

Appendix 1: Landscape Effects Assessment Method

26 August 2022

Introduction

The Landscape Effects Assessment (LEA) process provides a framework for assessing and identifying the nature and level of likely effects that may result from a proposed development. Such effects can occur in relation to changes to physical elements, changes in the existing character or condition of the landscape and the associated experiences of such change. In addition, the landscape assessment method includes an iterative design development processes, which seeks to avoid, remedy or mitigate adverse effects (see Figure 1).

This outline of the landscape and visual effects assessment methodology has been undertaken with reference to the **Te Tangi A Te Manu: Aotearoa New Zealand Landscape Assessment Guidelines** and its signposts to examples of best practice, which include the **Quality Planning Landscape Guidance Note**⁶ and the **UK guidelines for landscape and visual impact assessment**⁷.

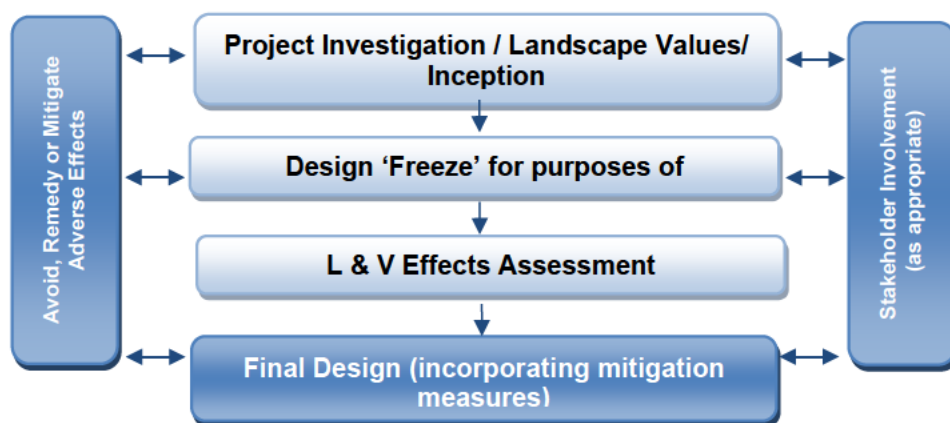


Figure 1: Design feedback loop

When undertaking any landscape assessment, it is important that a **structured and consistent approach** is used to ensure that **findings are clear and objective**. Judgement should be based on skills and experience and be supported by explicit evidence and reasoned argument.

The assessment of the potential effects on landscape considers effects on landscape character and values. The assessment of visual effects considers how changes to the physical landscape affect the viewing audience. The types of effects can be summarised as follows:

Landscape effects: *Change in the physical landscape, which may affect its characteristics*

Visual effects: *Consequences of change on landscape values as experienced in views*

⁶ <http://www.qualityplanning.org.nz/index.php/planning-tools/land/landscape>

⁷ Landscape Institute and Institute of Environmental Management and Assessment (2013) *Guidelines for Landscape and Visual Impact Assessment*, 3rd Edition (GLVIA3)

The policy context, existing landscape resource and locations from which a development or change is visible, all inform the 'baseline' for landscape and visual effects assessments. To assess effects, the first step requires identification of the landscape's **character** and **values** including the **attributes** on which such values depend. This requires that the landscape is first **described**, including an understanding of relevant physical, sensory and associative landscape dimensions. This process, known as landscape characterisation, is the basic tool for understanding landscape character and may involve subdividing the landscape into character areas or types. The condition of the landscape (i.e. the state of an individual area of landscape or landscape feature) should also be described together with, a judgement made on the value or importance of the potentially affected landscape.

Landscape Effects

Assessing landscape effects requires an understanding of the landscape resource and the magnitude of change which results from a proposed activity to determine the overall level of landscape effects.

Landscape Resource

Assessing the sensitivity of the landscape resource considers the key characteristics and qualities. This involves an understanding of both the ability of an area of landscape to absorb change and the value of the landscape.

Ability of an area to absorb change

This will vary upon the following factors:

- Physical elements such as topography / hydrology / soils / vegetation;
- Existing land use;
- The pattern and scale of the landscape;
- Visual enclosure / openness of views and distribution of the viewing audience;
- The zoning of the land and its associated anticipated level of development;
- The scope for mitigation, appropriate to the existing landscape.

The ability of an area of landscape to absorb change takes account of both the attributes of the receiving environment and the characteristics of the proposed development. It considers the ability of a specific type of change occurring without generating adverse effects and/or achievement of landscape planning policies and strategies.

The value of the Landscape

Landscape value derives from the importance that people and communities, including tangata whenua, attach to particular landscapes and landscape attributes. This may include the classification of Outstanding Natural Feature or Landscape (ONFL) (RMA s.6(b)) based on important physical, sensory and associative landscape attributes, which have potential to be affected by a proposed development. A landscape can have value even if it is not recognised as being an ONFL.

Magnitude of Landscape Change

The magnitude of landscape change judges the amount of change that is likely to occur to areas of landscape, landscape features, or key landscape attributes. In undertaking this assessment, it is important that the size or scale of the change is considered within the geographical extent of the area influenced and the duration of change, including whether the change is reversible. In some situations, the loss /change or enhancement to existing landscape elements such as vegetation or earthworks should also be quantified.

When assessing the level of landscape effects, it is important to be clear about what factors have been considered when making professional judgements. This can include consideration of any benefits which result from a proposed development. **Table 1** below helps to explain this process. The tabulating of effects is only intended to inform overall judgements.

Contributing Factors		Higher	Lower
Landscape (sensitivity)	Ability to absorb change	The landscape context has limited existing landscape detractors which make it highly vulnerable to the type of change resulting from the proposed development.	The landscape context has many detractors and can easily accommodate the proposed development without undue consequences to landscape character.
	The value of the landscape	The landscape includes important biophysical, sensory and shared and recognised attributes. The landscape requires protection as a matter of national importance (ONF/L).	The landscape lacks any important biophysical, sensory or shared and recognised attributes. The landscape is of low or local importance.
Magnitude of Change	Size or scale	Total loss or addition of key features or elements. Major changes in the key characteristics of the landscape, including significant aesthetic or perceptual elements.	The majority of key features or elements are retained. Key characteristics of the landscape remain intact with limited aesthetic or perceptual change apparent.
	Geographical extent	Wider landscape scale.	Site scale, immediate setting.
	Duration and reversibility	Permanent. Long term (over 10 years).	Reversible. Short Term (0-5 years).

Table 1: Determining the level of landscape effects

Visual Effects

Visual effects are a subset of landscape effects. They are consequences of change on landscape values as experienced in views. To assess the visual effects of a proposed development in a landscape, a visual baseline must first be defined. The visual 'baseline' forms a technical exercise which identifies the area where the development may be visible, the potential viewing audience, and the key representative public viewpoints from which visual effects are assessed.

Zone of Theoretical Visibility

As an initial step in the visual analysis, a Zone of Theoretical Visibility (ZTV) mapping exercise was undertaken of the site in its context to determine the likely extent of visibility in the wider landscape. ZTV mapping represents the area that a development may theoretically be seen - that is, it may not actually be visible in reality due to localised screening from intervening vegetation, buildings or other structures. In addition, TV mapping does not convey the nature or magnitude of visual impacts, for example whether visibility will result in positive or negative effects and whether these will be significant

'Zone of Theoretical Visibility' (ZTV) is based on a Digital Terrain Model (DTM) overlaid on a map base. It is also known as a Zone of Visual Influence (ZVI), Visual Envelope Map (VEM) or Viewshed Map. The term ZTV is preferred for its emphasis of two key factors that are often misunderstood:

- Visibility maps represent where a development may be seen theoretically – that is, it may not actually be visible in reality, for example due to localised screening from intervening vegetation, buildings or other structures which is not represented by the DTM; and
- the maps indicate potential visibility only – that is, the areas within which there may be a line of sight. They do not convey the nature or magnitude of visual impacts, for example whether visibility will result in positive or negative effects and whether these will be significant or not.

ZTVs are calculated by computer, using any one of a number of available software packages and based upon a DTM that represents topography. The resulting ZTV is usually produced as an overlay upon a base map, representing theoretical visibility within a defined study area.

As the ZTV mapping is based entirely on 'bare ground' topographic data, it does not take into account the screening, unless LIDAR based vegetation data is used to generate the DTM. In addition, the level of reliability of the contour information will influence the accuracy of the mapping. ZTV mapping does however take into account factors relating to the curvature of the earth and light refraction. ZTV is helpful where to focus field work but it should be remembered that while ZTV is a

useful assessment tool, is important to recognise its limitations.

Following the ZTV analysis, field work is used to determine the actual extent of visibility of the site, including the selection of representative viewpoints from public areas. This stage is also used to identify the potential 'viewing audience' e.g. residential, visitors, recreation users, and other groups of viewers who can see the site. During fieldwork, photographs are taken to represent views from available viewing audiences.

The viewing audience comprises the individuals or groups of people occupying or using the properties, roads, footpaths and public open spaces that lie within the visual envelope or 'zone of theoretical visibility (ZTV)' of the site and proposal. Where possible, computer modelling can assist to determine the theoretical extent of visibility together with field work to confirm this. Where appropriate, key representative viewpoints should be agreed with the relevant local authority.

The Sensitivity of the viewing audience

The sensitivity of the viewing audience is assessed in terms of assessing the likely response of the viewing audience to change and understanding the value attached to views.

Likely response of the viewing audience to change

Appraising the likely response of the viewing audience to change is determined by assessing the occupation or activity of people experiencing the view at particular locations and the extent to which their interest or activity may be focussed on views of the surrounding landscape. This relies on a landscape architect's judgement in respect of visual amenity and the reaction of people who may be affected by a proposal. This should also recognise that people more susceptible to change generally include: residents at home, people engaged in outdoor recreation whose attention or interest is likely to be focussed on the landscape and on particular views; visitors to heritage assets or other important visitor attractions; and communities where views contribute to the wider landscape setting.

Value attached to views

The value or importance attached to particular views may be determined with respect to its popularity or numbers of people affected or reference to planning instruments such as viewshafts or view corridors. Important viewpoints are also likely to appear in guide books or tourist maps and may include facilities provided for its enjoyment. There may also be references to this in literature or art, which also acknowledge a level of recognition and importance.

Magnitude of Visual Change

The assessment of visual effects also considers the potential magnitude of change which will result from views of a proposed development. This takes account of the size or scale of the effect, the geographical extent of views and the duration of visual change, which may distinguish between temporary (often associated with construction) and permanent effects where relevant. Preparation of any simulations of visual change to assist this process should be guided by best practice as identified by the NZILA⁸.

When determining the overall level of visual effect, the nature of the viewing audience is considered together with the magnitude of change resulting from the proposed development. **Table 4** has been prepared to help guide this process:

Contributing Factors		Higher	Lower	Examples
The Viewing Audience	Ability to absorb change	Views from dwellings and recreation areas where attention is typically focussed on the landscape.	Views from places of employment and other places where the focus is typically incidental to its landscape context. Views from transport corridors.	Dwellings, places of work, transport corridors, public tracks

⁸ Best Practice Guide: Visual Simulations BPG 10.2, NZILA

Contributing Factors		Higher	Lower	Examples
	Value attached to views	Viewpoint is recognised by the community such as an important view shaft, identification on tourist maps or in art and literature. High visitor numbers.	Viewpoint is not typically recognised or valued by the community. Infrequent visitor numbers.	Acknowledged viewshafts, Lookouts
Magnitude of Change	Size or scale	Loss or addition of key features in the view. High degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Full view of the proposed development.	Most key features of views retained. Low degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Glimpse / no view of the proposed development.	- Higher contrast/ Lower contrast. - Open views, Partial views, Glimpse views (or filtered); No views (or obscured)
	Geographic extent	Front on views. Near distance views; Change visible across a wide area.	Oblique views. Long distance views. Small portion of change visible.	- Front or Oblique views. - Near distant, Middle distant and Long distant views
	Duration and reversibility	Permanent. Long term (over 15 years).	Transient / temporary. Short Term (0-5 years).	- Permanent (fixed), Transitory (moving)

Table 2: Determining the level of visual effects

Nature of Effects

In combination with assessing the level of effects, the landscape and visual effects assessment also considers the nature of effects in terms of whether this will be positive (beneficial) or negative (adverse) in the context within which it occurs. Neutral effects can also occur where landscape or visual change is benign.

It should also be noted that a change in a landscape does not, of itself, necessarily constitute an adverse landscape or visual effect. Landscape is dynamic and is constantly changing over time in both subtle and more dramatic transformational ways; these changes are both natural and human induced. What is important in managing landscape change is that adverse effects are avoided or sufficiently mitigated to ameliorate the effects of the change in land use. The aim is to provide a high amenity environment through appropriate design outcomes.

This assessment of the nature effects can be further guided by Table 2 set out below:

Nature of effect	Use and Definition
Adverse (negative):	The activity would be out of scale with the landscape or at odds with the local pattern and landform which results in a reduction in landscape and / or visual amenity values
Neutral (benign):	The activity would be consistent with (or blend in with) the scale, landform and pattern of the landscape maintaining existing landscape and / or visual amenity values
Beneficial (positive):	The activity would enhance the landscape and / or visual amenity through removal or restoration of existing degraded landscape activities and / or addition of positive elements or features

Table 1: Determining the Nature of Effects

Cumulative Effects

This can include effects of the same type of development (e.g. bridges) or the combined effect of all past, present and approved future development⁹ of varying types, taking account of both the permitted baseline and receiving environment. Cumulative effects can also be positive, negative or benign.

Cumulative Landscape Effects

Cumulative landscape effects can include additional or combined changes in components of the landscape and changes in the overall landscape character. The extent within which cumulative landscape effects are assessed can cover the entire landscape character area within which the proposal is located, or alternatively, the zone of visual influence from which the proposal can be observed.

⁹ The life of the statutory planning document or unimplemented resource consents.

Cumulative Visual Effects

Cumulative visual effects can occur in combination (seen together in the same view), in succession (where the observer needs to turn their head) or sequentially (with a time lapse between instances where proposals are visible when moving through a landscape). Further visualisations may be required to indicate the change in view compared with the appearance of the project on its own.

Determining the nature and level of cumulative landscape and visual effects should adopt the same approach as the project assessment in describing both the nature of the viewing audience and magnitude of change leading to a final judgement. Mitigation may require broader consideration which may extend beyond the geographical extent of the project being assessed.

Determining the Overall Level of Effects

The landscape and visual effects assessment conclude with an overall assessment of the likely level of landscape and visual effects. This step also takes account of the nature of effects and the effectiveness of any proposed mitigation. The process can be illustrated in Figure 2:



Figure 2: Assessment process

This step informs an overall judgement identifying what level of effects are likely to be generated as indicated in Table 3 below. This table which can be used to guide the level of landscape and visual effects uses an adapted seven-point scale derived from Te Tangi A Te Manu.

Effect Rating	Use and Definition
Very High:	Total loss of key elements / features / characteristics, i.e. amounts to a complete change of landscape character and in views.
High:	Major modification or loss of most key elements / features / characteristics, i.e. little of the pre-development landscape character remains and a major change in views. <u>Concise Oxford English Dictionary Definition</u> <i>High: adjective- Great in amount, value, size, or intensity.</i>
Moderate- High:	Modifications of several key elements / features / characteristics of the baseline, i.e. the pre-development landscape character remains evident but materially changed and prominent in views.
Moderate:	Partial loss of or modification to key elements / features / characteristics of the baseline, i.e. new elements may be prominent in views but not necessarily uncharacteristic within the receiving landscape. <u>Concise Oxford English Dictionary Definition</u> <i>Moderate: adjective- average in amount, intensity, quality or degree</i>
Low – Moderate:	Minor loss of or modification to one or more key elements / features / characteristics, i.e. new elements are not prominent within views or uncharacteristic within the receiving landscape.
Low:	Little material loss of or modification to key elements / features / characteristics. i.e. modification or change is not uncharacteristic or prominent in views and absorbed within the receiving landscape. <u>Concise Oxford English Dictionary Definition</u> <i>Low: adjective- 1. Below average in amount, extent, or intensity.</i>
Very Low:	Negligible loss of or modification to key elements/ features/ characteristics of the baseline, i.e. approximating a 'no change' situation and a negligible change in views.

Table 3: Determining the overall level of landscape and visual effects

Determination of “minor”

Decision makers determining whether a resource consent application should be notified must also assess whether the effect on a person is less than minor¹⁰ or an adverse effect on the environment is no more than minor¹¹. Likewise, when assessing a non-complying activity, consent can only be granted if the s104D 'gateway test' is satisfied. This test requires the decision maker to be assured that the adverse effects of the activity on the environment will be 'minor' or not be contrary to the objectives and policies of the relevant planning documents.

These assessments will generally involve a broader consideration of the effects of the activity, beyond the landscape and visual effects. Through this broader consideration, guidance may be sought on whether the likely effects on the landscape or effects on a person are considered in relation to 'minor'. It must also be stressed that more than minor effects on individual elements or viewpoints does not necessarily equate to more than minor landscape effects. In relation to this assessment, moderate-low level effects would generally equate to 'minor' (see **Table 4**). Where low effects occur, it may be necessary to assess whether this is minor.

The third row highlights the word 'significant'. The term 'significant adverse effects' applies to particular RMA situations, namely as a threshold for the requirement to consider alternative sites, routes, and methods for Notices of Requirement under RMA s171(1)(b), the requirements to consider alternatives in AEEs under s6(1)(a) of the 4th Schedule. It may also be relevant to tests under other statutory documents such as for considering effects on natural character of the coastal environment under the NZ Coastal Policy Statement (NZCPS) Policy 13 (1)(b) and 15(b).

very low	low	low-mod	moderate	mod-high	high	very high
less than minor		minor	more than minor			
						significant ¹²

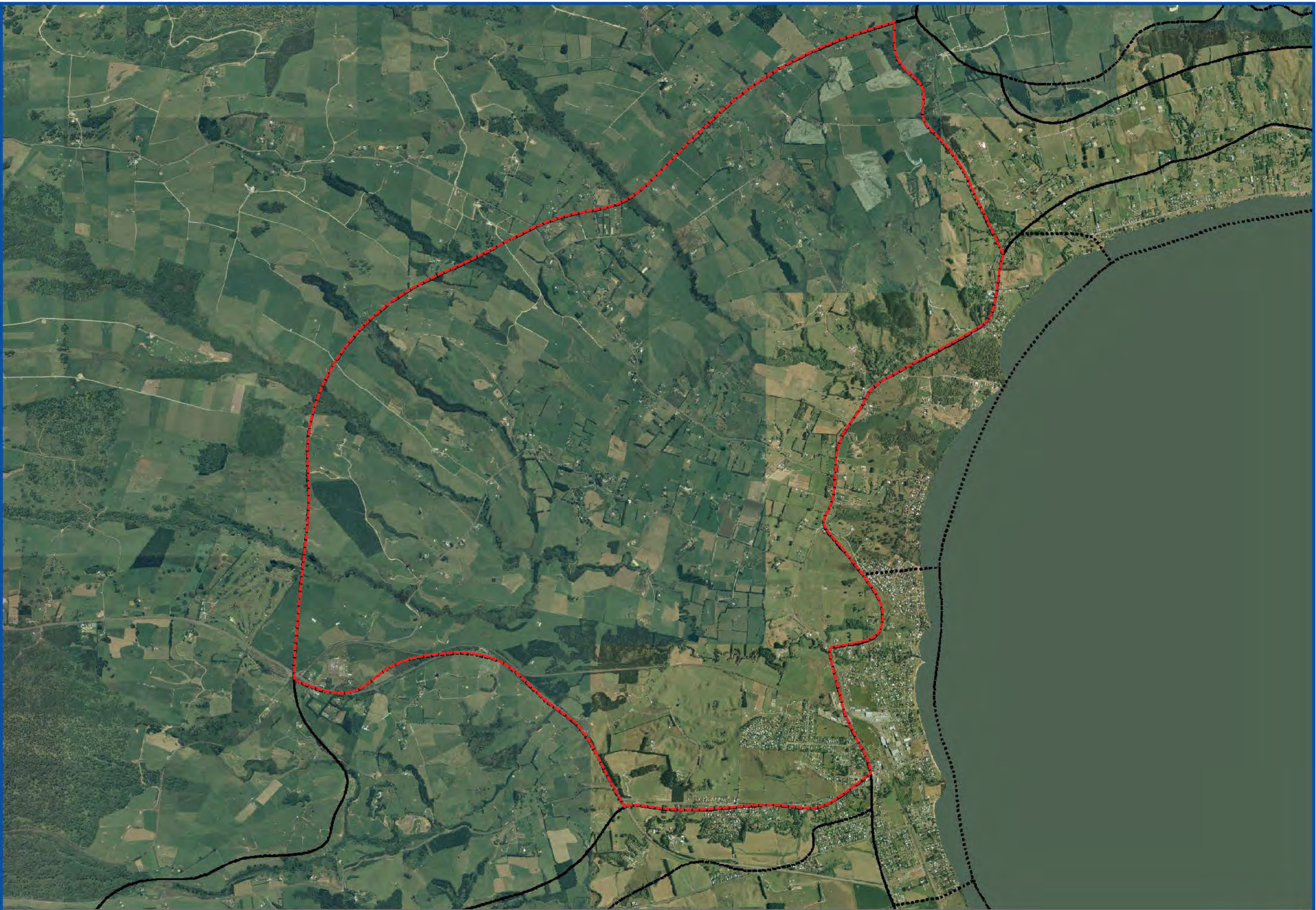
Table 4: Determining adverse effects for notification determination, non-complying activities and significance

¹⁰ RMA, Section 95E

¹¹ RMA Section 95D

¹² To be used only about Policy 13(1)(b) and Policy 15(b) of the New Zealand Coastal Policy Statement (NZCPS), where the test is 'to avoid significant adverse effects'.

Appendix 2: Extract of Rotorua Landscape Assessment, Boffa Miskell, 2010



Lower Plateau Slopes



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DISCLAIMER: While every effort has been made to ensure that the information provided on this map is accurate, correct and otherwise adequate in all respects, Boffa Miskell Limited does not accept any responsibility or liability for any errors or omissions, and the user of this map.

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24.0 WESTERN RURAL

Landscape Character Area 24.2: Lower Plateau Slopes

Area Defined by:

- Geological boundaries between unconsolidated material in the east and harder volcanic parent material in the west and northwest
- Hauraki Stream in the north
- SH 5 and Western Road in the south
- Rotorua Lake and margin areas in the east

Area Characterised by:

- Rolling to moderately steep land Class 6 dominant with significant areas of Class 3 and 4 all with erosion subclass limitations and featuring a series of moderately steep, steep and very steep drainage systems associated with the principal Mamaku plateau streams that drain to Lake Rotorua.
- The variety in topography reflects the underlying parent material that features all base rock types found within the study area (see Map 5 Appendix 1). Underlying base rock older than Taupo pumice and unconsolidated tephra are the dominant types. These weaker materials are prone to erosion/dissection resulting in characteristic tightly rolling terrain.
- Land cover is dominated by pastoral land uses and includes patterns of rural residential living related to principal roading and access patterns.
- Land cover includes small isolated patches of indigenous vegetation and partially vegetated stream corridors (RAPs - see Map 14 Appendix 1) that relate to the Komutumutu, Waiteti and Awahou Stream systems and small areas of production forestry.
- Seven archaeological sites located in proximity to Waiteti Stream.

Local Character Areas:

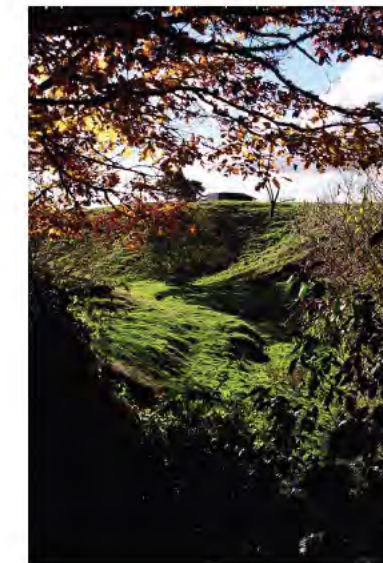
- Rural lifestyle corridors
- Rural pastoral

Landscape Management Issues:

- Accommodation of rural residential growth in relation to landscape values / amenity.
- Landscape change and loss of rural character.
- Siting, spacing, access, and built form of buildings in relation to existing topographic features and vegetation patterns including the application of low impact design principles in relation to water quality, earthworks and stormwater management.
- Riparian management and protection of streams in alignment with Rotorua Lakes Protection and Restoration Action Programme including slope stabilisation of Class 7 and 8 steep stream gullies.
- Securing reserve and open space linkages.



24.2





Rotorua Caldera Rim

Caldera Rim Rural Character Design Guideline

October 2012





Prepared by Boffa Miskell Ltd, Tauranga

For: Rotorua District Council

Date: 19th October 2012

Issue: Revision 1

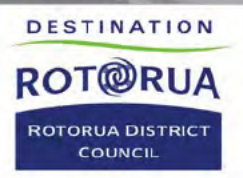
Status: Final

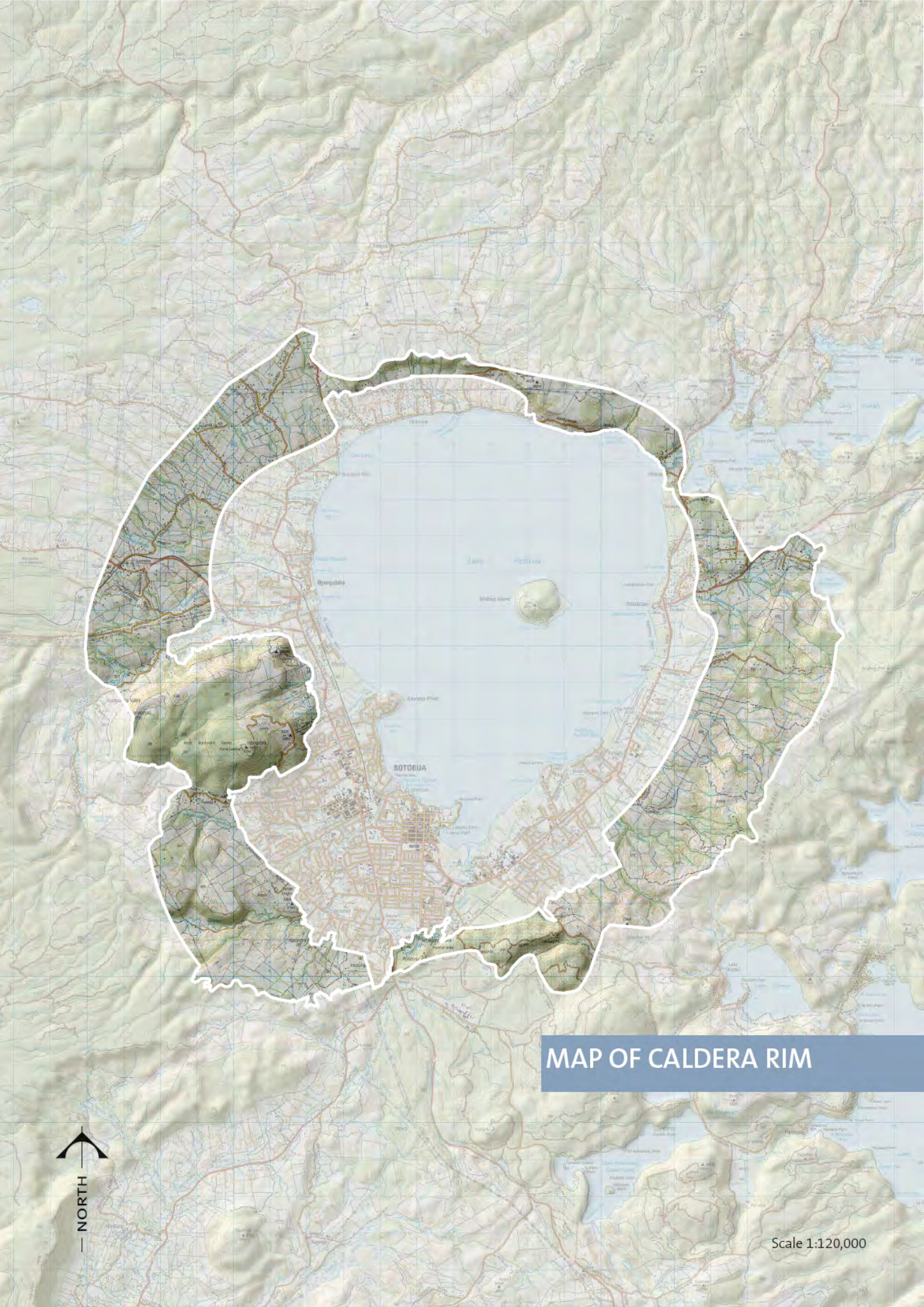
Cover Photograph: Lake Rotorua Caldera, taken from Mt Ngongotaha, May 2012

BML Document Reference: T11077

Rotorua Caldera Rim

Caldera Rim Rural Character Design Guideline
October 2012





MAP OF CALDERA RIM

Scale 1:120,000

Sensitive Rural Areas

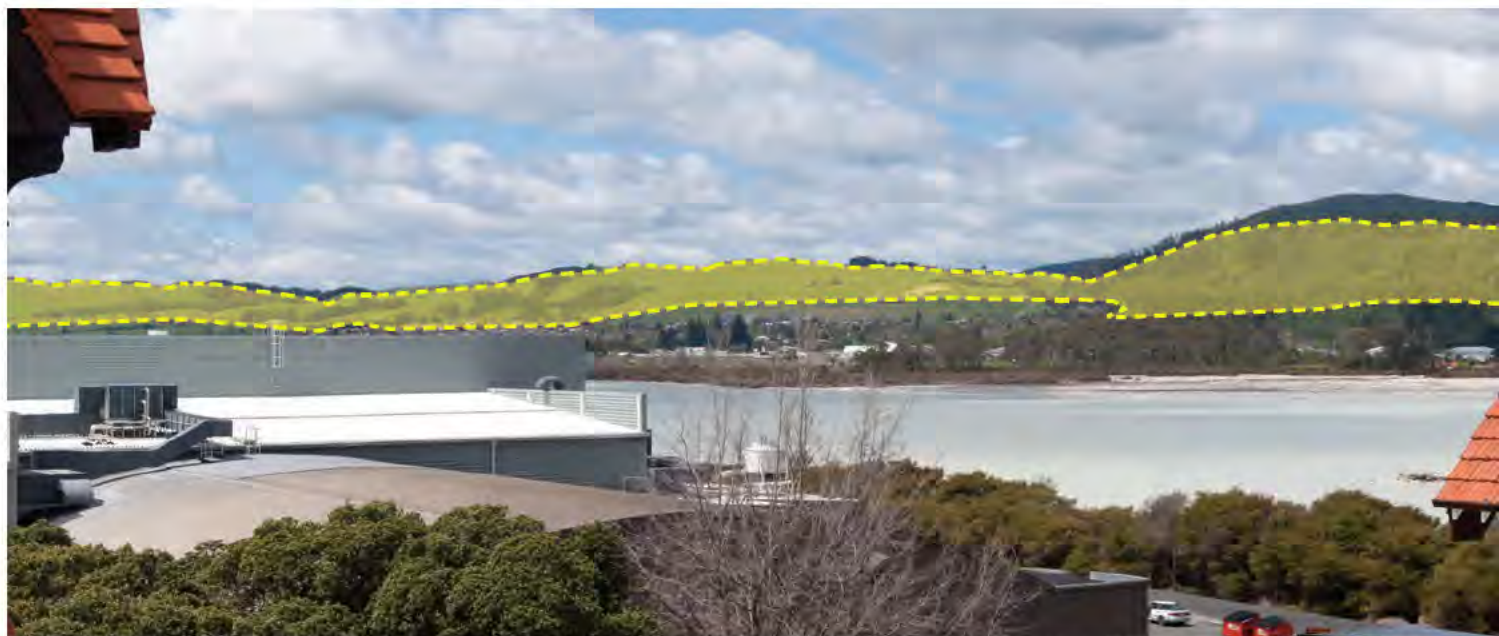
Areas where the rural landscape is highly sensitive to landscape change have been mapped as part of the identification of the Outstanding Natural Features and Landscapes (ONFLs), within the June 2010 Landscape Study. Development in these areas require further consideration of the assessment criteria set out in the Regional Policy Statement and in turn the Rotorua District Plan.

The identification of the Rotorua Caldera Rim as a separate landscape area denotes the importance of this landform has to the District. The elevated position of the Caldera, its landform and representativeness of the volcanic geomorphology is an important component of Rotorua's landscape character.

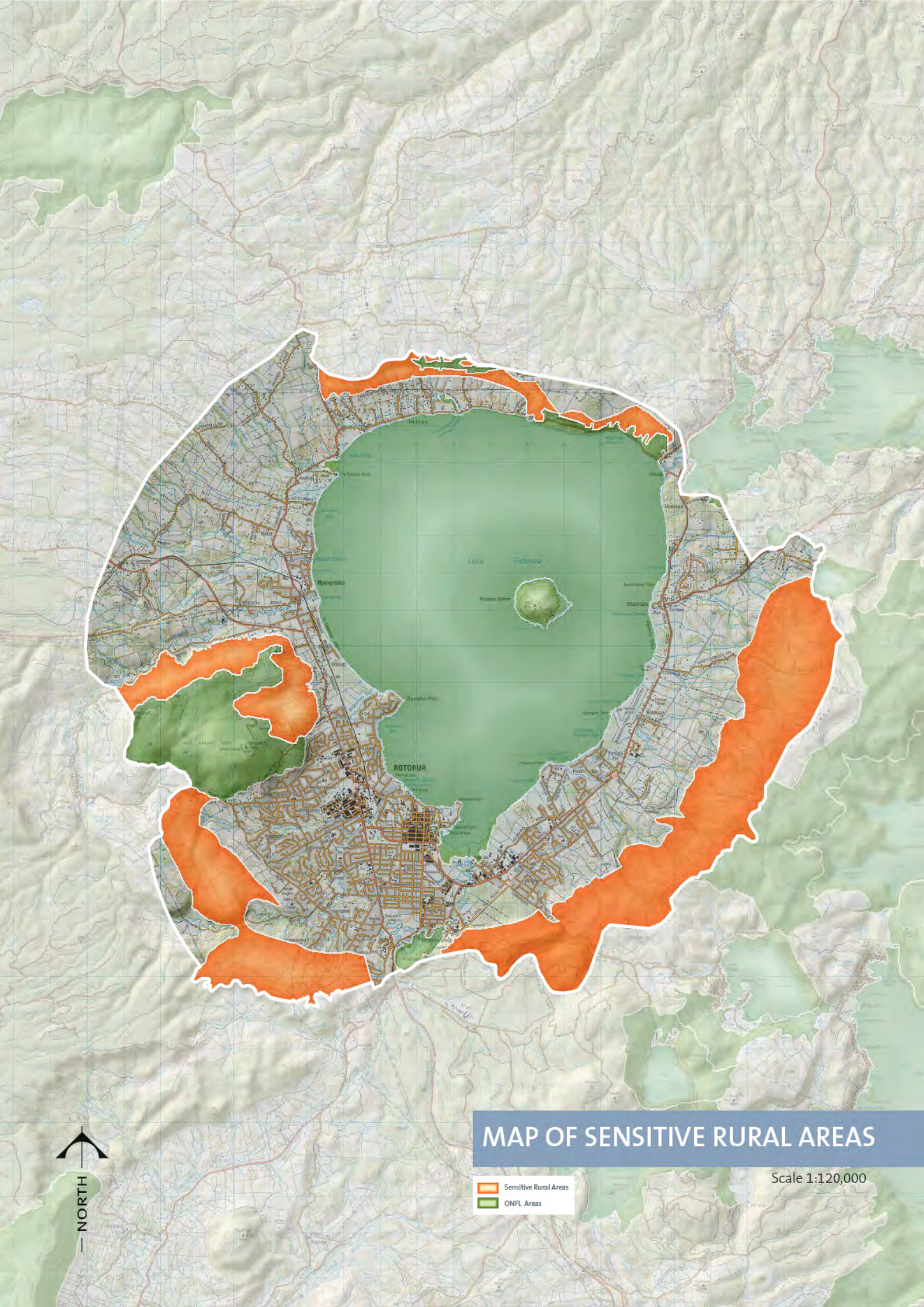
The rural landscape of the Caldera Rim varies around Lake Rotorua, but it is largely within pasture with pocketed areas of rural residential subdivision. The Caldera Rim varies in landform and landcover, with the lower less steep slopes of the Caldera Rim containing more extensive vegetation cover, including forestry. The steeper slopes, conversely, are largely void of significant vegetation cover.

Identification of the prominent and highly visible parts of the Caldera Rim has resulted in the mapping of four Sensitive Rural Areas. They are representative of the natural patterns and processes which have shaped the land. They are largely void of built form and the landform dominates the skyline. They contribute strongly to the character and amenity of the rural landscape of the Rotorua Caldera.

The Design Guideline outlines the key methods for management of change in these sensitive landscapes. Similarly these methods can be used in other areas of the rural landscape within the Caldera.



Sensitive Rural Area - View looking east toward Lynmore



MAP OF SENSITIVE RURAL AREAS

Scale 1:120,000

- Sensitive Rural Areas
- ONFL Areas



Less Sensitive Rural Areas

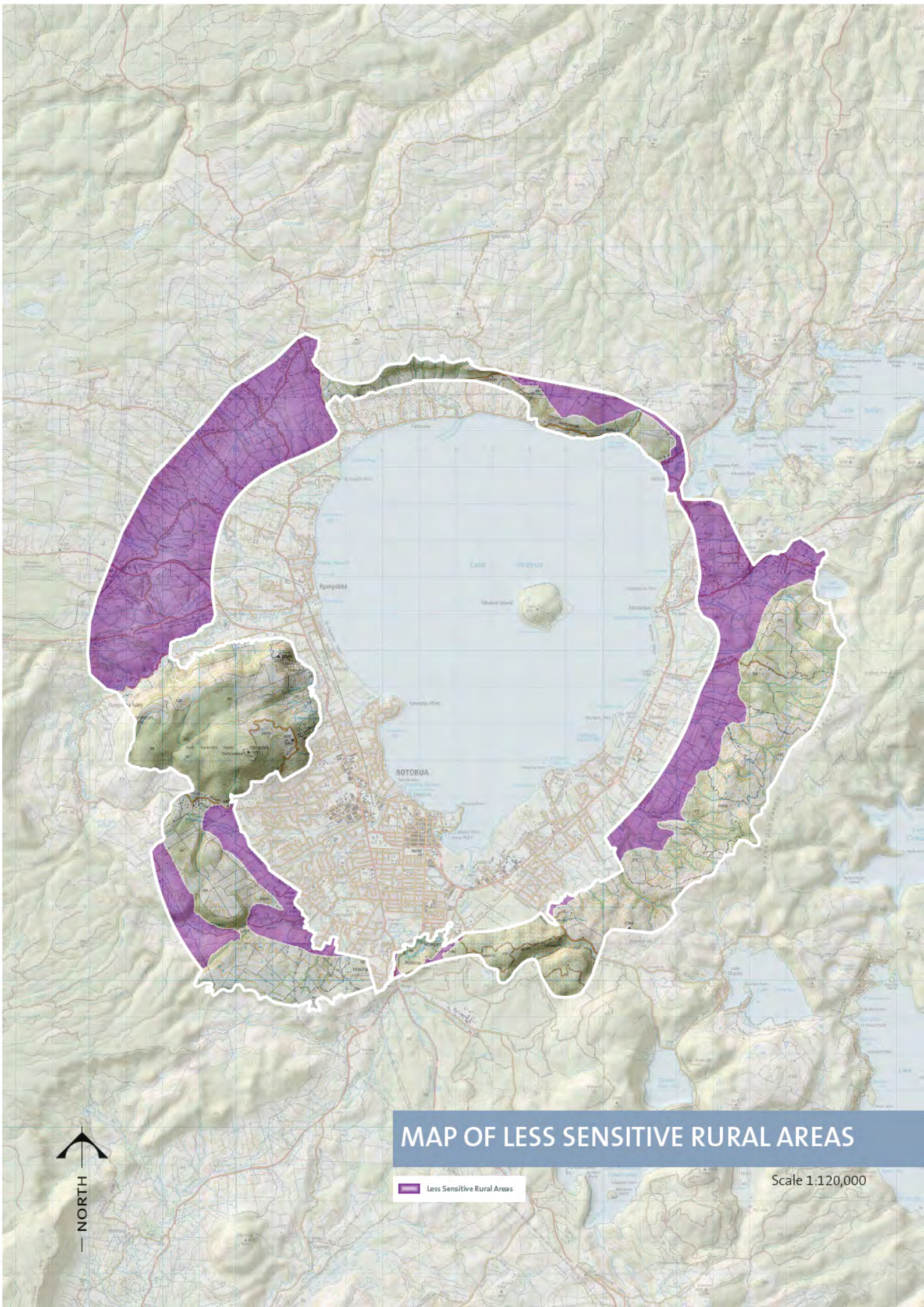
The remaining areas sited outside those identified Sensitive Rural Areas are considered to still contain rural character and amenity values.

Rural amenity is still considered important, however these areas have a greater ability to accommodate change due to a number of factors:

- Low foothills that are undulating with a number of low lying ridgelines and valleys.
- Existing native and exotic vegetation cover.
- Areas less visible from wider public viewpoints.

These areas form part of the Caldera Rim and are important as part of the continuous rural landscape. Rural amenity continues to be considered for these areas through District Plan provisions. However the extent of controls in place are not as detailed as those with identified Sensitive Rural Areas.





MAP OF LESS SENSITIVE RURAL AREAS

 Less Sensitive Rural Areas

Scale 1:120,000

Case Study: Pukehangi Sensitive Rural Area

Within each of the Sensitive Rural Areas ('SRA') there are subtleties of landform and vegetation patterns that contribute to the prominence and, conversely, screening of features.

An example of these subtleties can be seen within the Pukehangi Sensitive Rural Area, where the slope analysis identifies unique variations in landform. The steeper slopes, identified as blue and purple, are areas where access becomes difficult to naturally achieve and building upon these slopes often results in prominent structures.

Within these sensitive landscapes the gully and their steep slopes can be utilised for native vegetation cover. This can reinforce the natural patterns of the landform and assist to integrate built form into the landscape.

A detailed slope analysis of the Pukehangi Sensitive Rural Area shows there are some gullies and escarpments which can be utilised. However this analysis shows that the key main gullies are orientated away from the main viewing catchment of Rotorua City and Lake Rotorua,

The lower slopes of the Pukehangi SRA have capability to incorporate vegetation cover which can provide a backdrop to built development at the very eastern edge of the slope. This may provide further ability for the lower slopes to accommodate built development greater than expected within a Rural Zone, however specific analysis of all landscape factors would be required with any proposal.

The visibility and connectivity of this feature is important to the recognition of the Rotorua Caldera Rim. The mid and upper slopes and terraces of this part of the Caldera Rim provide a prominent and contiguous backdrop to Rotorua City. This area is representative of the Caldera Rim and is visually prominent. The rural character and amenity of this landscape contributes positively to the wider Rotorua Caldera landscape.

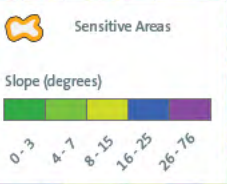


Sensitive Rural Area - View looking west toward Pukehangi



PUKEHANGI 'SRA' - SLOPE ANALYSIS

Scale 1:35,000



Proposed Residential Areas

As part of the preparation of the Proposed District Plan a number of proposals have been proffered. These include Residential and Rural development.

Some of these particular proposals are sited within the identified Sensitive Rural Areas. Areas which contribute to the rural amenity of the Rotorua Caldera and are landforms strongly representative of the Caldera Rim's geomorphology. The Sensitive Rural Areas are not considered Outstanding Natural Features or Landscapes. However the key objective in managing these particular landscape areas is the maintenance of rural amenity and rural character.

The qualities, attributes and values of these landscape features have been identified and design methods for appropriate development in these areas proposed. There are four areas where the proposed development may extend into the identified Sensitive Rural Areas:

1. Pukehangi Road extension
2. South of State Highway 33
3. The area to the east of Iles Road
4. Hamurana, adjoining an existing residential settlement.

1. Pukehangi Road Extension

The landform provides a rural backdrop to the urban subdivision and Pukehangi Road forms the zone boundary. This area is highly visible and the open rural character accentuates the natural landform and geomorphology of the Caldera Rim. This area also connects visually to Mount Ngongotaha reinforcing the Caldera Rim as a feature.

There are two prominent terraces within this Sensitive Rural Area. The lower terraces having more visual connection to the urban residential development. It is a long wide terrace that visually dominates this part of the Caldera Rim with the upper terrace forming the top third of the Caldera Rim.

Development in this area should take into account the rural character and amenity values. Density within this area should be in keeping with the rural amenity values and protect the Caldera ridgeline from built development. The lower slopes of this area have some ability to create connections with surrounding residential development, however above the RL385 contour the rural character of the site should be maintained.

2. South of State Highway 33

This area has been identified as being part of the Caldera Rim and the lower rural plains between the Caldera Rim and lake edge. The proposed development area traverses both the Sensitive Rural Area and Less Sensitive Rural Areas. Development in this area would still require consideration of the rural amenity through application of the guidelines. The visual prominence of the Less Sensitive Areas on the wider Rotorua visual catchment is diminished due to the undulating landform and intensive land cover found throughout the area.

The upper extent of the proposed development area is located within the Sensitive Rural Area. Development in this area is considered highly sensitive and must take into account maintenance of the low density, open space, and existing built development patterns. The landform and geomorphology of this area is very important to the rural character and should be maintained when considering future development.

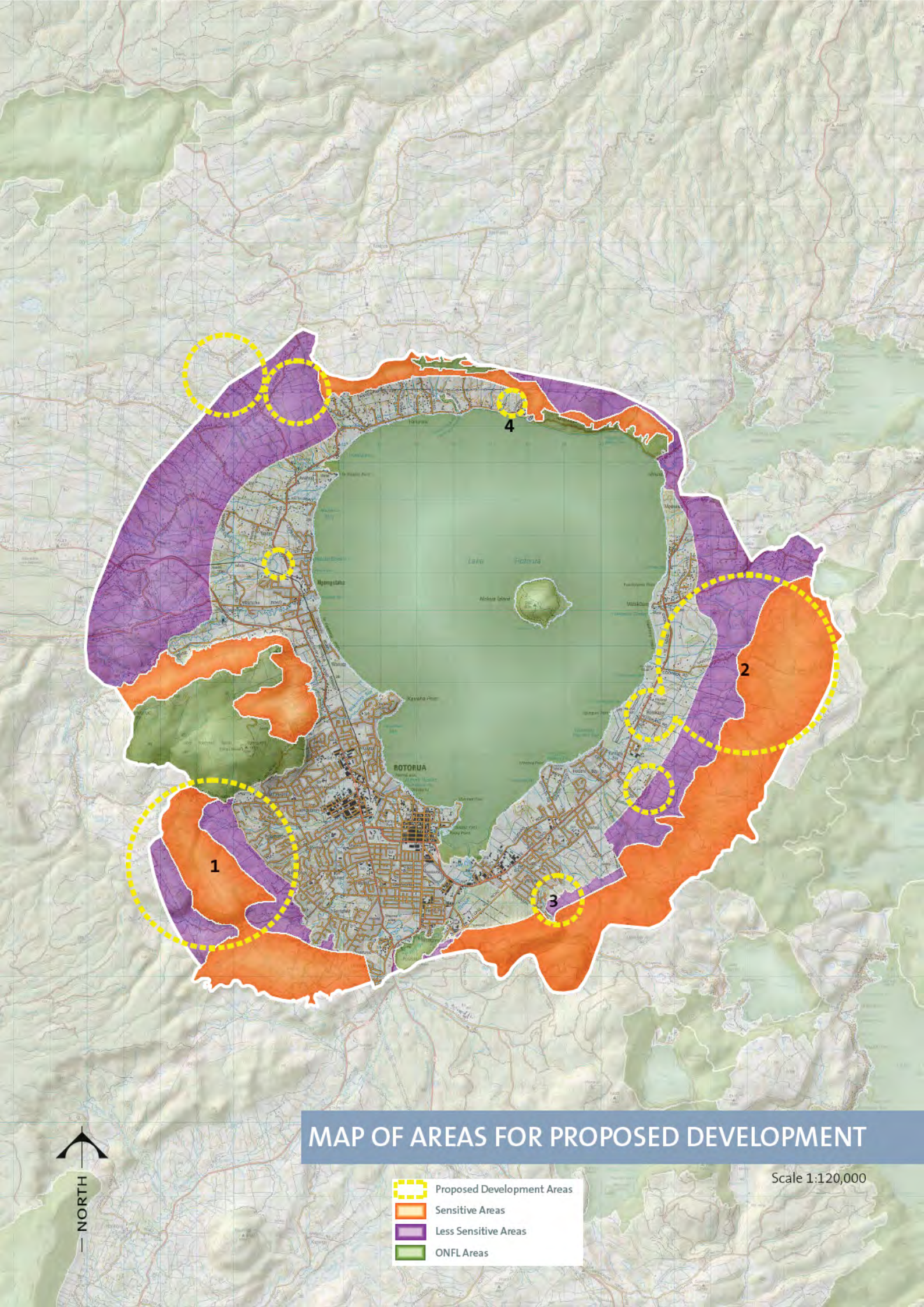
3. Area to the East of Iles Road.

This area is located in a visually prominent rural site with open pastoral rural character. The landform steeply rises above the urban development and forms a dominant rural backdrop to Rotorua city. The landform is representative of the natural processes which formed it and the land use further accentuates these patterns.

There are a series of terraces immediately behind the Iles Road area which create a number of plateau. These areas are connected to the wider rural landscape and any development in these areas should consider the highly sensitive nature of this landscape. Adjoining this area, Tarawera Road creates a gateway between the Lakes A Zone and Rotorua town. Views from this road down across Lake Rotorua are significant and dramatic. Development should be low key in nature and responsive to the dominant rural amenity values of this area.

4. Hamurana Rural Residential Extension

This area adjoins an existing rural residential development along the Lake edge. It is located outside the Caldera Rim Sensitive Rural Area. Rural Residential Development is dominant in this area and is bounded by the change in landform. Development should be responsive to the rural amenity values and the natural patterns of this landscape.



MAP OF AREAS FOR PROPOSED DEVELOPMENT

Scale 1:120,000

-  Proposed Development Areas
-  Sensitive Areas
-  Less Sensitive Areas
-  ONFL Areas

Appendix 3: Landscape Analysis



MILBROW ESTATE

MCFETRIDGE DRIVE SUBDIVISION, HAMURANA

FEBRUARY 2022

REV -



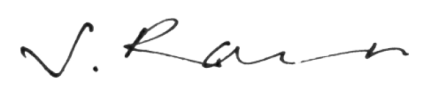
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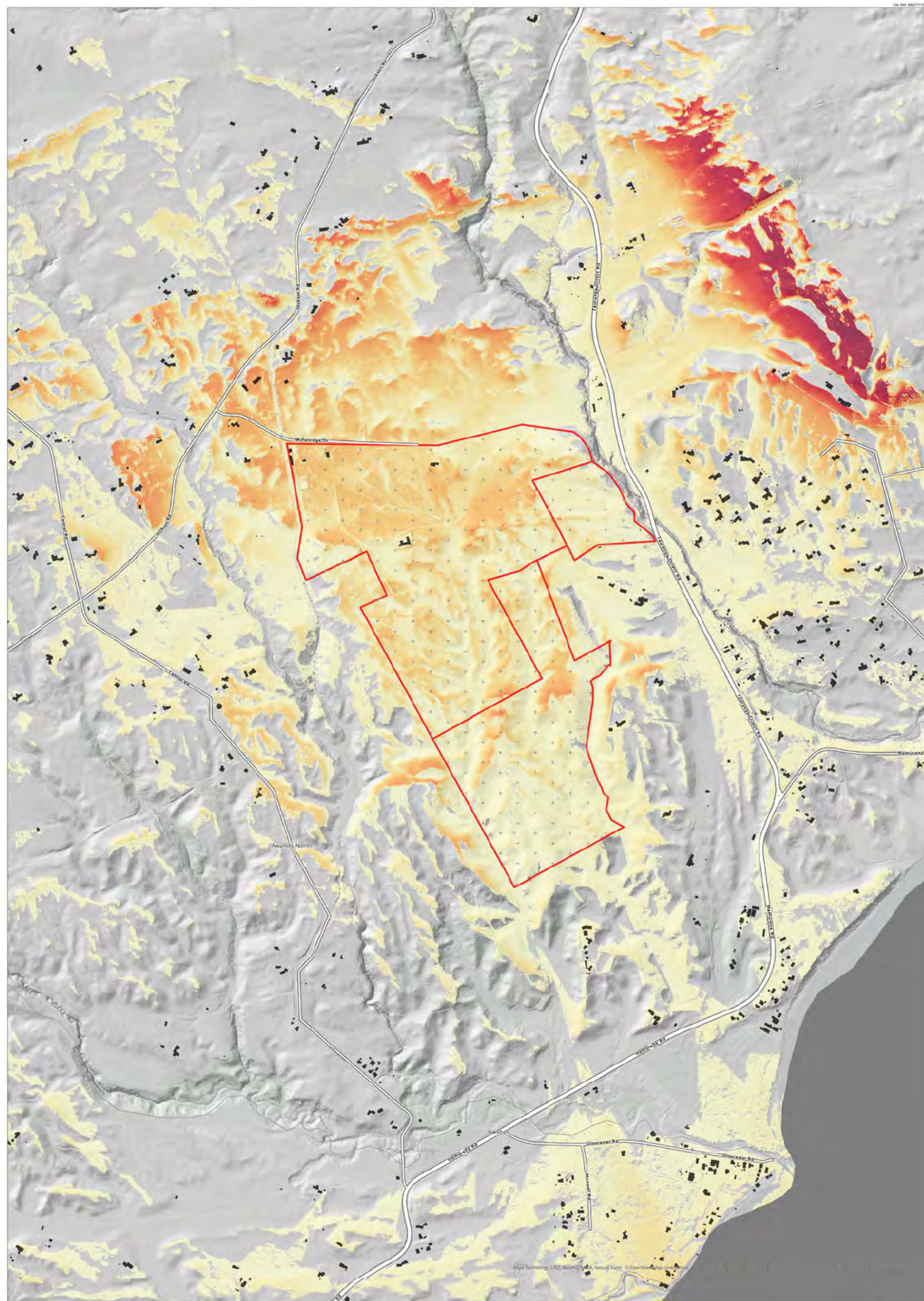
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INTERVISIBILITY



▬ Site Parcels
 ▬ LINZ NZ Building Outlines

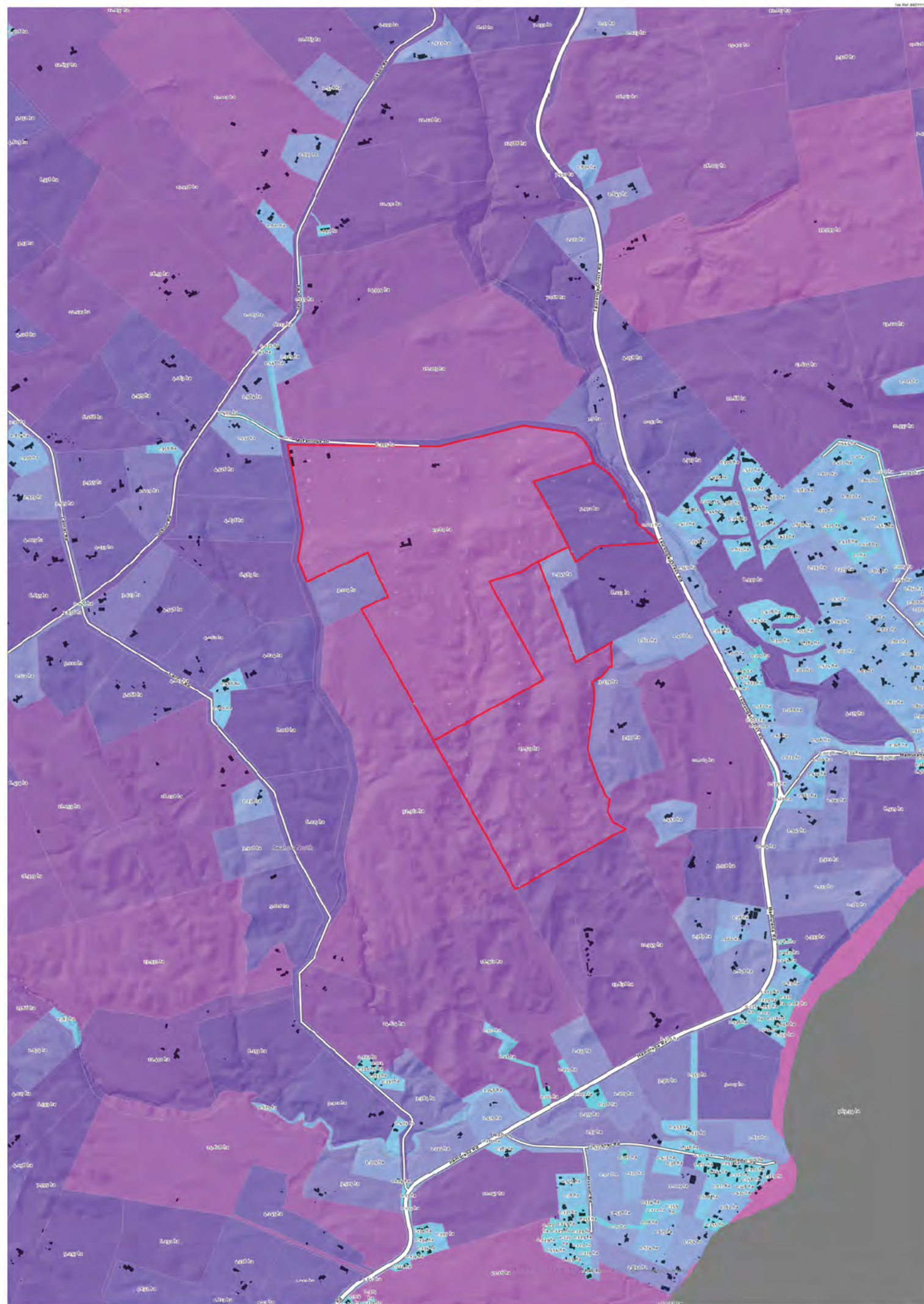
Viewshe_RawD1

Value

▬ 154 Observers
▬ 1



BUILT ENVIRONMENT/ EXISTING LOT SIZES



LEGEND

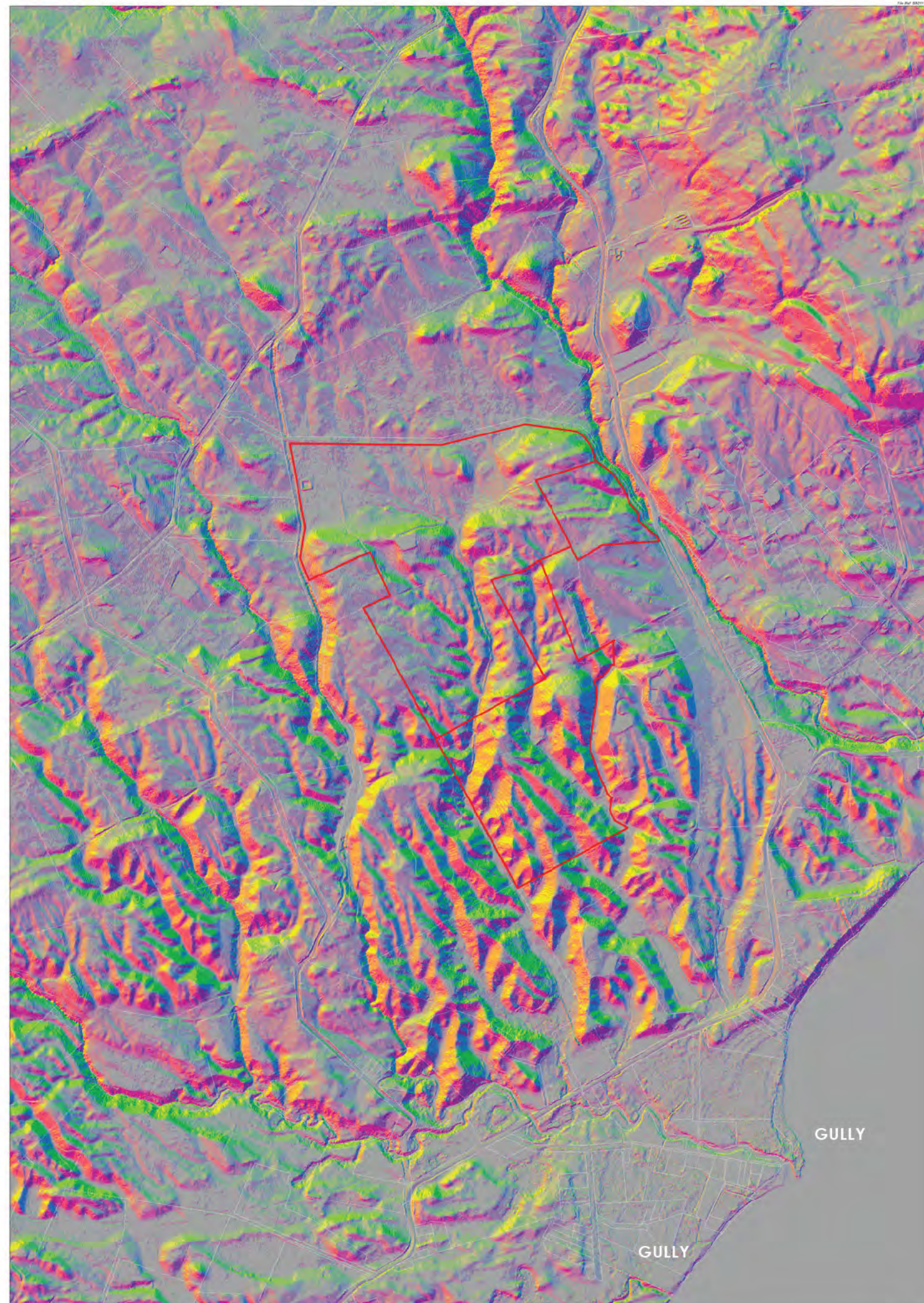
■ Site Parcels	■ 6,254 ha - 11,348 ha	■ 136,365 ha - 200,641 ha
■ LINZ NZ Building Outlines	■ 11,349 ha - 17,714 ha	■ 200,642 ha - 329,610 ha
Parcel Area	■ 17,715 ha - 26,478 ha	■ 329,611 ha - 498,405 ha
■ 4 ha - 935 ha	■ 26,479 ha - 36,999 ha	■ 498,406 ha - 946,324 ha
■ 936 ha - 2,923 ha	■ 37,000 ha - 59,009 ha	■ 946,325 ha - 2,058,671 ha
■ 2,924 ha - 6,253 ha	■ 59,010 ha - 93,300 ha	■ 2,058,672 ha - 9,693,397 ha
	■ 93,301 ha - 136,364 ha	



ELEVATION



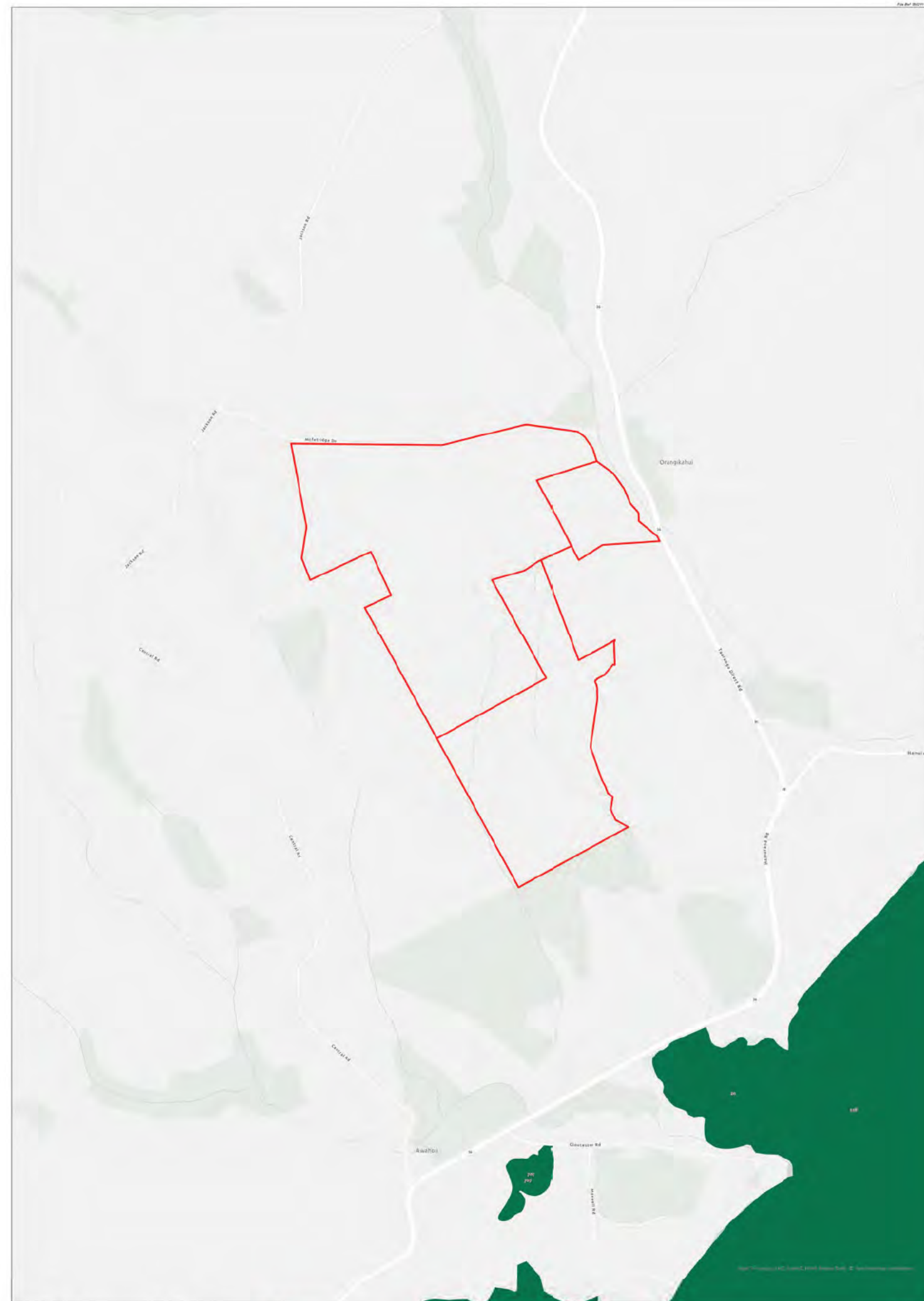
ASPECT AND SLOPE



LEGEND



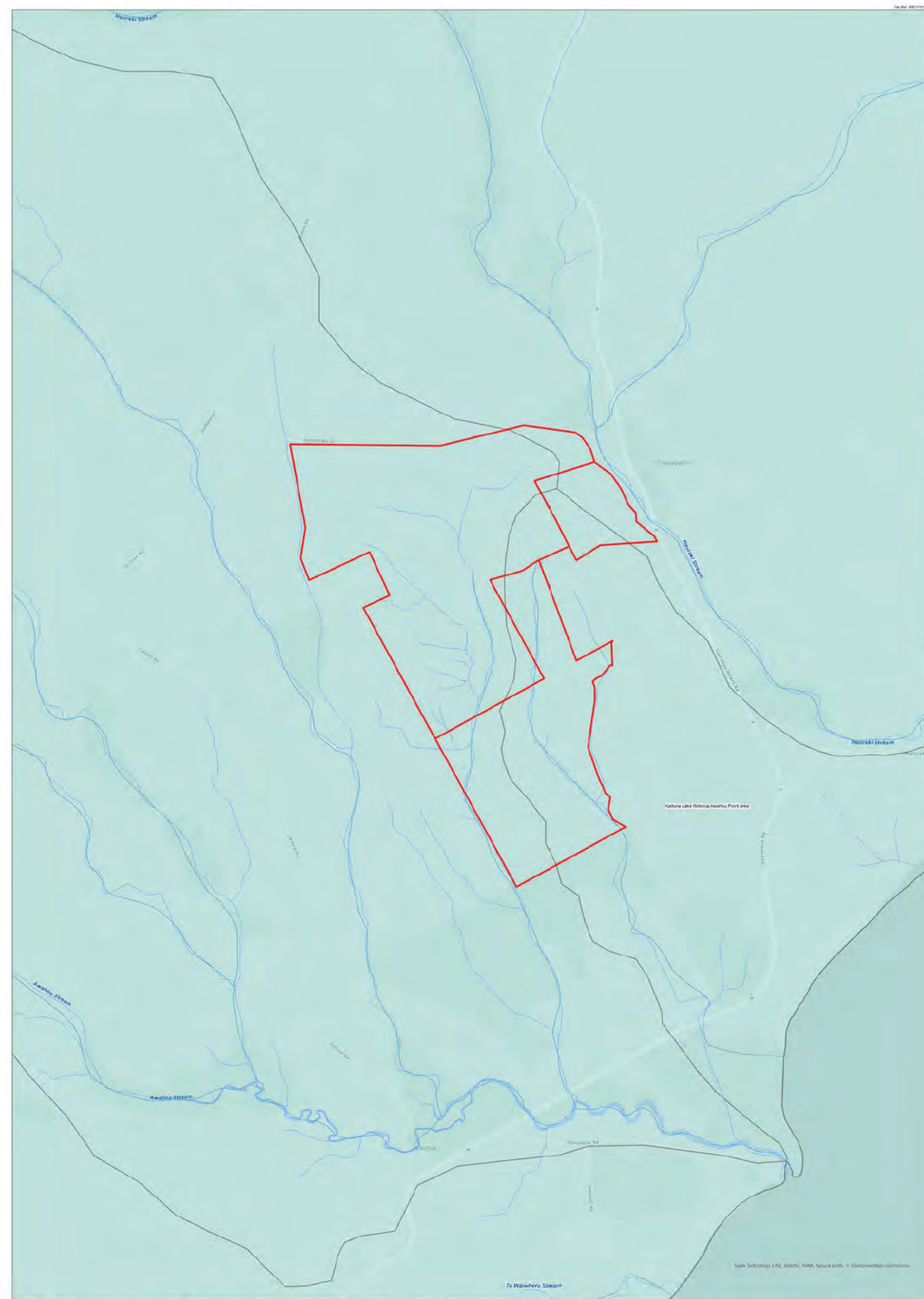
ECOLOGICAL VALUES



- LEGEND**
- Site Parcels
 - Significant Natural Area
 - Bio-vegetation Area
 - qe2_covenants
 - nwr_covenants



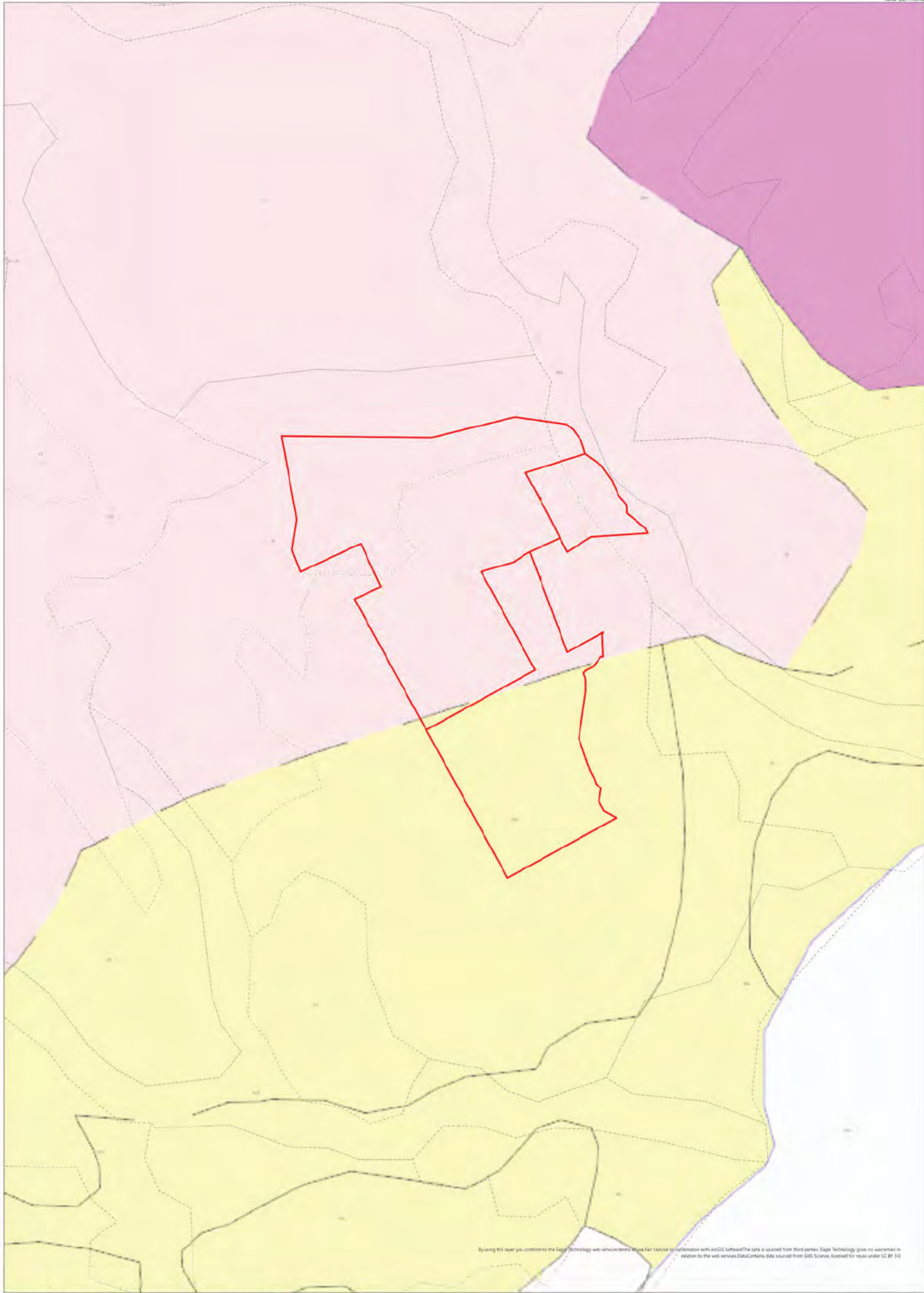
HYDROLOGY



LEGEND	Surface Drainage Catchment	
	Site Parcels	LINZ NZ River Name Lines - Pilot
	Site Parcels	
	LINZ NZ River Name Lines - Pilot	
	Hauraki Stream	
	Awahou Stream	
	Te Wāhanga Stream	
	Maratōtara Coastal	
	Mimiha Coastal	
	Mōtū	
	Newdicks Coastal	
	Ohinekoā Coastal	
	Ohinepānea Coastal	
	Omarumutu Coastal	
	Pehitaiti Coastal	
	Pikowai Coastal	
	Pokohinu Coastal	
	Maketū Estuary Coastal	
	Pukehina Coastal	
	Rangitāiki	
	Raukokore	
	Rotohu	
	Rotomahana	
	Rotomā	
	Ruataniwha Coastal	
	Tahurua Coastal	
	Tarewera	
	Tauranga Harbour	
	Te Kaha Coastal	



SOILS

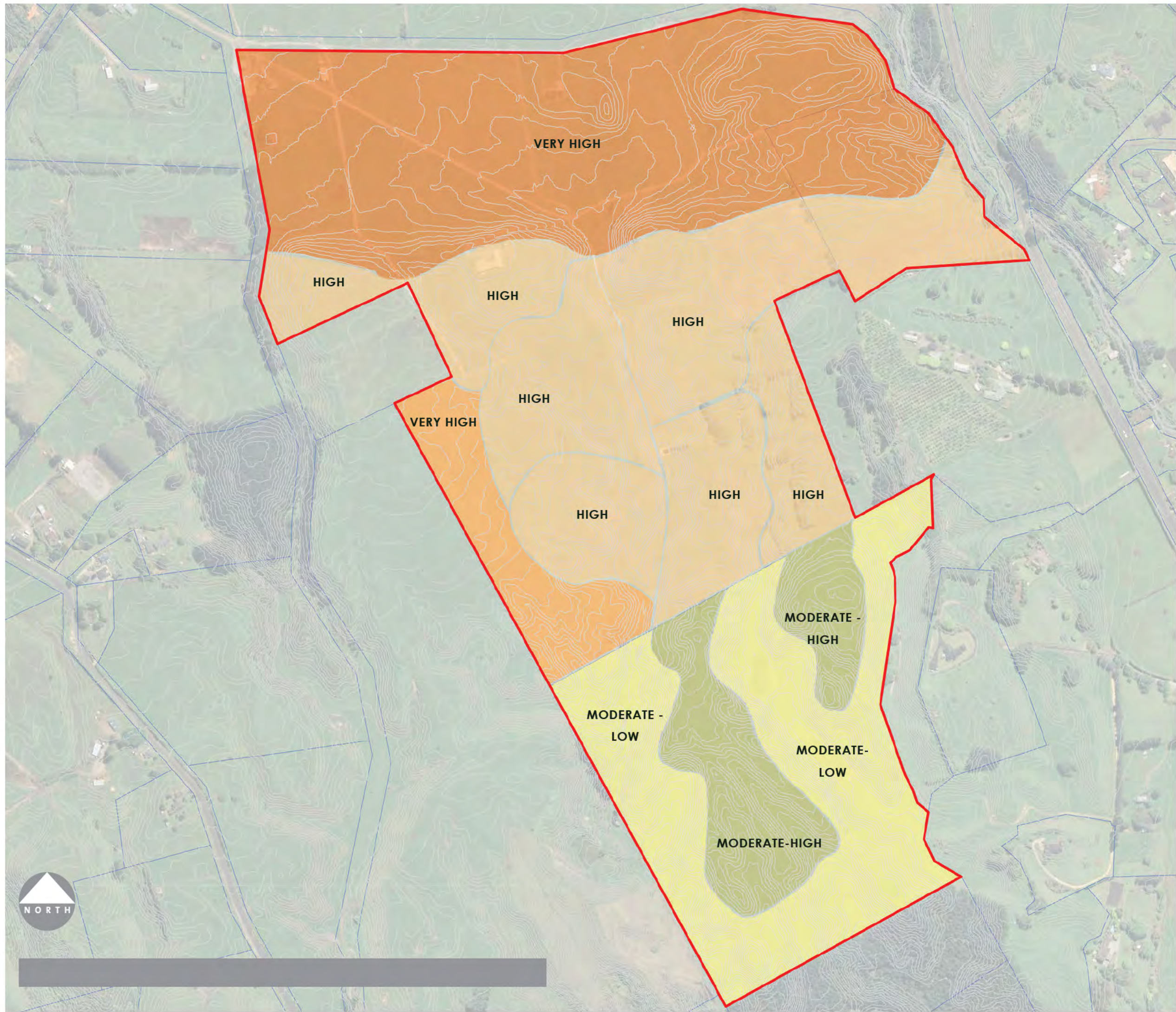


LEGEND

-  Site Parcels
-  NZLRI Soil

GNS Geological Map of New Zealand (QMAP)





LEGEND



Appendix 3: Landscape Concept Plan



KEY

- Site Boundary
- Walking Tracks
- Stock Access Track
- Proposed Native Vegetation
- Building Locations
- Wetland Areas

MILBROW ESTATE SUBDIVISION
LANDSCAPE CONCEPT
Date: 24 February 2026 Revision: G

Plan prepared by Boffa Miskell Limited
Project Manager s 9(2)(a)
Project Number: BM211154
Drawn: RKA | Checked: RRY

Boffa Miskell
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Source data: SUBDIVISION PLAN 9047-C(90) 1001
-3 DATED 170925.dwg

Appendix 4: Rotorua District Plan Provisions Extract

NFL- P16

5. Avoiding subdivision, use and development that may lead to significant landscape and visual adverse effects through the design and location of buildings, roads and infrastructure
6. Providing for limited subdivision use and development within the sensitive landscape area
7. Promoting subdivision use and development in areas that are screened from public view by existing development, landscape features or natural topography
8. Ensuring that the intensity and scale of proposed subdivision or land use in the sensitive landscape area does not create adverse cumulative effects.

RURZ – P11

Ensure land use change does not create adverse effects on rural character and amenity values

RURZ – P12

Enable activities that enhance the rural character and amenity in the rural zone, including:

1. Diverse land uses
2. Maintain the diverse landscape types
3. A low density of buildings and generous separation distances between dwellings and other buildings
4. Buildings that are subordinate to the surrounding landscape
5. An open vegetated landscape
6. No continuous ribbons of residential development along roads
7. Low levels of artificial light
8. Unobtrusive and limited signage
9. Minimal earthworks or changes to landform associated with new subdivision, use or development

RURZ – P14

Manage the adverse effects of rural lifestyle living on the working rural area by:

1. Requiring separation between dwellings and other buildings on adjacent rural sites
4. Providing landscaping to ensure rural character is maintained
5. Managing visual impact of new buildings on the landscape.

The assessment criteria set out in RURZ-AC1 is considered and applied in the following assessment with the following subclauses relevant to landscape and visual effects:

RURZ-AC1, subclauses: 1, 2, 3, 4, 7, 9, 10, 11, 14, 18, 20 and 29a – j.

4a.7.2	a. <i>Whether the desired environmental outcome, with a consistent and appropriate standard of infrastructure, is achieved such as through compliance with the Council's Development Guidelines, Growth Management Strategy and relevant Structure Plans.</i>
4a.7.17	g. <i>Any immediate adverse or potentially adverse cumulative effects of the subdivision or subsequent land use on the quality of Taupō District's lakes, waterways and aquifers, and the methods by which such effects can be avoided, remedied or mitigated.</i> h. <i>Whether the design and layout of the subdivision avoids, remedies or mitigates any adverse effects resulting from identified natural hazards or land contamination, including an assessment of any information provided by a suitably qualified person whose investigations are supplied with the subdivision application.</i> i. <i>The clearance or planting of vegetation, including its location, species and maintenance.</i> j. <i>The potential for financial contributions to avoid, remedy or mitigate any adverse effects on the environment.</i> k. <i>The imposition of conditions in accordance with Sections 108 and 220 of the Resource Management Act 1991.</i> l. <i>Any actual or potential effects on areas or features of cultural, historical, landscape or ecological value as identified in the plan.</i> m. <i>In respect to the New Residential Environment the appropriateness of the design, layout and density of the subdivision, having particular regard to any:</i> v. ... vi. ... vii. <i>relevant stormwater catchment management plan,</i> viii. ... ix. <i>landscape issues (particularly as they relate to any Amenity Landscape Area),</i> x. <i>natural values and any infrastructural servicing issues.</i> n. ... o. <i>Whether infrastructure can sustainably service the actual or cumulative increase in the density of dwellings above that which is anticipated through the Permitted and Controlled activity status in the District Plan.</i> p. <i>The effect of the proposed subdivision on the utilisation of geothermal energy resources of Development and Limited Development Geothermal Systems.</i> q. <i>Whether there is suitable and appropriate physical and legal access to allotments based on the number of new allotments</i>

	<i>created and any necessary title security of ownership and maintenance.</i>
TANGATA WHENUA CULTURAL VALUES	
4e.4	a. <i>Where there are any sites of significance to Tangata Whenua (whether identified in the Plan or not), and the potential effect of the activity on the cultural value of the site.</i> b. <i>Any alternative locations available for the activity, or whether the activity can be undertaken without adversely affecting the site of significance to Tangata Whenua.</i> c. <i>Whether proposed mitigation measures to be undertaken as a result of the activity protects or preserves the value and/or significance of the site.</i> d. <i>The relationship of a site of significance to Tangata Whenua with the surrounding area and whether the activity will result in severance or isolation from the surrounding area, resulting in the loss of that value.</i>
LANDSCAPE VALUES	
4e.5	<i>For rules and performance standards relating to Landscape Area, refer to the relevant underlying Environment.</i>

DISTRICT PLAN OBJECTIVES AND POLICIES

Residential Environment

TABLE 5: RESIDENTIAL ENVIRONMENT OBJECTIVES AND POLICIES	
RELEVANT OBJECTIVES AND POLICIES	
<i>Objective 3a.2.1</i>	<i>The maintenance and enhancement of the character and amenity of the Residential Environment.</i>
<i>Policy i)</i>	<i>Maintain and enhance the character and amenity of the Residential Environment by controlling the bulk, location and nature of activities, to ensure activities are consistent with a residential scale of development, including an appropriate density and level of environmental effects.</i>
<i>Policy iii)</i>	<i>To provide for a number of small scale convenience based retail, commercial and community facilities as identified as a “Shop” on the Planning Maps where these:</i> a. <i>provide a high standard of urban amenity; and</i> b. <i>remain compatible with the scale of the surrounding residential environment.</i>
<i>Policy v)</i>	<i>Any relevant Structure Plans, strategies or guidelines should be taken into account in the design of any development within the residential environment.</i>
<i>Policy vi)</i>	<i>Encourage a wide range of appropriate activities and development within the Residential Environment while ensuring any adverse effects are avoided, remedied or mitigated.</i>

TABLE 5: RESIDENTIAL ENVIRONMENT OBJECTIVES AND POLICIES

<i>Policy ix)</i>	<i>Avoid, remedy or mitigate adverse effects of subdivision, use and development in the residential areas on cultural, historic, landscape and natural values, as identified through the provision of this Plan.</i>
<i>Policy x)</i>	<i>Recognise the important role of reserves and their existing infrastructure and services (including those provided by commercial operators) in providing recreational opportunities for the community.</i>
<i>Objective 3a.2.2</i>	<i>To ensure that development in the Residential Environment takes into account the capacity of the supporting infrastructure.</i>
<i>Policy i)</i>	<i>Subdivision and development in the Unserved Residential Environment should be able to be effectively serviced without creating adverse effects on the supporting infrastructure.</i>
<i>Objective 3a.2.4</i>	<i>To enable the New Residential Environment to be developed in a manner which reflects the characteristics of the land and minimises offsite effects.</i>
<i>Policy i)</i>	<i>Subdivision and development in the New Residential Environment should be in a form and layout that includes a range of built densities that are appropriately suited to the physical, landscape and amenity characteristics, natural values and constraints of the land.</i>
<i>Policy ii)</i>	<i>Subdivision and development in the New Residential Environment should not adversely affect the amenity of the wider Residential Environment.</i>

RELEVANT OBJECTIVES AND POLICIES

<i>Objective 3e.2.1</i>	<i>Provide for and manage urban growth so as to achieve the sustainable management of the District's natural and physical resources.</i>
<i>Objective 3e.2.3</i>	<i>Ensure the maintenance of an appropriate and sufficient level of community infrastructure within existing serviced areas.</i>
<i>Policy i)</i>	<i>Allow new activities and development to connect to existing water and wastewater infrastructure where there is adequate capacity to meet the needs of the development.</i>
<i>Policy ii)</i>	<i>Avoid, remedy or mitigate any adverse effects of the disposal of stormwater on the receiving environment.</i>
<i>Policy iii)</i>	<i>Ensure new activities and developments contribute to the provision and standard of reserves and open space amenity to meet the needs of the community including Esplanade Reserves in accordance with the provisions of the Act.</i>

TABLE 5: RESIDENTIAL ENVIRONMENT OBJECTIVES AND POLICIES

Policy iv)	<i>Avoid, remedy or mitigate the adverse effects of new development and activities on the safe and efficient functioning of the existing and future roading networks including those identified through the Taupō District Structure Plan Process.</i>
Objective 3e.2.4	<i>Avoid the degradation of Taupō District's lakes, waterways and aquifers from effluent and waste water resulting from land development.</i>
Policy i)	<i>Implement integrated land management strategies in conjunction with Regional Authorities that will avoid, remedy or mitigate adverse environmental effects on Taupō District's lakes, waterways and aquifers.</i>
Policy ii)	<i>Allotments that are not serviced by an off-site wastewater disposal system are to be of an adequate size to ensure that the proposed land use can operate and maintain appropriate on-site effluent and waste water treatment systems.</i>
Objective 3e.2.5	<i>Ensure land development does not detract from the amenity value or qualities of the local environment.</i>
Policy i)	<i>Ensure that proposals for the subdivision and development of land assess the particular amenity values of the area including the physical characteristics of the land and avoids, remedies or mitigates any adverse effects.</i>
Policy ii)	<i>Subdivision and subsequent development shall either maintain or enhance, but not detract from, the significance of features or areas of cultural, spiritual, historical, landscape or natural value, (as identified through the provisions of this Plan).</i>
Policy iii)	<i>Enable the creation of allotments below any minimum allotment size identified as a controlled activity in this Plan for the exclusive purpose of providing or enhancing public or private access, or to exclusively accommodate a complying network utility activity and infrastructure.</i>

RELEVANT LANDSCAPE VALUES OBJECTIVES AND POLICIES

TABLE 7: LANDSCAPE VALUES OBJECTIVES AND POLICIES

RELEVANT OBJECTIVES AND POLICIES	
Objective 3h.2.1	Protect Outstanding Landscape Areas from inappropriate subdivision, use, and development which may adversely affect the Landscape Attributes.
Policy i)	Ensure subdivision, use, and development is located and designed in a way that protects the Landscape Attributes of Outstanding Landscape Areas.

TABLE 7: LANDSCAPE VALUES OBJECTIVES AND POLICIES	
RELEVANT OBJECTIVES AND POLICIES	
Policy ii)	Protect Outstanding Landscape Areas from more than minor adverse visual effects of earthworks, including more than minor visible scarring or more than minor adverse change to the natural landform or natural feature.
Policy iii)	Avoid the erection of built structures that will have more than minor adverse visual effects on the Landscape Attributes of Outstanding Landscape Areas, or will result in cumulative adverse effects from increased built density.
Policy iv)	Avoid subdivision that will result in the fragmentation of open space character leading to any cumulative adverse effects on Outstanding Landscape Areas.
Policy v)	Where Significant Natural Areas are within Outstanding Landscape Areas, avoid, remedy, or mitigate more than minor adverse visual effects of Indigenous Vegetation Clearance on the Landscape Attributes of the Outstanding Landscape Area.
Policy vi)	<i>Remedy or mitigate potential adverse effects of subdivision, use, or development on the attributes of Outstanding Landscape Areas, giving consideration to:</i> <i>a. The suitability of the site for the proposed subdivision, use or development.</i> <i>b. Recognise specific site requirements for some uses or development.</i> <i>c. The scale, location, design and nature of the subdivision, use or development, and whether it will be sympathetic with the Landscape Attributes of the Outstanding Landscape Area.</i> <i>d. The ability to remedy or mitigate significant adverse effects.</i> <i>e. The extent of any disturbance or modification to the Outstanding Landscape Area as a result of subdivision, use or development, including potential impacts of earthworks and the ability of earthworked areas to be rehabilitated.</i> <i>f. The visual impact of Indigenous Vegetation Clearance within Significant Natural Areas on the Landscape Attributes, and the ability to revegetate cleared areas with appropriate indigenous species.</i> <i>g. The effectiveness and appropriateness of proposed mitigation to address adverse landscape and visual effects of subdivision, use or development, including appropriateness of mitigating vegetation to screen or soften built structures, and ongoing maintenance of mitigation planting.</i>
Objective 3h.2.2	Maintain the Landscape Attributes of Amenity Landscape Areas.
Policy i)	Ensure new subdivision, use, and development is located and designed in a way that maintains the Landscape Attributes of Amenity Landscape Areas, while

TABLE 7: LANDSCAPE VALUES OBJECTIVES AND POLICIES	
RELEVANT OBJECTIVES AND POLICIES	
	considering the existing landscape character and the underlying District Plan Environment.
<i>Policy ii)</i>	Where Significant Natural Areas are within Amenity Landscape Areas, avoid, remedy, or mitigate more than minor adverse visual effects of Indigenous Vegetation Clearance on the Landscape Attributes of the Amenity Landscape Area.
<i>Policy iii)</i>	Manage the scale and intensity of subdivision, use and development in Amenity Landscape Areas to avoid, remedy, or mitigate more than minor adverse effects on the Landscape Attributes, considering: a. The suitability of the site for the activity proposed. b. The scale, location, design, and nature of the subdivision, use or development in relation to the provisions of the underlying Environment, and whether it will be sympathetic with the Landscape Attributes of the Amenity Landscape Area. c. The extent to which the Landscape Attributes will be affected. d. The ability to remedy or mitigate more than minor adverse effects. e. The visual impact of Indigenous Vegetation Clearance within Significant Natural Areas on the Landscape Attributes, and the ability to revegetate cleared areas with appropriate indigenous species. f. The effectiveness and appropriateness of any mitigation to address adverse landscape and visual effects of subdivision, use or development, including appropriateness of mitigating vegetation to screen or soften built structures, and ongoing maintenance of mitigation planting. g. Recognise specific site requirements for use or development.
<i>Objective 3h.2.3</i>	Recognise and encourage the enhancement of Amenity Values within Landscape Areas in the Taupō District.
<i>Policy i)</i>	Recognise and encourage subdivision, use or development that enhances Amenity Values within Landscape Areas in the Taupō District, by utilising, but not being limited to, the following principles: Subdivision Design a. Subdivision design that utilises the existing landform and landscape features and aligns new allotment boundaries to natural patterns. b. Where possible, existing vegetation is retained and protected, and vegetation patterns that reflect the natural landform are maintained. c. Fencing styles are designed to complement the existing character of the Landscape Area. Built Structures

TABLE 7: LANDSCAPE VALUES OBJECTIVES AND POLICIES	
RELEVANT OBJECTIVES AND POLICIES	
	d. Built structures are located and designed in a way to integrate with the Landscape Attributes. e. Building materials utilise recessive colours and have low reflectance levels. f. Existing vegetation patterns are utilised to integrate buildings within the Landscape Area. Roads g. Road layout is designed and located to minimise visual prominence, where possible by following topography, and minimising the number of vehicle accesses onto roads. Earthworks h. Earthworks are located to minimise disturbance of the natural form and character of the Landscape Area, by avoiding visually prominent locations. i. Where practical, earthworks or areas surrounding earthworks are vegetated to soften any abrupt changes in landform, or reduce visible 'scarring' of the landform. Planting j. New tree planting and vegetation patterns reflect the existing landscape character and natural patterns of the landscape. k. Where possible, ecological corridors and ecosystems are restored. l. Planting is used to help integrate buildings with the Landscape Area.
<i>Policy ii)</i>	Encourage the utilisation of design guidelines that maintain and enhance Amenity Values within Landscape Areas in the Taupō District.
<i>Policy iii)</i>	Enable activities that result in a Net Environmental Gain for Landscape Areas in the Taupō District.
<i>Objective 3h.2.4</i>	Acknowledge and encourage mechanisms that appropriately manage Landscape Areas in the Taupō District.
<i>Policy i)</i>	Consider existing protection mechanisms where they provide an appropriate level of management of Landscape Areas.
<i>Policy ii)</i>	Recognise existing efforts of landowners to manage Landscape Areas in the Taupō District.
<i>Policy iii)</i>	Recognise the historical and current role of Maori in the long-term appropriate management of Landscape Areas in the Taupō District.
<i>Policy iv)</i>	Encourage new efforts to manage Landscape Areas.

About Boffa Miskell

Boffa Miskell is a leading New Zealand professional services consultancy with offices in Auckland, Hamilton, Tauranga, Wellington, Christchurch, Dunedin and Queenstown. We work with a wide range of local and international private and public sector clients in the areas of planning, urban design, landscape architecture, landscape planning, ecology, biosecurity, cultural heritage, graphics and mapping. Over the past four decades we have built a reputation for professionalism, innovation and excellence. During this time we have been associated with a significant number of projects that have shaped New Zealand's environment.

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