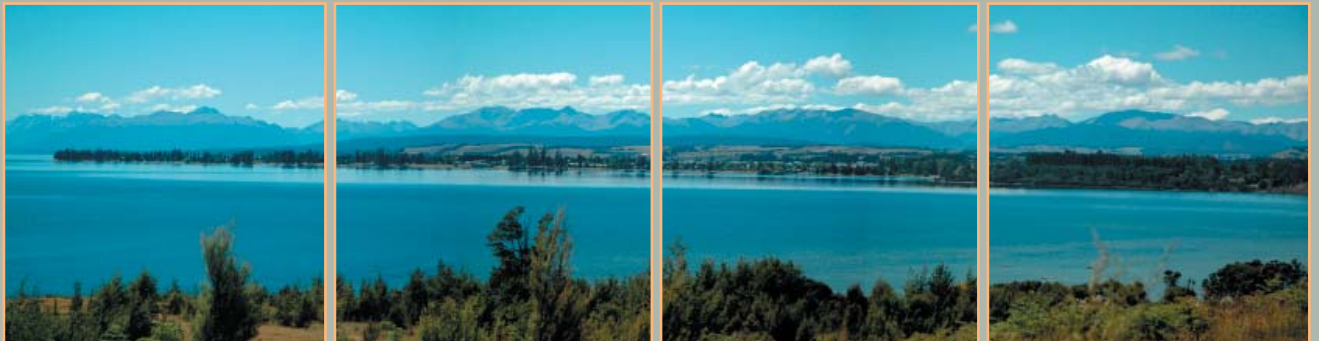


Te Anau Basin Growth Planning



LANDSCAPE CAPACITY STUDY



Te Anau Basin Growth Planning

LANDSCAPE CHARACTER, SENSITIVITY AND CAPACITY

Prepared for
Environment Southland
by
Boffa Miskell Limited



April 2006

CONTENTS

1.0	Background	1
2.0	Introduction	1
3.0	Methodology	2
3.1	Summary	2
3.2	Overview of Landscape Capacity Appraisal Process	4
3.2.1	Resource Studies	4
3.2.2	Landscape Analysis	4
3.2.3	Landscape Assessment	5
4.0	Landscape Capacity For Development And Ability To Absorb Change	5
5.0	Summary Of Results	7
5.1	Landscape Character Sensitivity	7
5.2	Visual Sensitivity	8
5.3	Capacity	9
5.4	Points For Further Discussion	9
6.0	Further Investigations	10

1.0 BACKGROUND

The Te Anau basin has experienced, and continues to experience, rapid growth, particularly since 2000. Approximately 1,000 new residential and rural-residential allotments have been created in the Te Anau basin in this time frame, with a further 250+ currently in various stages of the resource consent process.¹ Significant change associated with developments providing for periurban or rural residential life-style are occurring in the Te Anau area.

The Resource Management Act (RMA) requires councils to recognise and provide for, or have particular regard to, the protection of outstanding natural features and landscapes, maintenance or enhancement of amenity values, and of the quality of the environment. However, it is noted that the RMA is only one of a number of relevant pieces of legislation and therefore is only one of a number of “possible tools” to achieve the desired vision.

Concerns have been expressed that this growth should be more pro-actively managed to achieve the community’s desired vision for the future of the area. This vision encompasses both environmental and socio-economic issues including the provision of community facilities, employment opportunities, and the inter-relationship with the major tourism icons of Milford Sound and the Fiordland National Park.

Various documents have addressed these issues. These include the following:

- ❑ The Te Anau Fiordland Concept Plan 2000, which contains a community visioning component.
- ❑ The Te Anau Non-Regulatory Guidelines for Te Anau 2003, which focus primarily on the natural and physical environment and encourage developers to incorporate certain features into their developments.

2.0 INTRODUCTION

Environment Southland (ES) and Southland District Council (SDC) commissioned Boffa Miskell Limited (BML) to carry out an investigation of landscape character and value for the Te Anau Basin. The first stage of this landscape assessment is of the entire Te Anau Basin. The study forms part of the Te Anau Integrated Planning Project (TAIPP) currently being undertaken by SDC and ES. Once general areas suitable for growth have been identified it will be necessary to carry out more refined assessments for specific areas.

Landscape change is inevitable. This may be natural or the result of human activities. Additional housing in the Te Anau Basin, with its associated transport and infrastructure needs, will result from a range of social and economic forces. It is important that landscape is a major consideration in the location of this additional housing. However, despite the inevitability of change and the apparently insatiable demand for additional housing, many people wish the landscape to remain largely unchanged. Clearly the two are not compatible. This report evaluates how the demands for additional housing can be accommodated while also retaining the aspects of the landscape that have been identified as important and

¹ according to information provided by ES in the project brief

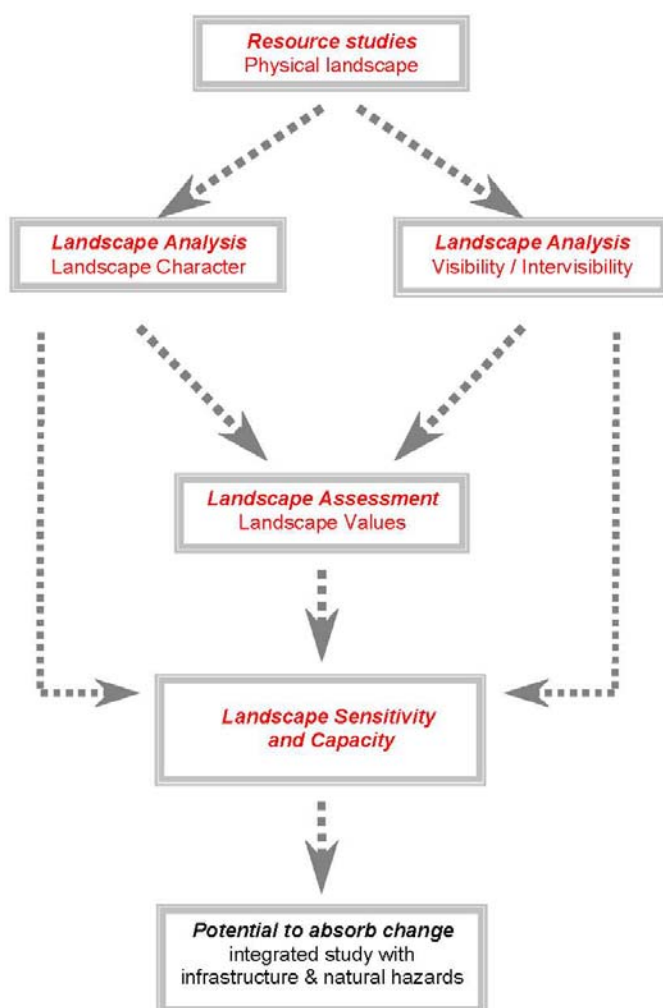
valued. The objective is to locate development where it will provide successful living conditions for its residents without having significant adverse effects on the wider community. It is important to recognise that this report is limited to landscape considerations, whereas final choice of development locations will incorporate a range of other considerations.

The purpose of the TAIPP is to consider the options for pro-actively managing the extensive growth occurring in the Te Anau Basin. This landscape assessment identifies the capability of the landscape to accommodate further housing growth and development. The report and accompanying maps set out the findings of this investigation. The report has been prepared by a BML landscape planning team of Allan Rackham, Sue McManaway and Yvonne Pflüger. Investigations took place in January-April 2006.

3.0 METHODOLOGY

3.1 Summary

The BML landscape team developed the assessment approach set out below.



Steps covered in this landscape assessment are highlighted in red.

Preliminary resource studies included a review of:

- Existing publications on the landscape and natural features within the study area.
- Data on existing development within the study area.
- Proximity to the Fiordland National Park and key vistas.

Regard was given to existing publications as outlined in the project brief.

Extensive use was made of existing information and data prior to undertaking field investigations. Preliminary desktop analysis was used to focus the on-site landscape assessment and address important issues in advance. Initial landscape character unit boundaries were identified using GIS to incorporate relevant layers of information. Recent vertical aerial photos (2002) of the township and parts of the basin have been made available to the BML investigations team.

Site investigations were a pivotal part of the assessment process. They included an aerial survey of the study area to obtain a good oblique photographic record.

The analysis of landscape character and values was carried out at a consistent depth across the study area. This provides a robust basis for integration of results from the natural hazards investigation and infrastructure planning. These basin-wide investigations proved to be sufficient to identify key 'no go' areas and any 'favoured growth areas'. These results will be integrated together with results from the natural hazards investigation and infrastructure planning. This process will involve liaison and coordination with Council staff regarding infrastructure/asset implications and needs.

The landscape assessment findings are presented as:

- A set of summary sheets for each Landscape Character Area that identify the landscape characteristics that may limit or potentially facilitate, development within the study area.
- A set of GIS maps² that indicate whether areas may or may not be suited to future development.
- This report of the findings.

² Note: BML supplies ESRI Shape Files that are compatible with the software Southland District Council utilises

3.2 Overview of Landscape Capacity Appraisal Process

3.2.1 Resource Studies

A study area was provided by Environment Southland. Areas of broadly homogenous landscape were identified and mapped for the wider Te Anau Basin. This investigation was based on existing literature (ecology, geology, soil science), aerial photos to define landscape types (and ecosystems) for the area.

The landscape types within the study area were then refined based on detailed geomorphological patterns and variations in land cover and land use. These data are sourced from aerial photos, the New Zealand Land Cover Database and existing planning documents³. Forty-two 'Landscape Character Areas' were identified. Each area has been named and its approximate boundaries defined. These have been mapped digitally using a geographical information system (GIS).

3.2.2 Landscape Analysis

An intensive on-site review of the landscape character areas was completed in February 2006. This involved ground assessment and an aerial overview. An extensive photographic record was compiled. Based on this review, landscape character areas were amended and boundaries adjusted. The description and analysis of landscape character for each landscape unit consists of the following:

- GIS Map: A study area map highlights each landscape character unit.
- Description of Landscape Character Area: The descriptions of the landscape areas focus on the physical resource – the patterns and relationships of geomorphology, topography, hydrology, land cover, land use, buildings and structures.
- Summary of Key Characteristics: Recurring elements and patterns are highlighted for each area.
- Photographic Record: Photographs (terrestrial photographs and oblique aerials) illustrate the physical and visual character of each area.

³ such as Background Paper – Landscape and Ecology (1993) Southland District Council. Conservation Management Strategy: Mainland Southland - West Otago (2000) Department of Conservation. Draft Fiordland National Park Management Plan (2002) Department of Conservation. Growth in the Te Anau Basin (Volumes 1 and 2) (2005) Southland District Council and Environment Southland. Inventory of Important Geological Sites and Landforms in the Southland Region including the Subantarctic Islands (1993) Geological Society of New Zealand. Non Regulatory Developer Guidelines - Te Anau Ward (2003) Southland District Council. Regional Policy Statement for Southland (1997) Southland Regional Council. Southland District Plan (2001) Southland District Council. Southland Regional Landscape Assessment (1997) Boffa Miskell Limited. Te Anau Fiordland Concept Plan (2000) Southland District Council.

3.2.3 Landscape Assessment

The landscape has been assessed and categorised by defining the sensitivity and value of each distinct area.

- Analysis of Landscape Character Sensitivity: The character of the landscape units is one of the two factors that determine their ability to absorb change, visibility being the second one. The analysis is based on judgments about sensitivity of aspects most likely to be affected. Namely, these aspects cover Natural Factors, Cultural Factors, Quality/Condition and Aesthetic Factors.
- Analysis of Visual Sensitivity: The visual sensitivity covers the visibility of a landscape unit as well as the population likely to visually experience the area. The assessment of visibility of each landscape unit is based on findings from the onsite investigations and the photographic records.
- Analysis of Landscape Values: The value assessment is based on findings from the landscape analysis described above and findings from existing planning documents. The criteria to assess significance and value of each landscape character unit consider designations on both a national and local level as well as other criteria indicating value, such as tranquillity, remoteness, wilderness and conservation interests. Units with similar characteristics have been categorised according to their value as the basis for an indicative assessment of their suitability for future development.

4.0 LANDSCAPE CAPACITY FOR DEVELOPMENT AND ABILITY TO ABSORB CHANGE

Landscape capacity refers to the degree to which a particular landscape character type or area is able to accommodate change without significant effects on its character, or overall change of landscape character type. Capacity is likely to vary according to the type and nature of change being proposed.

The basis for this capacity assessment is the landscape character and sensitivity analyses described in the earlier section. This 'character' approach makes an important contribution to finding solutions that enable desirable housing while, at the same time, help to maintain the qualities of a diverse landscape character. The landscape's sensitivity relates directly to its capacity to accommodate further residential development.

The following figure is the model used in these investigations:

<p>Landscape capacity to accommodate new housing development in the Te Anau Basin study area Housing is assumed to be up to 2 storey eg. <8m + gardens or developed curtilage + access roads, and infrastructural services</p>	<p>=</p>	<p>Landscape Character Sensitivity Incorporating naturalness, aesthetics, openness (Cultural – T.whenua and heritage not addressed)</p>	<p>+</p>	<p>Visual Sensitivity Includes general visibility, viewer expectations and mitigation potential</p>	<p>+</p>	<p>Landscape Value Includes perceptual and experiential issues, existing designations and District Plan issues</p>
--	-----------------	--	-----------------	--	-----------------	---

The landscape character and visual sensitivity assessments identify key physical and visual landscape criteria that will determine the area's ability to accommodate change.

Landscape value introduces a major subjective component dealing with people's interests, associations, experiences and perceptions. Although subjective, there is generally some community agreement – either through designations, district plan directions or common understanding of which places are special. In this investigation we have taken a comparative approach, seeking to make judgements based on the relative values attached to different landscapes by various communities of interest.

Decisions about the capacity of different parts of the basin will reflect the interaction between the sensitivity of the landscape in the area, the type and extent of change, and the way that the landscape is valued. It is conceivable, for example, that a capacity study may show that a certain specified amount of appropriately located and well-designed housing may be acceptable even in a highly valued and moderately sensitive landscape. In this instance we have separated housing development into different categories as the appropriateness for housing in a given landscape may vary greatly between different scales of development. Three development types have been used to indicate possible suitability. Clearly, these are points along a continuum of density and scale.

- Type 1. Individually sited dwellings with layout and design controls, ie. sensitive architecture and appropriate landscape design.
- Type 2. Grouped (clustered) housing <10 lots (possibly with layout and design controls).
- Type 3. Conventional suburban or rural residential development.

No assumptions were made at the outset of the study about growth types or locations. These have resulted from the landscape capacity assessment. The landscape capacity findings will need to be moderated by functional considerations such as access, hazards and infrastructure. Resource limitations have necessitated a two stage approach to the capacity assessment.

Using the methodology set out in Chapter 3, the Te Anau Basin has been categorised into 42 landscape character areas. Each of these was assessed for its comparative landscape character and visual sensitivity and for its landscape values. They were then ranked from high to low sensitivity.

These rankings determined the area's capacity to accommodate different types of housing development. The capacity of the landscape is also described from high to low. Areas that are considered potentially suitable for development of conventional suburban development are described as having a high capacity. Areas unsuited to development are described as having low or moderately low capacity and are considered 'no go' areas.

The following chart illustrates the way character sensitivity and visual sensitivity were combined to determine the overall capacity of each character area:

Visual sensitivity	Character sensitivity					
		HIGH	MODERATELY HIGH	MODERATE	MODERATELY LOW	LOW
HIGH						
MODERATELY HIGH						
MODERATE						
MODERATELY LOW						
LOW						

Capacity

	LOW
	M-LOW
	M
	M-HIGH
	HIGH

In this study, a relatively broad analysis of all 42 Landscape Character Areas has been completed. For the purposes of this report, each Landscape Character Area has been categorised with a single sensitivity and capacity level. This broad approach is intended to provide a basis for a more detailed analysis of those specific areas with potential capacity. While character areas in this report have been chosen based on similarities in geomorphological patterns and variations in land cover and land use, they can be broken down further, into finer units. The characteristics of these units will help determine where and how future development may be most appropriately accommodated. This may lead to the development and exploration of alternative development scenarios, variations to the District Plan, or the identification of assessment criteria.

5.0 SUMMARY OF RESULTS

This chapter identifies and interprets the patterns that have formed in the sensitivity and capacity maps. It goes on to suggest some guidelines for further discussion regarding appropriate levels of development in those areas where growth can be accommodated.

5.1 Landscape Character Sensitivity

Those areas with lower character sensitivity are in the modified, farmed and residential parts of the Te Anau basin. It is clear from the landscape character sensitivity map that most of these areas fall between the Upukerora River to the north and the Waiiau River in the south.

Landscape character becomes more sensitive where farmland is less intensive and is located on the margins of large natural areas. Large tracts of native forest or areas or features where natural patterns and processes are dominant such as rivers and wetlands have been evaluated as having high sensitivity to change.

Some Landscape Character Areas contain elements that contribute variable levels of sensitivity within the unit. For example there are areas that may be identified as having a moderately low sensitivity to change (eg. some areas of improved farmland), that also contain more highly sensitive pockets within them such as wetlands or riparian river margins. In this instance, the potential for residential growth is likely to be different across the character area.

5.2 Visual Sensitivity

The landscape units identified as having lower visual sensitivity are a combination of areas where:

1. the visibility/openness of a landscape unit is low,
2. there is a relatively low population likely to visually experience the area; and
3. the expectations of the viewing population are likely to be in accord with further growth

For example, Manapouri has been evaluated as having a moderately low visual sensitivity because it is a contained landscape (with trees and buildings screening views from within the area) and although there is a relatively high viewing population, it has been assumed that an expectation of further development within the existing settlement is reasonable.

Those landscape units that have been evaluated with higher visual sensitivity rankings are a combination of the following:

1. a very open, highly visible character,
2. a relatively high population likely to visually experience the area; and
3. where the possibility of significant development is likely to be seen as 'out of context' by most viewers

For example, the Te Anau Aerodrome landscape unit has been identified as having a moderately high level of visual sensitivity because its character is typically open and consists of flat paddocks, visible from the Manapouri-Te Anau Highway. It has been assumed that most viewers would not currently expect to experience a high level of residential development in this agricultural landscape.

The attached visual sensitivity map shows that units with lower visual sensitivity rankings are either in secluded or visually enclosed areas or places where few people live or visit or they are in or close to existing highly modified residential areas where viewers expectations are likely to be in accord with prospects for future growth.

Those areas identified on the maps as having high levels of visual sensitivity mostly occur north of Te Anau, in the wilder parts of the study area. Some of these areas are adjacent to the busy Milford-Te Anau Highway. Other units are more remote but

are likely to attract people for whom any prospect of residential development would be out of context and dramatically reduce their visual experience.

5.3 Capacity

Evaluations of landscape character and visual sensitivity have been combined to reach a capacity level that indicates whether the area may or may not be suited to housing development. Those landscape units with high visual and character sensitivity have a correspondingly low capacity for accommodating growth. Likewise, those units with low sensitivity are likely to have a high capacity for future development.

Values identified within the unit have been used to moderate the character and visual aspects of the analysis and where there are areas that can accommodate growth, these values can be used to explore the ways in which that development could most appropriately occur.

Overall, those areas that have been identified as most suitable for future growth are in landscapes that have already experienced some level of modification. They are generally circled around Te Anau but also push out towards the east and south. Many of these landscape units are already undergoing some form of new housing development.

As can be seen on the Capacity map, those areas with the lowest capacity for future housing development are generally to the north, on the margins of Fiordland National Park or other wilderness areas. Some lie to the south, and they also tend to be on the fringe of the basin, adjacent to the National Park. Rivers and Wetlands have also been identified as 'no go' areas.

There are large areas of farmland, particularly to the south of the study area that have been identified as having a 'moderate' capacity. This means that within each of these units there may be areas that have some capacity for future growth in landscape terms. This level of capacity is a reflection of both the current level of modification and the levels of visual sensitivity in these areas, and also their high rural amenity values and other valued characteristics.

5.4 Points For Further Discussion

As discussed earlier in Chapter 4, we have separated housing development into three different categories because the appropriateness for housing in a given landscape may vary greatly between different scales of development. The following are suggestions as to which type of housing development may be most appropriate for a particular level of capacity. They are intended to be points for discussion that could guide a more refined assessment, focussed on those areas identified in this report as being most appropriate to accommodate future development.

Capacity to Accommodate Some Residential Growth Within Selected Locations	Suggested Development Level	Need for Specific Design Guidelines to Protect Landscape Values	Map Capacity Colour
High	Further conventional urban/suburban growth	No	Green
Moderately High	Future cluster/lifestyle or individual housing, dependant on specific landscape characteristics	May be appropriate in sensitive areas within the unit	Yellow
Moderate	There may be specific sites suited to individual housing or small clusters	Yes	Light Orange
Moderately Low	Currently unsuited to further housing		Dark Orange
Low			Red

6.0 FURTHER INVESTIGATIONS

Each area identified as potentially suitable for some form of housing development will need to be assessed for suitability in terms of hazards, infrastructure and access. From this composite analysis, areas will be identified that have some capacity for development. These selected areas will then be assessed in detail for their comparative suitability for different intensities of development.

This analysis provides a basis for assessing a range of alternative growth scenarios – in terms of both intensity and scale of growth. For example the comparative weights used in the sensitivity and values assessment or the capacity thresholds can all be varied to provide more, or less, restrictive development regimes. These are decisions that are rightly made by the Te Anau and Southland communities in the light of development pressures and their attitude towards the landscape.