perceptions and associations'.²⁸

6.2 DESCRIBING THE LANDSCAPE

Describe the landscape, highlighting those aspects relevant to the project, and ensuring that each of the main aspects contained in the definition are covered (in other words make sure the description covers natural and cultural aspects, and human perceptions and associations). The following table lists typical factors that might be relevant:²⁹

	TYPICAL FACTORS
Geographic Aspects (Natural and Cultural features, patterns and processes)	<ul style="list-style-type: none"> • Natural Factors • Geology and geomorphology • Topography and drainage patterns • Vegetation and soil patterns • Ecological and dynamic components Human (i.e. 'cultural') Factors • Road and settlement patterns • Land use
Perceptual Aspects ('sensory' aspects)	<ul style="list-style-type: none"> • Geomorphic legibility (how obviously the landscape expresses the geomorphic processes) • Orientation legibility (visual clarity of landmarks, edges, and different character areas) • Visibility, public and private views • Aesthetic (picturesque) qualities (presence of water, contrast of shadow and light, perspective depth) • Coherence (the extent to which human patterns reinforce the underlying natural landscape)
Associative aspects	<ul style="list-style-type: none"> • Historical associations • Tangata whenua associations • Recreational use • Emblematic aspects (e.g. an icon for an area) • Note: Consideration of the factors listed above should take into account things that may be present only occasionally or seasonally or in different weather conditions (i.e. 'transient factors') ³⁰

24. New Zealand Institute of Landscape Architects, 2 November 2010, 'Best Practice Note 10.1: Landscape Assessment and Sustainable Management'.

25. Visual appearance and views are a subset of 'landscape'. 'Visual effects' are a subset of 'landscape effects' and are usually associated with a specific method, see below.

26. The list is similar to a list contained in the 'Lammermoor decision' (Maniototo Environmental Society Incorporated and others v Central Otago District Council and Otago Regional Council Decision C103/2009, paragraphs 201 to 204). The list is not exhaustive or fixed or a formula. It merely provides typical factors. The relevance of any factor will depend on the context.

27. The factors listed in the table cover all those in the so-called 'Pigeon Bay criteria' which have been used for some years. Although the 'Pigeon Bay Criteria' are gradually falling out of favour as a framework for describing landscape, the factors to which they refer are still relevant, there is a body of case law that refers to the 'Pigeon Bay criteria', and they are incorporated in a range of documents and plans. Landscape Architects should therefore be aware of them and ensure that the landscape factors contained within the 'Pigeon Bay criteria' are addressed one way or another when carrying out LVAs.

However the landscape description should not simply be a catalogue of factors. Every landscape is the particular combination of its different factors, and has its own particular sense of place. It is how they come together collectively that makes a landscape. The writer should therefore exercise judgement and art in describing the pertinent factors and how they interrelate with each other to create each landscape. As discussed above, the subheadings of this section of the LVA should reflect the particular context, and are likely to vary from one place to another.

6.3 EVALUATING THE LANDSCAPE

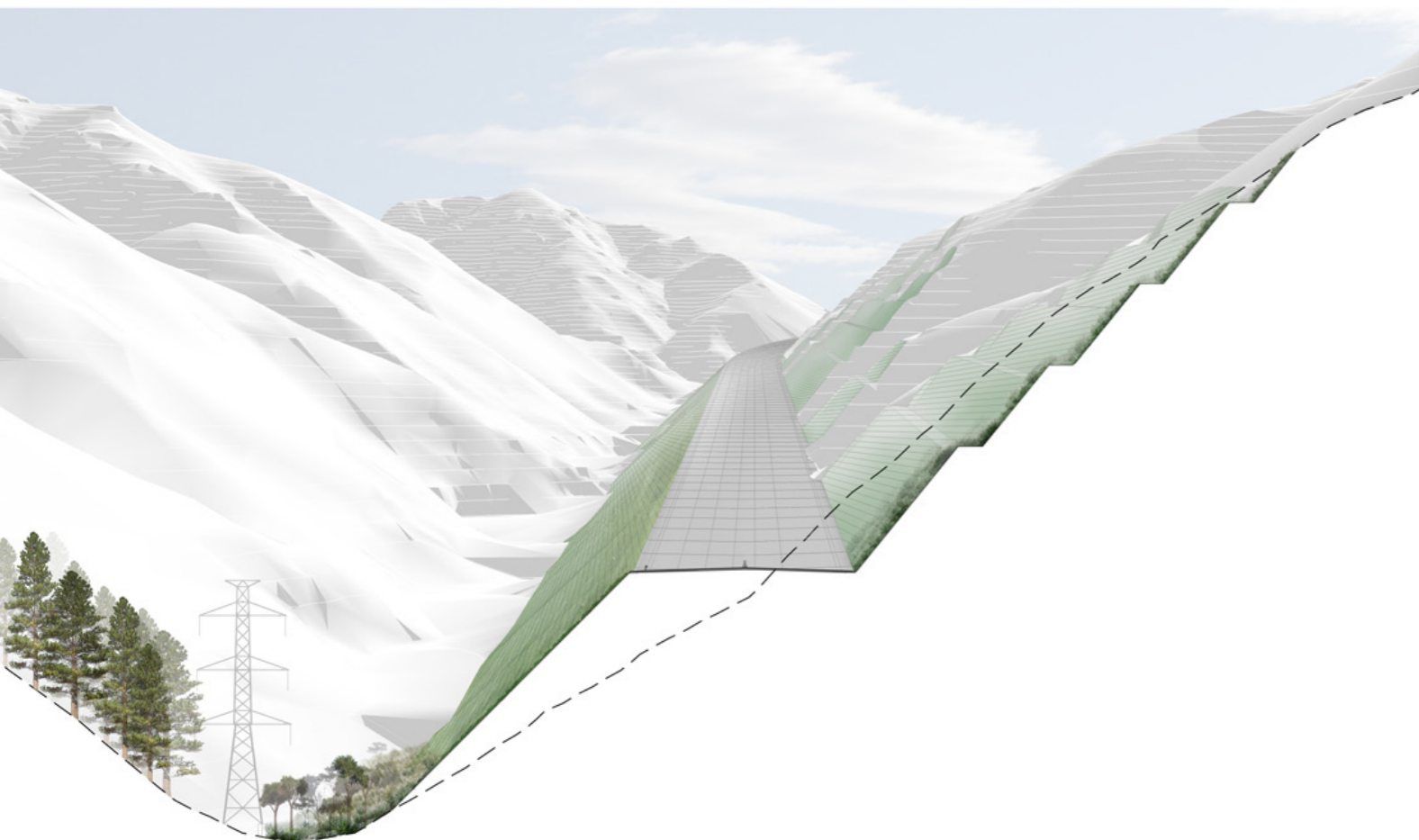
Evaluate the landscape relative to other landscapes. This requires an **overall evaluation** taking into account the factors listed above. For instance:

- What are the **characteristics** that give the landscape its value;
- How **significant** is that value; and
- What are the **reasons** for your overall judgement?

Sometimes a scale is used to rank landscape factors as an aid to evaluation. While it can be a useful discipline, such 'scoring' should not be applied in a formulaic manner. An evaluation should rest on an overall professional appraisal and needs to be justified with reasons.

The 'Existing Landscape' section of an LVA should typically be **2 – 5 pages** depending on the extent and complexity of the project area.³¹

28. It may be longer on the largest or most complex projects



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7.0 ALTERNATIVES

The RMA requires that alternative locations and methods be taken into account where the adverse effects of a proposal on the environment will be significant.

The alternative locations (e.g. route alignments) and methods (e.g. bridge v tunnel) considered should be addressed under this heading where it fundamentally affects the landscape assessment. For instance, assessment of alternative alignments will be a fundamental aspect of an NoR for a highway through a green-fields route. On the other hand, discussion of alternatives considered in relation to matters of detail (e.g. alternative designs for a bridge) might best be addressed in the 'Design and Mitigation Measures' section.

The 'Alternatives' section of the LVA should:

- Summarise the major alternatives considered;
- Compare and contrast the **relative landscape and visual effects**³² for the alternatives; and
- Provide reasons for the preferred option in landscape terms. Landscape is only one matter to be taken into account so the preferred option may not be the best in landscape terms. In such cases briefly summarise the reasons an option which is not the best in landscape terms was selected.

29. The relative nature and magnitude of the different effects



Image required illustrating route selection options as part of LVA
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8.0 LANDSCAPE AND VISUAL EFFECTS

8.1 IDENTIFYING LANDSCAPE ISSUES

List the main landscape issues at the start of the 'Effects' section and use these as the subheadings for this section of the LVA. An 'issue' is an effect in the context of a statutory provision. For example:

RMA PROVISION	EXAMPLES OF LANDSCAPE ISSUES ³³
s6(a) Natural Character of Coastal Environment, Wetlands, and Lakes and Rivers	<ul style="list-style-type: none"> Effects on natural character (biophysical and perceptual) of rivers and streams
S6(b) Outstanding Natural Features and Landscapes	<ul style="list-style-type: none"> Effects on the qualities of an outstanding natural feature or landscape
s7(c) amenity values	<ul style="list-style-type: none"> Effects on landscape character Effects on streetscape Effects on recreational experience in a park Effects on landscape context of an historical site Effects on views Effects on visual amenity from private property Temporary visual effects during construction
S7(f) quality of the environment	<ul style="list-style-type: none"> Effects on landforms Effects on vegetation ³⁴

The examples listed above are typical, but there is a range of potential landscape issues and a key task is to identify those relevant to the particular context and project.

- Effects include potential as well as actual effects. A potential effect might be avoided (or reduced) by design measures, which should be described in the 'Design and Mitigation Measures' section of the LVA.
- Effects include positive as well as adverse effects³⁵. While assessments typically focus on adverse effects, positive effects are also a relevant consideration³⁶ and should be described in the LVA. ³⁷ (It is also worth noting that RMA sections 7(c) and 7(f) require particular regard should be had to the maintenance and enhancement of amenity values and the quality of the environment respectively).
- Effects include temporary as well as permanent effects (for example landscape and amenity effects are typically amplified during construction).
- Effects also include cumulative effects which will arise over time or in combination with other effects.

32. RMA section 3.

33. For instance, RMA s104 and s171 relating to applications for resource consents and notices of requirement respectively. Note that positive effects are not relevant to decisions on notification.

34. However such positive effects should also be described in an impartial way. Avoid becoming an advocate.

30. This list is not by any means exhaustive.

31. Sometimes there is overlap between different issues. Rather than repeat matters it is best to simply refer to other parts of the LVA.

9.0 ANALYSING ACTUAL EFFECTS



Describe the precise nature of the effect. For instance change is not an effect per se. By way of example, it is not the quantity of the earthworks that is relevant, rather the effect of the earthworks on (say) visual amenity values or natural character of a stream.

Evaluate the magnitude of the effect. Magnitude is influenced by variables,³⁸ for example the dimensions of a cut batter, distance from a viewpoint, extent of screening. Use a relative scale to rank magnitude, but always give the reasons to justify the ranking. The following 5 point scale is suggested: It is symmetrical around a 'moderate' middle score, uses neutral ('objective') descriptors, and can be used for a range of effects or other purposes.³⁹



Discuss measures taken to mitigate each adverse effect: While such an approach is reductionist and repetitive, it helps decision-makers to consider each effect and its mitigation as part of their step-by-step deliberations. However, design measures should also be described as a whole under the separate heading 'Design and Mitigation Measures' (see below).

Conclusions on each Landscape Issue

Finally, provide an overall appraisal on the effects in relation to each landscape issue including:

- A summary of the nature and magnitude of landscape effects;
- An appraisal of the likely effectiveness of the mitigation measures (whether the effects will be 'adequately mitigated'); and
- A professional opinion on whether the effects will be 'acceptable' or 'not acceptable' in landscape terms. Such an opinion should acknowledge that landscape is only one matter to be taken into account, and state the reasons for the opinion such as the context, the nature and magnitude of adverse and positive effects, and the mitigation. The purpose of the professional opinion is to assist the decision makers in their weighing of landscape issues with other matters.

The 'Landscape and Visual Effects' section is the main part of an LVA. Its length will vary depending on the complexity of the project and landscape issues, but the level of detail should be proportional to the potential degree of effects. It might typically be between 5-25 pages, although it may be longer for the most complex projects.

35. In other words an assessment of magnitude can be thought of as an assessment of variables.

36. Always specify any scale used.

NZTA POLICIES AND GUIDELINES (TO BE UPDATED TO REFLECT NEW SUITE OF POLICIES AND GUIDES)

The following NZTA documents are relevant to landscape matters:

NZTA DOCUMENTS	DESCRIPTION
Environmental and Social Responsibility Policy	High level policy which includes NZTA's over-arching goal of promoting an accessible and safe transport system that contributes positively to NZ's economy, society and environment, and a commitment to acting in an environmentally and socially responsible manner.
Urban Design Policy	High level policy which includes the following: Urban design is more than aesthetics: It concerns the structure and form of urban and rural landscapes including circulation, activities and form; Urban design is to be a central component of NZTA projects; and Urban design is to be integral to the design process from project conception through to detail design.
Urban and Landscape Design Frameworks	Describes the following in more detail: The requirement to prepare Urban and Landscape Design Framework (ULDF) for NZTA projects; Content of an ULDF; and The role of ULDF at different stages of the design process.
Bridging the Gap	Sets out the NZTA's urban design objectives, requirements and principles of transport projects key document in association with the Landscape Guidelines
Urban Design Principles	Design principles and guidance notes relating to specific elements including: Landscape Design
Urban Design Professional Services Guide	Describes requirements, deliverables and design processes relating to urban design professional services. It includes a requirement for design to be integrated with the overall project design, and integral to the design process from start to finish.

RELEVANT CASE LAW

LVA authors should be familiar with definitions, principles and interpretations covered in decisions from the Environment Court and Boards of Inquiry relevant to landscape matters including:

- Definitions of 'landscape' and 'visual'
- Relevant aspects to consider within the scope of 'landscape'
- Definitions of 'natural' and 'natural character'
- Principles for identifying outstanding natural features and landscapes

RECOMMENDED STANDARD TEXT FOR THE PART OF THE 'RELEVANT STATUTORY AND NON-STATUTORY PROVISIONS' SECTION WHICH ADDRESSES THE PROVISIONS OF THE RMA ITSELF

"Both a notice of requirement for a designation and an application for resource consent must, among other things, provide information as to the effects that a proposed Project would have on the environment and the ways in which any adverse effects would be mitigated. For resource consent applications this assessment

- is required to be undertaken to a level of detail which corresponds with the scale and significance of the effects that the activity may have on the environment; and
- Is specifically required to include consideration of landscape and visual effects and effects on both the immediate neighbourhood and, where relevant, the wider community.

When considering a notice of requirement for a designation or an application for resource consent a Council, Board of Inquiry or the Environment Court must, "subject to Part 2 of the RMA", consider (among other things):

- The effects on the environment of allowing the requirement or activity.
- Any relevant provisions of an operative or proposed RMA plan or regional policy statement; and
- Any other matter they consider relevant.

Under Part 2 of the RMA they must, among other things:

- Recognise and provide for:
 - › The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development;
 - › The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development;
- Have particular regard to:
 - › The maintenance and enhancement of amenity values
 - › The maintenance and enhancement of the quality of the environment.
 - › Any finite characteristics of natural and physical resources.

USE OF THE TERM 'MINOR'

Although the term 'no more than minor adverse effects' is often used in LVAs, it is only relevant to two specific RMA tests and it is best to reserve the use of the term for such instances:

- a. the gateway test for non-complying activities under s104D(1)(a); and
- b. the tests for public notification or limited notification (of applications for resource consent or NoR) under s95A(2)(a) and s95E(1)

NATURAL CHARACTER OF THE COASTAL ENVIRONMENT, WETLANDS, LAKES AND RIVERS AND THEIR MARGINS

A specific task relates to section 6(a) of the RMA which requires decision makers to recognise and provide for, as a matter of national importance:

“the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development”.

These provisions have application to most projects because ‘rivers’ are defined to include ‘continually or intermittently flowing streams and watercourses’ (RMA s2).

Take into account the following points:

- The extent of the term ‘margin’ is not defined. A common usage is the ‘Queen’s Chain’ (i.e. 20m from the stream) but it depends on context taking into account the size of the river and the importance of any backdrop.
- The ‘coastal environment’ is an environment in which the coast is a significant part or element. It includes the active coastal zone and the land backdrop. The first ridge is a useful boundary in many cases, but the extent depends on context.
- ‘Natural character’ is not a scientific concept. It includes biophysical aspects, and also perceptions of naturalness.
- The term ‘natural’ has the same meaning as for s6(b). It can include exotic pasture and trees.
- The recommended approach is to focus on the landscape facts rather than be overly concerned with the definitions and delineations.

The following process is recommended:

- Determine whether the project might be within the coastal environment or the margins of wetlands, lakes and rivers based on context;
- Describe the aspects of the area’s natural character, and assess the degree of natural character. As with landscapes, assessment of natural character should not be overly formulaic, and needs to be justified with reasons.
- Analyse the nature and magnitude of the proposal’s effect on natural character, taking into account any remediation or mitigation proposed; and
- Provide a professional opinion, with reasons, on the extent to which the natural character is preserved from a landscape perspective. It may in some circumstances be helpful to provide a professional opinion, with reasons, why a proposal might be appropriate or inappropriate from a landscape perspective. However any such opinions should be qualified by a statement that the author acknowledges that landscape is only one of the matters that the decision maker needs to take into account in determining whether overall a project is appropriate in terms of s6(a) or whether overall the preservation of natural character is recognised and provided for (e.g. ecological factors are also relevant). The reasons should refer to the nature of the context and mitigation measures.

OUTSTANDING NATURAL FEATURES AND LANDSCAPES (ONFS AND ONLS)

Another specific task relates to section 6(b) of the RMA which requires decision makers to recognise and provide for, as a matter of national importance:

“the protection of outstanding natural features and landscapes from inappropriate subdivision, use and development”.

Check the District Plan and Regional Policy Statement for classified ONF/ONLS. However, an assessment should still be undertaken if there is any likelihood of an ONF/ONL in the project vicinity. Even where ONF/ONLS have been identified in the relevant Plans there is precedent in case law that additional ONF/ONLS might be identified, and in some cases Councils have simply not undertaken the exercise of identifying ONF/ONLS.

Take into account the following points:

- The adjective ‘natural’ applies to both ‘outstanding natural features’ and ‘outstanding natural landscapes’.
- ‘Natural’ has a broad meaning: It can include exotic pasture and trees. So a pastoral landscape with few structures could still be sufficiently natural to be an ‘outstanding natural landscape’.
- The test for ‘outstanding’ is an ordinary language one: i.e. is it “conspicuous, eminent, especially because of excellence”. The frame of reference is usually ‘relative’ to other landscapes in a district. (ONLS do not have to be nationally outstanding). But there is no ‘quota’. Some districts might not have any ONF/ONLS whereas other districts might contain a high proportion.

The following process is recommended to appraise ONF/ONLS:

- Delineate the spatial extent of the feature or landscape.
- Analyse the feature/landscape in accordance with the Existing Landscape (Description and Evaluation) section of these Guidelines.
- Apply a ‘gateway’ test of its naturalness: Is it sufficiently natural to be considered as an ‘outstanding natural feature or ‘outstanding natural landscape’?
- Taking the landscape as a whole (i.e. the combination of its aspects) evaluate whether it is ‘outstanding’ (see above). Justify the evaluation with reasons.
- Assessing Effects of the Proposal on the ONF/ONL
- Identify the qualities that make the ONF/ONL ‘outstanding’;
- Analyse the nature and magnitude of the proposal’s effect on such landscape qualities; and
- Provide a professional opinion, with reasons, on the extent to which the proposal might diminish the ONF/ONL in any significant way.

SCOPING REPORT - SCHEME ASSESSMENT REPORT - ASSESSMENT OF ENVIRONMENTAL EFFECTS

NZTA procedures follow a step-wise process from initial Scoping Report through to the Assessment of Environmental Effects (AEE) to support its resource consent applications or a Notice of Requirement (NoR). LVAs are required at each stage, and should follow a coherent process from start to finish.

However the initial stages are typically more general in the degree of detail required. For instance a Scheme Assessment Report (SAR) will be based on a typical design, only the type and order of landscape effects will be assessed, and design will be limited to principles and concepts.

SCOPING REPORT

The Scoping Report covers the initial consideration of alternative options. The ACRE process [Area, Corridor, Route, Easement] is a particular method for route selection at the Scoping Report stage, by which options are narrowed down at successive levels of detail. A baseline landscape assessment is a component of the ACRE process, in which landscape units are 'scored' as part of a multi-criteria analysis in terms of the following attributes:

LANDSCAPE QUALITY

Assess the landscape in terms of its components. Assign a relative overall 'score' to each landscape unit. While it is accepted that landscape cannot readily be reduced to a 'score', such numerical ranking is a tool to enable landscape units to be compared relative to each as part of a multi-criteria analysis involving other disciplines. The purpose is to help route selection by identifying landscapes of lesser or greater value, and lesser or greater ability to accommodate the road.

ABSORPTION CAPABILITY:

Assess the landscape in terms of its ability to absorb the road. In essence this is an estimate of the **likely level of effects**, taking into account:

- Topography (likely extent of earthworks)
- Settlement density (likely degree of visual amenity effect)
- Extent of vegetation (likely degree of screening)
- Land use complexity (likely extent of existing modification)

The landscape units should be drawn to distinguish different landscape types or character areas in a way that lends itself to sensibly comparing alternative routes: For instance landscape units may be long and narrow to enable comparison of parallel routes.

SCHEME ASSESSMENT REPORT

The SAR entails selection of a preferred option from a 'short list' identified in the Scoping Report (Part of the 'Route' phase of the ACRE process). An LVA is part of a Social and Environmental Assessment (SEA) for this phase. The main difference from the earlier phases is the level of detail. The purpose of the SAR is to identify and explain the reasons for the choice of the preferred option (relevant to demonstrating the consideration of alternatives in the subsequent AEE), evaluate the order of effects, and identify issues or opportunities to be addressed in the detailed design.

(Note: Because the 'highway' alignment is not known at the Scoping Report phase, the focus is on landscape attributes rather than actual effects. This is the only phase at which 'absorption capability' is relevant. At the SAR phase the assessment can focus on the effects of an alignment and design).

ASSESSMENT TOOLS

The following are tools that may be useful depending on the situation. They are not exhaustive.

Baseline Assessment	A baseline assessment is useful prior to route selection or commencement of the design. It will analyse the existing landscape and identify: <ul style="list-style-type: none"> ▪ Areas or features to be avoided; ▪ Potential adverse effects; ▪ Opportunities to avoid or reduce potential adverse effects; ▪ Opportunities for positive effects that might be incorporated into the design.
Calibration Assessment	A 'calibration assessment' is a useful technique to increase objectivity. For example an existing highway similar in character to that proposed may be used to calibrate the extent to which increasing distance diminishes the magnitude of visual effects. Other factors affecting the magnitude of effect (such as relative elevation, intervening vegetation, complexity of intervening landscape) would also be identified. Such exercises sharpen observation. However it is important not to let such an approach become formulaic. Such calibrations are only useful as a starting point to professional appraisal taking all factors into account.
Visual Assessment	Visual effects are a specific subset of landscape effects, typically assessed by the following method: <ul style="list-style-type: none"> ▪ Identify and describe the area from where the project will be visible ("visual catchment", "zone of theoretical visibility"); ▪ Identify the people who will see it ('viewing audience'), and the relative sensitivity of those types of audience to landscape matters; ▪ Select viewpoints to represent the different locations and audiences (representative viewpoints). It can be a good idea to agree these viewpoints with the local authority. ▪ Describe the nature and magnitude of effects on the view from each representative viewpoint. ▪ Photomontages are often also done from the representative viewpoints. ▪ Variations on the method include a sequential analysis from roads, and assessment of visual effects from properties (see below).
Property Inventory	An inventory is an effective way of dealing with a large number of properties, and also of identifying persons affected visually by the proposal (see RMA 4th Schedule). It should be placed in an appendix and summarised in the main report. It is a form of visual assessment. Use the following process: <ul style="list-style-type: none"> ▪ Compile a list of properties using consistent numbering with other work streams (a GIS 'gatekeeper' is a useful way of ensuring consistency). ▪ Use representative viewpoints for groups of properties (for instance urban areas or clusters of lifestyle properties) and individual entries for properties in rural areas or where there are unique circumstances. ▪ Assess effects on the property in general with particular emphasis on the dwelling(s). (Bear in mind that effects are not limited to dwellings, but will be experienced in other parts of properties). Make assessments from road side in first instance, and make property visits where relevant and practicable. Summarise main points in the inventory. ▪ Rank the effects against the five point scale making an overall judgement of the factors in each case.

Photomontages	<p>Although photomontages cannot replicate actual experience, they are an important tool:</p> <ul style="list-style-type: none"> Photomontages generally involve merging a digital terrain model of the landscape / project with a photo using either terrain matching and/or control points. The works are subsequently rendered, including addition of proposed planting etc. Photomontages should be produced at a size that represents correct scale for a nominated reading distance (400mm is recommended). This requires a calculation based on the lens and camera receptor details. All photomontages in a series should have a consistent scale (i.e. be produced at the same reading distance). Photomontages should include sufficient field of view to present a fair perspective. Ideally photomontages should represent a similar field of view to human binocular vision which is normally 124o horizontal and 55o vertical. A recommended practical approach is to present photomontages at a 400mm reading distance on 1 x A3 or 2 x A3 pages (i.e. facing A3 pages). The latter covers 120o horizontal field of view. Such panoramas require stitching of individual photos. Lens focal length does not in itself affect perspective . However it is important that the lens and camera is stated to enable correct scale to be calculated. Data on each photomontage should include (i) the photographer (ii) the date and time (iii) the GPS location of viewpoint, ideally shown on a map (iv) the direction of view (v) the camera and lens (vi) the 'reading distance' at which the photomontage will represent correct scale A qualifier should also be added that photomontages are an aid for on-site observations and cannot replicate human experience of the landscape. NZILA Best Practice Guide, Visual Simulations, BPG 10.2 is a thorough and accurate guideline to preparation of photomontages.
ZTV analysis	<p>Zone of Theoretical Visibility is a GIS analysis which identifies the 'visual catchment': the area in which there might be a potential line of sight to a project. While it can be a useful analytical tool for discrete objects (such as a mast), it is less useful for linear features such as roads for the following reasons:</p> <ul style="list-style-type: none"> ZTV identifies locations from which any part of the road, no matter how small a portion, has theoretical visibility, and it doesn't identify the extent of the road visible. ZTVs therefore imply greater magnitude of visibility than is typically the case. ZTVs do not account for screening by intervening vegetation, buildings etc. Visibility of roads typically drops away relatively quickly with increasing distance, particularly in flat or urban landscapes. ZTVs therefore tend to grossly exaggerate the actual visibility. It is possible to include vegetation and buildings into a ZTV by using a LIDAR survey to plot such features, but it is an expensive exercise to do over a wide area. Variations on the tool can be more useful in some situations. For example a ZTV might be relevant for a particular element of the road (a specific cut face, or an interchange). Alternatively the ZTV can be reversed to show the portion of a road theoretically visible from a particular viewpoint.

Earthworks Inventory	<p>An inventory of earthworks is an effective way of analysing landscape effects of civil engineering. As above, append the inventory to the LVA and summarise the findings in the main report.</p> <ul style="list-style-type: none"> Tabulate the earthworks, for instance each of the cut faces and fill batters. This might be broken into route section. Measure length and height of earthworks. Assess effects on landform, vegetation, watercourses etc. Determine visibility and assess visual effects. Propose measures to reduce effects of each group of earthworks <p>Such an inventory can useful in an iterative design process because it focuses design refinement on the 'hotspots'.</p>
Section by Section Analysis	<p>An alternative approach is to divide the route into sensible geographical sections and assess all landscape effects within the section. Submitters, for instance, may be only interested in that section in the vicinity of their properties. As above, append such an inventory to the LVA: The LVA itself is better structured to RMA issues rather than geographical areas.</p> <ul style="list-style-type: none"> Divide route into sensible sections (best if consistent between different disciplines) Describe the relevant section of the project; Assess effects for the section of road.