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REST AREAS ON TOURIST HIGHWAYS
This study has been submitted in part fulfillment of the requirements for the Diploma of Landscape Architecture at Lincoln College, University of Canterbury.

September 1985

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OBJECTIVES

The objectives of this dissertation are:-

1. To identify the functions that rest areas could fulfill on tourist highways: the opportunities they provide for enhancing the tourist experience and the needs they should fulfill.

2. To consider ways rest areas can be developed as an integral part of the travel experience.

3. To assess and make recommendations on the New Zealand approach to rest area provision.
ACKNOWLEDGMENTS

I wish to thank the many people who helped in the production of this study through assistance in the collection of information, support and encouragement. Particular thanks to the staff of the Ministry of Works and Development Environmental Design section, Christchurch for providing me with photographs.

I wish to thank also my supervisor Ms Mary-Anne Robinson, lecturer in Landscape Architecture, Lincoln College, for her advice and guidance.
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DEFINITIONS

- REST AREA: For the purpose of this study a rest area is a roadside facility, provided for travellers, which is not provided primarily for commercial activities or for camping. Under this definition, rest areas can take a whole range of forms, from a simple pulloff or layby to large service areas; these with a wide range of facilities, such as cafes.

- TOURIST HIGHWAY: Tourist highways have been defined and identified by the National Roads board in conjunction with the Tourist and Publicity department. "A tourist road is one which provides travelling routes for visitors which enhance their appreciation of an area or region and, or lead to an area which is of notable scenic, recreational or educational value." - This definition encompasses the provision of stopping points such as scenic viewing areas, as desirable and where
practicable. Tourist highways then, are routes which should particularly cater for tourists. However their designation does not affect distribution of finance in any way. Figure 1 shows New Zealand Tourist routes.

- TOURIST: The New Zealand tourism council defines tourists as comprising both international and domestic components. Using the tourism council definition as a basis tourists can be defined as follows: - International tourists are persons staying in New Zealand for the purposes of leisure or business. Domestic tourists are residents of New Zealand travelling outside their usual residential areas.
3.

INTRODUCTION

Rest areas on New Zealand tourist highways have primarily been provided as features to increase the safety of road users by making provision for rest stops. However from the point of view of the tourist they also provide important opportunities to enhance experience of the landscape. As tourism continues to grow and as the trend towards more flexible forms of transportation continue, rest areas will become increasingly significant facilities. This study aims to identify the functions that rest areas fulfil now and potentially, and to consider ways that they can become a well integrated part of the tourists travelling experience.

The approach taken is firstly to consider tourists to understand as much as possible who they are and what they are travelling for. Given these aspirations attention is turned to the travel experience to analyse the inherent characteristics of high speed road travel and to identify opportunities presented by stopping. Section two looks at ways to integrate rest areas into the travel experience. This section looks principally at distribution planning, site selection and site treatment. A case study is then given in section three and the theoretical considerations previously outlined are tested on a real situation. An evaluation of existing provision is also made. Finally the factors responsible for the present problems are identified and recommendations are given.
THE TOURISTS' HIGHWAY EXPERIENCE
THE TOURISTS

Tourists are a diverse group of people even their purpose of being tourists varies widely. In order to be able to cater for them in rest area provision, it is necessary to understand their backgrounds and aspirations. To do this some recent statistics are helpful. The latest available are from the New Zealand Tourist and Publicity Department and relate to 1983 - 84. These will be quoted where relevant as an indication of the prevalent trends and patterns.

TOURIST NUMBERS

Total international tourist numbers are easily obtained. In the year ending March 1984 total visitor arrivals were 487658. This figure is expected to grow each year. Domestic travellers are more difficult to identify and thus no figures exist for these.
NATIONALITY

Of the international tourists 46% were Australians who accounted for 224100 arrivals. The majority of the remaining tourists come from other English speaking countries such as U.S.A. and Britain. It is significant, however, that almost 10% come from non English speaking countries, and this proportion is increasing. The effect of this is seen in the increasing provision for Japanese, for example in tourist literature and in signing. A noticeable trend is that an increasing proportion of tourists are coming from the Pacific area.

figure 2: Nationality of international tourists.
DEMOGRAPHIC CHARACTERISTICS

The most important age group of international tourists is from age 20 - 35 years. This group accounts for 33.7% of the total. No major discrepancy between the sexes exists.

Figure 3: Age patterns of international visitors.
TIMING OF TRAVEL

The timing of travel gives rise to strong patterns. These are illustrated in figure 4. The bulk of international tourists arrive in the summer months from December to February. Domestic travel is fairly consistent all the year round with a peak in December and January. This coincides with peak international tourist travel.

figure 4: Travel timing.
REASONS FOR TRAVEL

The reasons for travel show a fundamental difference between the international and domestic tourist. 53% of international tourists come for a holiday, 23% to visit friends and 12% on business. In comparison the majority of domestic tourists visit friends as their major objective.

Whatever the primary reason given for travelling is - the studies of the New Zealand Tourist Council (March 1984) clearly show that the diverse and spectacular natural environment of New Zealand is one of two main items of interest to the tourist. The other one is the lifestyle of the New Zealand people. The promotional literature of tourist companies such as the Mt Cook Line emphasize this and illustrate what the expectations of the tourist are likely to be.

You came for the sights — and you see them all
Get ready for a feast of New Zealand sightseeing with Mount Cook Line.
No other country offers such a concentration of dramatic and changing landscape; mountains, lakes, glaciers, thermal pools, green pastures, volcanoes.

There is also great interest in the New Zealand culture and lifestyle and in the landscape as an expression of this
"Visitors are now more interested in getting off the beaten track and seeing how New Zealanders live ...." and "The Natural assets are complemented by the New Zealand people, their lifestyle and culture and by the man made landscape."
This is reinforced by the popularity of places such as Shanty Town which illustrates an aspect of New Zealands history, the Rotorua Agrodome and trips to sheep stations such as Erewhon and Walter Peak - giving insight into rural lifestyle and the Whakarewarewa Maori Village, Rotorua - which depicts Maori culture. It is then, the total landscape as an expression of the relationship of people and the land, which is important, and not solely 'scenic' areas.

INTERNAL TRAVEL

The holiday experiences of tourist are many and varied. However it is important to highlight that New Zealand has become a touring rather than a one stop destination. Because of this the travel experience is very important. Once again
figure 5: Purpose of travel.
statistics allow some important conclusions to be drawn. The first is the general importance of road transport which accounts for about 80% of international tourists' internal transport and about 90% of transport of domestic tourists.

The second point is the importance of car travel within this, particularly for the domestic tourist (79%), but also for the international tourist - (44%). Coach travel is also of major significance for the international tourist - accounting for 31% of all internal transport. The Tourism Council however notes a trend away from coach travel towards more flexible modes of transport. The large and increasing importance of cars and campervans as modes of transport has important implications as people depend more and more on other than tour operators for interpretation of the country.

It is interesting to note that different national groups show strong trends regarding predominant transport modes. The Japanese and Americans tend to predominantly choose more structural coach tours with reserved itineraries, while the Australians and British tend towards more flexible itineraries and transport types (See Appendix C).

To get some idea of a typical holiday itinerary, the Newmans twelve day, two island tour will serve as an example.

In this particular tour, ten of the twelve days are spent travelling and 3150 miles are covered in this time. The distance travelled each day ranges from about 180 miles to 450 miles and averages out to about 300 miles per day. Timewise this represents about 6 hours per day spent in the vehicle travelling. Travel accounts for much more time when stops are taken into account. Thus the travel experience is the major significance to the tourist.
figure 6: Internal transport modes.
figure 7: Road transport.
Day 1: Christchurch/Mt. Cook/Omarama
We cross the Canterbury Plains to MacKenzie Country. Then past the fabulous scenic beauty of Lakes Tekapo and Pukaki to Australasia's highest peak — Mt. Cook. Time here for an optional ski-plane ride to view the Southern Alps, before turning south to Omarama nestled right in the foothills.

Omarama Motor Lodge.

Day 2: Omarama/Central Otago/Te Anau
Today's route takes us through varied, interest-packed countryside. With mountains always in the view the afternoon to Te Anau. One of the tour highlights. We travel via the Homer Valley, and on to Milford Sound. A leisurely drive up the West Coast of New Zealand. A sightseeing tour of the capital city is included this morning including a visit to the summit of Mount Victoria and Foxton. Wanganui is a delightful place. We show you geysers and boiling mud at Whakarewarewa, huge trout at Rainbow Springs and New Zealand’s star producers at the Agrodome. The rest is up to you. Make the most of it.

Day 3: Milford Sound excursion
One of the tour highlights. We travel past immense Lake Te Anau, through the beech forests of Eglington Valley, to the rugged Hollyford Valley and on to Milford Sound via the Homer Tunnel. Included is a launch trip on this majestic fiord surrounded by high peaks, glacial eroded valleys and torrential waterfalls. We return late in the afternoon to Te Anau.

Day 4: Te Anau/Queenstown
A short journey past the towering Remarkable range of mountains (so aptly named) takes us through to Queenstown, one of New Zealand's most popular southern resorts, set on the shores of “breathing” Lake Wakatipu. We stop here for 2 nights because there's just so much to see and do, Mountain View Lodge (2 nights).

Day 5: At Queenstown
A free day for whatever takes your fancy in this wonderful place. Climb a mountain — on foot or in an aerial gondola. Take a ride on a bus, a ferry, a jet boat, Water ski or snow ski. Ride a horse. Visit a museum. Or just stroll at leisure enjoying the sights and the scenery, the shops and the restaurants.

Day 6: Queenstown/Fox Glacier
A day of contrasts as we travel past sparkling Lakes Wanaka and Hawea, through Haast Pass to the awe-inspiring West Coast. The scenery changes from wild mountain pastures to bush country crossed by dozens of swift, icy rivers as we reach Fox Glacier. Fox Hotel.

Day 7: Fox Glacier/Hamner Springs
Our route takes us north through old gold mining areas and easy-going West Coast townships. The awesome Southern Alps are always in view, providing countless camera-grabbing opportunities. And this wild, wonderful coastline never fails to impress. Turning inland we travel through forestland and breathtaking river valleys to Hamner Springs. Relax here and enjoy the thermal waters of this popular holiday spa. The Lodge.

Day 8: Hamner Springs/Picton/Wellington
We head north up the East Coast through Kaikoura and Blenheim to Picton built beside the sheltered waters of Queen Charlotte Sound. Then it's all aboard the ferry boat for the crossing of Cook Strait. Sailing into Wellington Harbour is always an impressive sight. This compact city is built all over the hillsides with some amazing architecture in evidence. Upon arrival of the ferry you will be met and transferred to your central city hotel. Waterford Hotel.

Day 9: Wellington/Wanganui
A sightseeing tour of the capital city is planned this morning including a visit to the summit of Mount Victoria and Wellington's famed botanical gardens. A leisurely drive up the West Coast of the North Island takes us through the provincial towns of Paraparaumu, Levin and Foxton. Wanganui is a delightful city, built at the mouth of the river of the same name. Wanganui Motel.

Day 10: Wanganui/Rotorua
A day of extraordinary contrasts as we pass towering volcanoes (two of which still grumble), steaming hillsides, huge Lake Taupo, astonished geothermal power projects, and on to the fabulous sights, sounds and smells of Rotorua. We stop here for 2 nights — make sure you get to a Maori concert on one of them. Prince's Gate Hotel (2 nights).

Day 11: At Rotorua
A whole day at this unbelievable place. We'll show you geysers and boiling mud at Whakarewarewa, huge trout at Rainbow Springs and New Zealand's star producers at the Agrodome. The rest is up to you. Make the most of it.

Day 12: Rotorua/Waitomo/Auckland
Leaving Rotorua we travel west through the forested Mamaku Hills and on across rolling farmland to world-famous Waitomo Caves where we stop to explore fabulous limestone formations in the Glowworm Grotto. Then north to Auckland — New Zealand's biggest, sprawling city.

Tour Dates:
Tour Cost $1057 (with Breakfast and Dinner)
THE TRAVEL EXPERIENCE

The two major components of most tourists' New Zealand holiday experience, is time spent at tourist destinations and time spent travelling. Strong images of the countryside will develop from both these components, but a greater understanding of the essence of the country as a whole is obtained from time spent on the road. In contrast, destinations enable the tourist to explore specific landscapes at leisure.

SOME CHARACTERISTICS OF HIGH SPEED TRAVEL

Need for orientation.

High speed travel allows the tourist to observe a large number of landscapes in sequence. The travellers' response to this is to orientate themselves by looking for clues as to their

figure 8: High speed travel results in a biased image of the landscape.
location and absorbing images of the landscape which enhance understanding. This need for orientation varies along the route. Although the landscape constantly changes as one moves through it, there are points where marked character changes take place. It is at such points that the traveller is most aware of his environment and most attentive to clues as to the nature of the landscape character (Lands & Survey Dept. Kaikoura study 1983). These transition areas then are obviously zones of particular importance.

Factors resulting in a biased landscape image.

There are however characteristics inherent in high speed travel which give a biased or incomplete image of the landscape. High speed gives a false sense of scale. The impression of scale a pedestrian gets is different to that which a person travelling at 100 k/hr gets. Speed also acts as a filter whereby the amount of detail one is able to perceive reduces as speed increases. The eye is only able to see twelve separate images per second at the most. Therefore at high speed, foreground objects blur and more distant objects become the only meaningful features. High speed then simplifies the image of the landscape the traveller sees which will consist largely of the broad scale features. Whilst this gives a general impression it lacks the detail of the smaller scale which reinforces and enriches an understanding of the landscape character.

The vehicle also acts as a filter between the landscape and the tourist. Some degree of comprehension is lost due to sounds, smells and sensations of touch being very much reduced. In modern cars and coaches passengers travel in a comfortable micro environment no matter what the outside conditions are like. This makes the sense of vision even more dominant than usual. However even vision is affected and limited by the vehicle. Seating position and vehicle movement directs vision forward and sideways. Vision is thus framed and limited. This is especially so for the driver who must also concentrate on the road ahead. Difficulty in obtaining panoramic vision then, is another frustration for the tourist.

In comparison stopping enables people to observe the landscape in different ways. Stops are an integral part of travel and provide opportunity to enhance the broader scale appreciation of the landscape obtained from vehicles and so broaden the landscape experience. This will take place to some extent however stopping points are designed but it is desirable that stopping should enhance the travel experience whenever possible. This is possible in areas specifically designated to do this e.g. viewing points, but also in areas where the reason for stopping may be primarily functional.

Provision of a Microcosm of the Landscape.

Roadside rest areas have developed in most countries as safety features to allow travellers a place to pull off the road and relax, eat and use toilets. As well as catering for physical needs rest areas provide an opportunity to reinforce the character of the wider landscape which the tourists have observed from their vehicle windows. Having stopped they can get out and perceive the landscape in a much more immediate way. The true scale will become apparent as they move about on foot. Small details unable to be perceived at speed can be taken in and when they resume their journey the broader scale patterns will mean more to them. The sounds, smells and feelings which could not be perceived in the vehicle can be appreciated.

figure 9: Small scale details enrich the landscape experience.
Interpretation.

It is unlikely that the full meaning of landscape features will be understood without some form of interpretation. Rest areas provide a valuable opportunity for landscape interpretation through such features as information boards and interpretative walks. Interpretation has particular value in explaining the often subtle relationships between landscape forms and processes.
Enjoyment of interest points

Another facility rest areas provide is to allow tourists more time to appreciate views or features of particular interest, which explain the landscape and landuse. These would include spectacular physical features such as figure 11 and panoramic views. Interesting cultural features would also be included such as historic sites, or particular landuses e.g. Vineyards in Marlborough. Stopping, to enjoy views or features, is of particular importance where these are unable to be fully appreciated from the road due to the alignment or because of the small scale and level of detail of the attraction. As an example, an historic site will mean a lot more to travellers who stop to read interpretative material and experience the character and atmosphere of the place, than to those who merely view it for a few seconds as it flashes past their vehicle window.

figure 11: Opportunity to spend time at interest points.
Provision for Physical needs.

Rest areas should also provide for the physical needs of travellers. These needs fall into two main categories. Firstly those related to vehicle running and secondly those associated with personal comfort, safety and enjoyment. Needs related to vehicle running could include the needs for petrol, oil, water or to check or repair the vehicle. Human needs include the requirement for a place to rest, eat, sleep, exercise and use toilets. There is often a need for a safe place off the road to read maps, orientate oneself and plan the trip ahead.

figure 12: Road alignment may bypass features of interest. At such points rest areas are often appropriate.
CONCLUSION

1. The New Zealand landscape, both in its own right and as an expression of lifestyle is of great interest to the tourist.

2. New Zealand is a touring rather than a one stop destination and thus the travel experience is very important.

3. Road travel is by far the most important internal transport mode.

4. There are characteristics inherent in high speed travel which gives an incomplete image of the landscape.

5. Stopping in rest areas can compensate for many of these features as well as fulfilling the more traditional role of catering for user needs. Figure 13 illustrates the role rest areas can play.
Opportunity to provide for physical needs

Opportunity to provide for the needs of vehicle running

Rest Areas
Stopping to enhance safety enjoyment and understanding

Opportunity to enjoy points of particular interest

Opportunity to interpret the landscape

Opportunity to provide a microcosm of the landscape and enrich the journey through greater immediacy of experience.

Figure 13: Rest Area Functions.
INTEGRATION OF REST AREAS INTO THE TRAVEL EXPERIENCE
Introduction

This section investigates the problem of how to integrate rest areas into the travel experience in view of their various functions identified in the previous chapter. To do this there are two fundamental factors which must be considered. These are the landscape which provides both opportunities and constraints, and the users, the tourists, who have needs and aspirations.

Integration of rest areas into the travel experience is a problem which must be solved at three levels. Firstly, the broad scale planning of rest area distribution along the highway, secondly, site selection, and thirdly, site planning.

DISTRIBUTION PLANNING

The first step is to identify the overall distribution of rest areas so that they work together to enhance the travel experience as effectively as possible. The aim of distribution planning is to arrive at a series of general locations for rest areas of specified types.

HIERARCHY OF PROVISION

A fundamental consideration is distribution to cater adequately for travellers' needs. Appropriate frequency so that the needs for rest, toilets and eating facilities can be met is important. In New Zealand, which has few long motorways, towns provide for many of the travellers' physical needs but these are often sparsely distributed.
The distance between Omarama and Tarras on S.H.8 for example, is 83 miles. This sort of distance between settlements is not uncommon and thus rest areas have a potentially important role in catering for human needs.

Formulas of a rest facility per so many minutes driving time are useful as a guide. As examples, the State of California highway division suggest a facility about every half hour’s driving time. The Scottish tourist board suggest an interval of twenty four miles on motorways and six miles on two lane roads. In Germany, five mile intervals between sites is the average distance on autobahns. In New Zealand no policy is given regarding distribution and thus in practice it varies from a few minutes driving time up to over half an hour.

Related to frequency considerations is the level of facility provision and size of the site. This depends largely on the number of people who can be expected to stop per specified time period. This in turn depends on a number of factors including the numbers travelling the road and the
distance between other stopping opportunities. It is then a complex issue as numbers are not static and forecasting future numbers is difficult. The best sources of information for this are to be gained from user surveys such as those done in the United States. (See Appendix B.) If, as in New Zealand, these are not done, one has to rely on vehicle counts on the highways and to come up with some stopping ratio per half hour or hour.

Frequency level and amount of provision are related. Given a specific level of resources available for rest area provision and maintenance, a spectrum of opportunity exists with its end members being the provision of few but large and sophisticated rest areas and - many but smaller and simpler rest areas. There are advantages and disadvantages in both approaches. A large number of small, simple sites increases convenience and ease of access. However they will not be able to provide the range of facilities the other option could. It is generally accepted that in cost provision terms a small number of large more sophisticated sites is more efficient. This is due to factors such as transport requirements for maintenance gangs and the large initial costs involved in providing essentials, for example all weather surfacing. However this approach sacrifices access convenience.

![Diagram](image)

Figure 15: The relationship between rest area frequency and level of provision of facilities.
It must also be remembered that tourists cover a wide range of people with different preferences as to the level of privacy or facilities they expect. This suggests that a range of opportunities should be provided encompassing larger areas with many facilities and small simple pulloffs. The concept of a hierarchy of provision seems to have great merit. Laybys represent the most primitive provision. They may merely be a simple pulloff for a rest with perhaps a platform providing a surface for picnic meals. If however they owe their existence to a feature of special interest they should include interpretative material. It is recommended that laybys be provided between every five and fifteen minutes driving time. Picnic areas should provide shelter and toilets, platforms or tables for eating off and landscape interpretation aids if appropriate. The suggested frequency is a picnic area between every fifteen and thirty minutes driving time. Service areas represent the most sophisticated facilities, catering for vehicle service such as petrol sales and human service such as food sales and consumption (both indoor and outdoor). Toilets and shelter should also be provided. Landscape interpretation aids, for example billboards or educational walks, could be provided where appropriate. Service areas would only be required where the frequency of towns is too low to provide for user needs adequately. It is recommended that the frequency of service stopping provision should be from thirty minutes to one hours driving time. In all three cases the reasons for provision are both to meet the physical needs of tourists and to increase their landscape awareness.

A hierarchy of types of rest areas along these lines are found in other countries. Figures 16 - 18 give examples.

Although there is no policy to provide this in New Zealand a hierarchy of sorts does exist. Some rest areas are no more than simple laybys while others have a larger number of picnic spaces and facilities. Although not classified as rest areas, service points do exist such as illustrated in figure 21.
figure 16: British service area.

figure 17: American picnic area.

figure 18: American layby.
figure 19: Layby. (Kaikoura Coast).

figure 20: Picnic area (Kaikoura Coast).

figure 21: Service area (Kaikoura Coast).
<table>
<thead>
<tr>
<th>TYPE</th>
<th>FREQUENCY/ DRIVING TIME</th>
<th>FACILITIES PROVIDED</th>
<th>PRIME REASONS FOR PROVISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERVICE AREA</td>
<td>30 - 60 min</td>
<td>PETROL SALES, FOOD SALES, OUTDOOR AND INDOOR EATING, TOILETS, SPACE OFF THE ROAD, SHELTER, INTERPRETATION.</td>
<td>- TO MEET THE PHYSICAL NEEDS OF THE TOURIST DUE TO INADEQUATE TOWN FREQUENCY.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>- TO INCREASE LANDSCAPE AWARENESS</td>
</tr>
<tr>
<td>PICNIC AREA</td>
<td>15 - 30 min</td>
<td>SHELTER, OUTDOOR EATING, TOILETS, INTERPRETATION, SPACE OFF THE ROAD</td>
<td>- TO MEET THE PHYSICAL NEEDS OF TOURISTS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- TO INCREASE LANDSCAPE AWARENESS</td>
</tr>
<tr>
<td>LAYBY</td>
<td>5 - 15 min</td>
<td>SPACE OFF THE ROAD, OUTDOOR EATING, INTERPRETATION.</td>
<td>- TO INCREASE LANDSCAPE AWARENESS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- TO MEET THE PHYSICAL NEEDS OF TOURISTS</td>
</tr>
</tbody>
</table>

Figure 22: Rest area hierarchy.
figure 23: Theoretical distribution of rest area types.
MODIFYING FACTORS

A distribution such as this is however affected by landscape variables and modified accordingly.

Scale

The scale of the road and the landscape is one important consideration. In a landscape of large scale, similar features and views will be evident to the tourist for long periods of time and thus the desirability of stopping will not be great. In a smaller scale landscape with a greater variety of views and features a greater number of stops to experience this variety would be desirable.

figure 24: Landscape scale and rest area distribution.
Landscape Variety

The variety of landscape is also important. A greater number of character types per given stretch of road will result in the desirability of more rest areas per road length when compared to a large stretch of homogenous character.

figure 25: Landscape variety and rest area distribution.
Interest Points

The location of particular interest points will also affect general location and distribution. These places of particular interest to tourists include areas where there is a marked change in character. As the Lands & Survey Department (1983) Kaikoura study shows it is at these points that travellers are most aware of their environment and often take advantage of opportunities to stop to experience more fully the new landscape. The popularity of Oaro on the Kaikoura coast with north bound travellers can serve as an example. This is the first place where the road meets the coast. However this area has much less appeal for south bound travellers who have followed the coast for many miles already.

Points of particular interest also include spectacular physical features, views and interesting cultural aspects such as special land uses. The features which will be most important to the travel experience will be those which reinforce the character of the area.

figure 26: Contact with the sea at Oaro - a point of special interest to northbound travellers on S.H.1.
Landscape Capacity

The capacity of the landscape to absorb rest areas must also be considered. This is important not just from a physical point of view but also from the point of view of whether visible roadside development will be appropriate or what level of development will be appropriate in the particular landscape. In physical terms, some landscapes are ecologically sensitive and should not be developed to encourage people to stop or should only be developed within definite limits, to ensure that damage does not occur.

A landscape may also have limited capacity due to its dynamic properties for example the highway and associated facilities on the Kaikoura coast are in constant threat of marine erosion in many places. This has implications for the level and location of rest area facilities.

The landscape variables then can affect the theoretical model derived from efficiency to human needs and management efficiency goals to a large extent. Figure 30 summarises the many considerations involved in distribution planning. It suggests that the end result should be a modified plan of general locations and types of rest areas.
figure 27: The level of development required may be out of character with the rural environment.

figure 28: In ecologically sensitive areas roadside development must keep within definite limits.

figure 29: In locating rest areas - the possibility of severe natural events must be considered.
A fixed level of resources

Appropriate frequency to meet human needs

Appropriate size and level of facility provision to meet human needs

User preferences as to privacy and facility requirements

Hierarchy of rest area provision to meet the needs of tourists as efficiently as possible

Scale of landscape

Variety of landscape types

Location of particular interest points

Capacity of the landscape to absorb people and structures

Modified locations of rest areas

Figure 30: Rest area distribution planning model.
SITE SELECTION

When a general location has been decided upon from the distribution planning stage, the actual sites themselves can be selected by a detailed survey of the road and surrounding landscape.

Landscape Experience

The primary concern in location is to allow the tourist the best possible experience of the landscape. This entails selecting the points where the best views can be obtained. Also, if there are particular features of interest, for example waterfalls, these may affect the choice of location.

Microclimate

Other factors which affect the quality of the stopping experience relate to physical comfort. It is important to choose a site with a good or potentially good microclimate. Shelter from the wind and the presence of shade is of great importance. A site in which these are already provided would be the best situation. Shelter and shade can be provided through planting or earthworks. A site should be chosen however, where there is at least microclimate potential because of shelter provided by the structure of the broad scale environment or adequate soil conditions.

Suitable Terrain

A third obvious factor is the need for suitable terrain. It must be physically possible to locate all the needed facilities on land of suitable gradients. The amount of space required will vary with the type of rest area and the scale of the landscape.

Sight Distances

Another set of variables relates to the relationship of the site to the road. It is fundamentally important to be able to enter and leave the site with safety. Therefore there must
be adequate sight distances along the road in both directions from the exit point or points. The National Roads Board standards for sight distances on New Zealand roads for single entry rest areas are shown in Figure 31. Some rest areas such as laybys may require more than one entrance/exit point. Ability to provide for this is another control on site selection.

Turning Lanes

There should also be room beside the road for turning, acceleration and decelleration lanes to minimise collision danger with slower vehicles entering or leaving the rest area. This is illustrated in figure 32.
Visibility/Privacy from Road

A site which is visible from the road will usually be preferable to one which is not. Being able to see what to expect within a site helps the traveller in making the decision whether or not to stop. At the same time however, some privacy from the road is often desirable. Thus a site which allows for both these features should be chosen.

figure 33: Sites should be selected where it is possible to provide both privacy and views into the site from the road.
Road/Rest Area Transition

The relationship of the site to the road is important in another way. The transition from road to rest area should be as easy and natural as possible. Thus the best sites are those where it is possible to drive off the road at an easy gradient.

figure 34: A natural transition from road to rest area should be possible.
Pedestrian Safety & Comfort

The safety of pedestrians in rest areas is another factor to consider in site selection. The best buffer is a safe distance between the site and the road. If the comfort of tourists is likely to be compromised due to excessive road noise then a site which has solid physical barriers between it and the road such as an embankment would be suitable.

It is important to understand this at the site selection stage as treatment such as planting has limited effect in reducing noise levels. If however the tourist is unable to see the noise source it is of psychological benefit, [Bache and Macaskill: (1984)].

figure 35: Relationship to the road for safety and noise reduction.
figure 36: Rest area site selection model.
SITE PLANNING

At the planning stage the types of rest areas and the types of facilities required were established. Once the site has been selected it remains to integrate the needed facilities into the landscape. The requirements for rest areas would typically include some combination of all weather surfacing, toilets, shelters, signs and information boards, and design for enclosure and microclimatic reasons. These must all be provided in such a way that the safety of both motorist and pedestrians is enhanced, that damage is not done to the landscape, that maintenance requirements will be met, that the physical requirements of tourists are met and that the tourists' understanding and experience of the landscape will be enhanced.
LANDSCAPE STRUCTURE

The first set of considerations to provide these requirements is related to the landscape structure. This should reinforce the character of the landscape as much as possible.

Scale.

Firstly the scale of spaces within the rest area. For example it would be inappropriate to develop tight spaces within a rest area in the McKenzie country which is a landscape of vast scale.

figure 37: The scale of the landscape affects the appropriate scale of rest area spaces.
Views.

The landscape structure provided through planting, for example, can also reinforce the landscape character by controlling the views out of the site. Views which reinforce character can be highlighted while those which detract from the sense of place can be blocked.

Figure 38: Site structure can control view possibilities to reinforce landscape character.

[Diagram showing how site structure can control views to reinforce or detract from landscape character.]
Microclimate.

Site structure is also important from the point of view of the microclimate it creates. Structure can be manipulated to provide shelter, shade (which is important both for people and their vehicles) and adequate amounts of sun. An acceptable microclimate is one of the most important elements in any rest area.

Privacy.

Comfort is also affected in another way. It is desirable that adequate privacy is provided through the site structure both from the road and from other rest area users. Provision of a number of discrete or semi-discrete spaces is often a good solution. Alongside this need for privacy, however, rest areas should also have a cohesiveness befitting a roadside facility and should not give the impression of being a secondary road.

figure 39: A strong landscape structure should allow for privacy and an acceptable microclimate.
Safety.

The safety of travellers entering and leaving rest areas can be very much enhanced by attention to the landscape structure. Being able to see into the site while still on the highway helps the traveller in deciding whether to turn in or not, as the number of people already present and the character of the site will be obvious. This should decrease the occurrence of sudden breaking near the rest area entrance. Related to this is the need for adequate forewarning of rest areas through sign posting. Planting then should allow views into the site from the road, and should not obstruct the sightlines of vehicles along the road. This is illustrated in figure 40.

figure 40 : Landscape structure and sightlines.
Once the decision to enter the rest area has been made vehicles must be encouraged to slow down before reaching the site in the interests of pedestrian safety. The design of the access roads can include sharp turns and/or high degrees of enclosure to encourage this. They should also ideally allow a lot of slowing to be done off the road.

Pedestrian safety can also be enhanced by protection from cars leaving the road. The best protection is adequate distance between the site and the road. This is often not possible and thus a barrier of planting is often necessary for this purpose. (See figure 35.)

**Figure 41:** Access roads should incorporate safety features if possible.
MATERIALS

The materials comprising the site structure are of major importance. Every material used should reinforce the character of the place, and to this end materials characteristic of the area should be chosen. This applies to plant material, surfacing material and material used in structures such as buildings, tables and signs. Clues as to what is appropriate should be taken from both the natural and cultural elements in the surrounding landscape.

The materials chosen should be able to withstand environmental and human usage conditions of the site. Local material is often best for this. Vandalism is a particular problem in rest areas. This is another factor to bear in mind when choosing materials. If possible they should be hard, solid and durable as in figure 44.

A few basic structures are usually required in rest areas. These typically include picnic tables, signs and rubbish containers, and may include buildings, for example for toilets. The design of these must cater for the physical needs of tourists and at the same time reinforce the landscape character. All structures should create a degree of unity throughout a site and possibly along a tourist route, for example similar design and colouring of picnic platforms or signs. This may not be appropriate however if there are fundamentally different landscapes found along the route.
figure 42: Appropriate plant species in a rest area on the Kaikoura coast.

figure 43: The use of local gravel provides an appropriate surfacing.

figure 44: The use of heavy bridge timbers in this Kaikoura coast table unit is visually appropriate in the coastal setting and functionally sound as they are able to withstand the pressures of use.
STRUCTURE DESIGN

Design style should be decided on with respect to the landscape character, the scale and the characteristic forms and colours, either natural or cultural in the surrounding environment. For example if a particular style of building (e.g. Colonial) is typical of the area, the building proportions, style and motifs can provide a theme for structures in rest areas. Appropriate choice of colours for structures is a large and complex area of study [T. Heath (1980)]. However the basic principle of using colours which tone in with the landscape colours should be followed.

A major component of most rest areas is a picnic table/seating unit. In many situations a low platform such as figure 46 is the most appropriate design as it performs both the functions of a seat and a table and due to its simplicity and low profile is easy to integrate into the landscape. In comparison to this figure 47 is poor design.

figure 45: Natural colours help to integrate this building into the landscape.
figure 46: Low platforms are functional and easy to integrate into the landscape.

figure 47: Table units are not often appropriate in the rural landscape.
All structures should be designed to resist vandals as much as possible. To this end, the use of bolts or screws rather than nails is recommended.

Communication through signs is also an important aspect. With an increasing number of tourists coming from non-English speaking countries it is recommended that symbols are used as much as possible. These communicate more explicitly and efficiently than words and use less space. The example in figure 48 is from the New Zealand Parks Institute catalogue.

On interpretative boards, the use of illustrations, literary quotes and extracts in Maori where appropriate can deepen understanding and enrich the tourists' experience.

figure 48: Symbols take up less space than words, communicate more directly and can be understood by people of different languages.
53.

LAYOUT OF FACILITIES

The layout of the facilities which comprise rest areas is another very important part of rest area structure. There are different considerations for sites with more facilities such as service and picnic areas and sites with few facilities such as laybys. In all rest areas however, due to their very nature the relationship of pedestrians and vehicles is an important issue. In laybys, the prime concerns are to allow a safe place off the road for pedestrians, and easy vehicle manoeuvering. A variety of approaches to the level of separation of vehicles and pedestrians exists in different countries. In German laybys, for example, there is formal separation of cars from picnicing areas by a curb as shown in figure 49.

This kind of formality is not typical in New Zealand. People generally like to drive their cars as close as possible to their picnic place. Figure 50 illustrates a more suitable New Zealand approach.

figure 49 : Example of a German layby layout.
In this example a one way road is shown. This layout, as compared to a single entrance and turnaround area is generally favoured on the following grounds. It makes it easier to provide private spaces and allow people to remain close to their vehicles. It also provides for greater ease of manoeuvering buses and other large vehicles. Another recommendation is the placement of tables a reasonable distance from each other and in appropriate numbers to the number of semi-private spaces.

In laybys when interpretative material is appropriate it may be desirable to locate this as centrally as possible so that it is easily visible. It may also be desirable to locate car parking so that unobstructed views can be gained of features of interest from inside vehicles. This is so that tourists can view in comfort in adverse weather conditions and so that disabled persons unable to leave the vehicle easily are catered for.

Similar principles apply in service areas and picnic areas, however there are more facilities to
incorporate. Shops, shelters, cafes and toilets should be located centrally to encourage use. An example of the American - safety rest area approach is given in figure 51.

As in the German approach, the formal separation of vehicles and pedestrians is evident with the facilities being mainly located to one side of the defined parking area. A more satisfactory New Zealand approach is more informal and allows for vehicles to be parked nearer buildings and tables.

The provision of varying levels of facility provision within different areas caters for various preferences of travellers as to the sort of stopping experience they have.

figure 51: A United States safety rest area layout.
figure 52: A recommended New Zealand approach to picnic/service area layout.
figure 53: Rest area site planning model.
CASE STUDY

STATE HIGHWAY 1:
KAIKOURA TO CHRISTCHURCH
INTRODUCTION

This chapter provides an example of how the planning and design discussed in part two might work out in reality. It is mainly however an evaluation of rest area provision in New Zealand. The stretch of road chosen as the case study is state highway one from Kaikoura to Christchurch and is identified as a tourist highway. Its location is shown in figure 54.

This road runs along the east coast of the South Island but for much of its stretch the sea is not visible. The distance between Kaikoura and Christchurch is one hundred and ninety one kilometres and about three hours driving time. It is normally travelled as part of the journey between Picton and Christchurch, and Kaikoura
represents the half way break point. There are few towns of any note on the route. Woodend, Amberley and Cheviot are the only ones. The road has the characteristics of a typical New Zealand state highway, being tarsealed and with two lanes. The tourist image of the road can be gleaned from tourist industry publications such as figure 55.

The main attraction is seen to be the coastal scenery around Kaikoura with its dramatic transition from high mountains to sea. Interest also centres on the fishing and crayfishing industries. The rest of the road is passed off as pleasant but typical rural New Zealand. The road traverses a variety of country along the stretch and there are noticeable changes in character along its length. Figure 56 shows areas of different character and approximate change points.

figure 55: The image of the route the tourist is likely to have can be gleaned from tourist publications such as this N.Z.R. fun map.
Figure 56: The landscape character: Kaikoura to Christchurch.
APPLICATION OF HIERARCHY MODEL

This section endeavours to apply the hierarchy model outlined in the previous chapter to the particular human and landscape variables found in this study area. The suggested frequency to cater for physical needs is a service area (where needed due to lack of other provision) every half to one hours' driving time, a picnic area every quarter to half hours driving time and laybys every five minutes to fifteen minutes driving time. Due to the sparse distribution of towns on much of the route it is suggested that service areas are required between Cheviot and Kaikoura and between Cheviot and Amberley. Service provision is in fact made i.e. these areas at Creta Valley and the Conway bridge, proving the need for such facilities.

Calculation of User Numbers

The level of provision is dependent upon the number of people likely to stop per given period. No traffic surveys are done on rest areas in New Zealand and thus one must fall back on traffic counts undertaken on the highway for an indication of how many people are likely to want to stop. It must also be remembered that buses on tours and service runs use the route. Adapting the most recent M.W.D. traffic count figures for various points along the highway (see Appendix A) the following figures for vehicles involved in long distance trips can be used.

Kaikoura - Waipara - 1100 vehicles/day
Waipara - Christchurch - 3000 vehicles/day

Waipara is where state highway seven joins state highway one.

Using a stopping factor of six percent, based on work done in California, - [M.W.D., (1981)] for an average hourly period during the day it can be expected that the following numbers of vehicles will stop per hour.
Kaikoura - Waipara - 6 vehicles/hour
Waipara - Christchurch - 14 vehicles/hour

In the absence of any research these figures are a very rough guide only. However it can be concluded from this that these numbers of casual vehicle loads and bus loads will have to be accommodated through provision of adequate room and facilities.

FACTORS MODIFYING THEORETICAL DISTRIBUTION

Scale and Landscape

To decide where people will want to stop attention must also be turned to the landscape. As already outlined the landscape can be classified spatially. The Christchurch to Conway river section of road, passes through essentially large scale landscapes which have similar characteristics over long stretches and because of this the desirability of regular stops is not great. The Conway to Kaikoura stretch on the other hand passes through landscapes of smaller scale and this is one important reason why more stops are desirable in this section. Per given number of miles, the road in the northern half of the study area passes through a greater variety of landscapes as well, reinforcing the greater stopping desirability in this area than the southern part, which has less variety. (See figure 56.)

Interest Points

Certain areas can be identified at which point awareness of a change in landscape character is strong. There are places of particular interest to tourists and where stopping is often desirable. The areas identified are the Omihi area where the plains and rolling hill country characters meet, the Conway river area where the rolling hill country changes to steeper hill country, Oaro where the inland, coastal transition occurs and finally the Kahatura river area where rugged coastal landscapes give way to the coastal flats.
and mountain views of Kaikoura. These change points are identified in figure 56.

Other places of particular interest along the route include numerous viewpoints along the coast from Oaro to the Kakatura river such as shown in figure 57. The crayfish stalls also provide considerable interest. One particular point of historic interest is Panau Island which was used as a whaling lookout in the 1800's.

Landscape Capacity

There are no areas which have particularly sensitive ecosystems along the route, unable to cope with rest area development. The environment does however control provision to the extent that the road from Oaro to the Kahatura River is subject to marine storms which cause erosion of the road and associated development. (See figure 29.)

Given these various considerations a map showing the general locations of rest areas can be drawn as in figure 58. This map represents a hierarchy of provision modified according to the opportunities and constraints in the landscape. For comparison to this a map of existing provision is given in figure 59.
65.

**REST AREA LOCALITIES**

1. SERVICE AREAS
   - CONWAY RIVER
   - MOTUNAU
2. PICNIC AREAS
   - PAIO PT
   - GOOSE BAY
   - OMIHI STREAM
   - OKARAHIA STREAM
   - WAIAU RIVER
   - HURUNUI RIVER
   - SALT WATER CREEK
3. LAYBYS
   - KOHAI RIVER
   - KAHATURA RIVER
   - PARATITAHI TUNNEL
   - OARO
   - OARO HILLTOP
   - SECOND HUNDALEE HILL
   - FIRST HUNDALEE HILL
   - CONWAY BLUFFS
   - DOMMETT
   - TELEGRAPH GULLY
   - OMIHI SADDLE
   - WAIPARA

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**KEY**

- ■ TOWN
- ■ SERVICE AREA
- ◇ PICNIC AREA
- O LAYBY
- - LANDSCAPE CHARACTER CHANGE POINTS

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**figure 58:** 'Ideal' rest area distribution.
Figure 59: Existing rest area distribution.
EXISTING PROVISION

In mapping existing provision some difficulties arise as to what to include as rest areas. Wayside petrol stations and shops have not been included as their provision is for primarily commercial reasons and thus they do not fall under the appropriate definition. A planned hierarchy of facility provision does not exist. However, there is a range of provision from merely a space with no facilities (which are often difficult to identify from wide road margins) to areas with tables and rubbish containers. These are shown in figure 59. This lack of a hierarchy of provision means that the physical needs of the tourist are not very well met as most of the existing sites provide few facilities and would be classified most comfortably as laybys. In only three sites (all reserves) are toilets provided and these sites are all close together near Goose Bay. There are too few sites in some areas. For example between Amberley and Cheviot only two sites are provided. Thus in this section of the road it is possible to drive for over half an hour without finding a rest area. However in some areas particularly the Kaikoura coast section there are too many rest areas with too few facilities. This is a most inefficient situation and is contributing to degradation of the roadside landscape.

On the whole however the distribution reflects the scale of the landscape and the perceived level of scenic attraction. Similarities in density of provision with the ideal distribution can be seen. There are rest areas in each landscape type and in all the places identified as being of particular interest to the tourist. In particular the Omihi Saddle, the Conway River, Oaro, McInness Mistake and the Kohai River.

Thus the distribution which exists is largely satisfactory. It requires some rationalization however to cope properly with tourist needs.
SITE SELECTION AND DESIGN

Three examples will be given to illustrate present site treatment and the practical application of the considerations outlined in part two. These have been chosen to illustrate the spectrum of quality typically found in New Zealand rest areas. Okarahia rest area illustrates the highest quality generally found, while Hawkeswood Stream rest area is an example of the worst kind of situation one could expect. Hurunui rest area will also be included as a more typical example. The location of these sites is shown in figure 59. Evaluation will be made against the criteria outlined in part two.

EXAMPLE ONE: OKARAHIA REST AREA

This site is located in the Hundalee Hill landscape zone, characterised by steep hill country. The site is in a valley base, beside a stream and straddles the road. It is thus almost two sites rather than one. Provision and maintenance is by the Ministry of Works and Development for the National Roads Board. The layout, character and setting are shown in figures 60 and 61.

The specific location of this site is particularly successful. Characteristic views of hills and native vegetation both internal and external to the site can be seen in all directions. The proximity of the stream is a bonus as it provides opportunities for casual activities such as exploring the stream bed and paddling. The protection of the surrounding hills and the presence of large trees already existing provide for a suitable microclimate with adequate shade, shelter and sun. Suitable terrain is available on a series of river terraces. Also it is possible to have adequate sight distances along the road in
figure 60: Okarahia rest area: Sketch plan.

KEY

- EXISTING NATIVE TREES
- EXISTING EXOTIC TREES
- NEW NATIVE PLANTING
- DOWN SLOPE
- GRAVEL SURFACE

OKARAHIA STREAM

NORTH

0m 10m 20m 30m

APPROX. SCALE 1:500
figure 61: Okarahia rest area: Character.
both directions. Approximately three hundred metres can be seen to the north and one hundred and thirty metres to the south. This is within reasonable safety margins, given that the recommended travelling speed adjacent is seventy kilometers per hour. Safety could be improved however if turning lanes were provided. The site also allows for some degree of privacy from the road due to the screening effect of existing vegetation embankments, and at the same time allows views into the site. It is possible also to have adequate distance between the site and the road for pedestrian safety.

As the photos show, this site has only recently been developed and thus planting is still immature. However it is possible to tell that a strong structure has been provided for by the planting and will enhance the existing microclimate and privacy. A number of small semi-private spaces have been created in keeping with the relatively small scale nature of the particular landscape. At the same time it will still be possible to get views into the site.

A negative point is the dual nature of the site as this entails having two entranceways. This has the effect of confusing the decision of where to turn in. It would have been better to have had one entrance leading to a larger area on the east side of the road, if possible. Planting does not appear to interfere with sight lines along the road for existing vehicles. The new planting along the roads will however provide an effective barrier against cars leaving the road and thus enhance pedestrian safety. This is needed because pedestrian spaces have been created very close to the road.

No internal roadways have been defined. Rather, the whole surface has been spread with gravel. This provides a very hard treatment and one which does not constrain the speed of vehicles adequately. It has though cut down on maintenance requirements. The surfacing material is local gravel. This is also used in the road and looks very much in character. The plant material used also reinforces character as species used are native to the area. Some exotics already present such as willows have been allowed to remain.
These are to be phased out gradually and at the moment provide valuable shade.

As with most New Zealand rest areas, the only facilities provided are table/seating units and rubbish containers. The design of these is standard throughout the case study and is shown in figure 62. Forty-four gallon drums are used as rubbish containers and are unsightly and unsuitable due to the ease with which they rust and are vandalised. The table design is 'fussy' and not well suited to the rural landscape. Painting them an olive green colour does not help to integrate into the natural, changing colours of the background landscape.

Site layout is very informal and flexible. A series of spaces has been created and site furniture can be moved about within and between these. It is possible to drive right up beside a picnic table and there is no separation of vehicles and people. Due to the nature of the terrain it is not possible to provide a one way road with two exits and thus a turn around area is needed within each site. A criticism of these turn
arounds is that while they cater adequately for a cars turning circle it would be difficult to turn a bus in this rest area.

Despite the very good potential of this site to provide interpretative material about the landscape, none is provided.

EXAMPLE TWO: HAWKESWOOD STREAM REST AREA

The site is located in the northern end of the landscape zone of rolling hill country. It is situated on the inside of a sharp bend in the road adjacent to a winding section of step grade. Its provision is by the Ministry of Works and Development for the National Roads Board. The layout, setting and character are shown in figures 63 and 64.

The selection of this site for a layby is not due to the presence of any views or features of particular interest, however pleasant views characteristic of the landscape are present. The site has no trees or shrubs which enhance shade and shelter requirements other than a large Eucalyptus tree adjacent, which does provide some shade. Landform to the south and east also contribute, providing some shelter. Suitable terrain is limited and the rest area has been constrained by land boundaries and thus development has been right beside the road. The motorists' safety when entering and leaving the
figure 63: Hawkeswood stream rest area
: Sketch plan.
figure 64: Hawkeswood stream rest area

Character.
site is adequate as sight distances of about eighty metres can be obtained in both directions along the road and the recommended travelling speed is forty kilometres per hour. Due to the slow speed of traffic it is considered that acceleration and deceleration lanes are not required.

The fundamental problem with this site then is its lack of suitable terrain and position on the road margin. This automatically makes pedestrian safety, privacy and road noise problems which may or may not be solved by appropriate site treatment. Site treatment however is non-existent except for the provision of a ground surface and a table/seating unit and rubbish container. As the photographs show, the site resembles a wide road margin rather than a rest area. The table unit and rubbish container are the only features which make the site resemble a rest area, and these look ridiculously out of place. The site furniture is the same design and construction as those in the Okarahia example and the same comments apply.

**EXAMPLE THREE: HURUNUI RIVER REST AREA**

Like the previous example, this site is located in the landscape zone of rolling hill country. It is situated below a river terrace beside the Hurunui river and near the Hurunui bridge. Again provision is by the Ministry of Works and Development for the National Roads Board. The layout, setting and character are shown in the following figures.

Although there are no views or features of particular interest, the site has the potential to offer characteristic views of the river and surrounding landscape. It also allows contact with the river which is of interest although a little dangerous. An excellent microclimate is offered due to the presence of large willow trees which provide shelter and shade and also the position below the river terrace provides shelter. The site also offers terrain which is suitable for rest area and development. Sight distances along the road of two hundred metres to the north and three hundred metres to the south ensure that vehicles entering and leaving the site may do so
figure 65: Hurunui river rest area: Sketch plan.
figure 66: Hurunui river rest area:
Character.
with safety. Safety could be enhanced however by the provision of turning lanes. Due to the presence of the river terrace between the site and the road, privacy from the road, low noise levels and a high degree of pedestrian safety are features of the site. It is however difficult to see into the rest area from the road.

On the whole then, the site for this rest area is a good one. The treatment however makes what could be a highly successful rest area a rather disappointing one.

The existing willow trees which provide a strong spatial structure enclose the site to an extent that it is difficult to obtain views of the landscape. Although the trees provide a good microclimate they are not placed to provide for discrete spaces within the site, and thus privacy is not created. An access road is provided into the site, however this has not been designed to ensure that vehicle speed is kept low, although the fact that one has to descend to the lower level is a check on speed. The experience of entering this site is spoilt to a large degree by having to drive past large unscreened gravel stockpile areas either side of the road. Another negative point is that no internal roadways have been created with softer grass areas either side, - rather the whole surface has been spread with gravel. This treatment makes the rest area look like an extension of the stockpile areas on the terrace above. Not only does it look unsightly and prevent a more restful experience but it also encourages vehicles to travel faster than they should. The gravel used does not look out of place as it is of local origin. The plant material used is almost exclusively one species of willow. Willows are characteristic species of the area and are therefore appropriate. However there would be more visual interest if a wider range of species was used. As an example poplar species would also be in character. The only facilities provided are table/seating units, rubbish containers and fireplaces. All these show signs of vandalism. The tables and rubbish containers are the same as those described for the other two examples. The fireplace is of concrete construction but was too badly damaged to be able to tell much else. What is obvious is the unsuitability
of the design as it fails to withstand pressures of use and vandalism. A major problem in this site in particular but also found in many others is the large amounts of litter lying around. There is also evidence that a need for the provision of toilets exists. These problems could be minimised with better facility provision. Another problem highlighted in this site but common throughout New Zealand is the use of rest areas by road maintenance staff for gravel stockpiling places. These stockpiles detract from the visual quality of the sites. No interpretative material is provided despite the potential for this.

As with the previous examples, site layout is informal and flexible. Again, due to constraints set by terrain, a one way road with two exits is not possible and a turn around area has been provided. In this site, turning both buses and cars would be possible to do with ease.
CONCLUSION

Assuming that this case study is a fair representation of other highways in New Zealand, the following points about rest area provision can be made.

The distribution of rest areas along the highway generally caters well for the tourist from the point of view of providing for an enhanced experience as provision normally reflects the scale of the landscape and the location of interest points. It does not however cater as well for user needs mainly due to the lack of a planned hierarchy of provision. This also leads to problems such as a lack of basic facilities, for instance - toilets.

Site treatment in general leaves a lot to be desired. User needs of privacy, adequate microclimate, safety and comfort are often not met due to the lack of provision of adequate spatial structure or functional site furniture design. As well as this, rubbish, the lack of interpretation and the often hard, insensitive treatment leads to a less than optimum landscape experience for tourists.
FACTORS RESPONSIBLE FOR PRESENT PROBLEMS

A number of interrelated factors are responsible for the present problems. These are outlined below.

1. Inadequate policy for rest area provision

The National Roads Board is responsible for all New Zealand roads although it delegates this responsibility to various bodies such as the Ministry of Works and Development. The only two policies that the N.R.B. have regarding rest areas is a policy to provide them and a policy not to provide toilets in them. There is therefore a fundamental lack of direction as to distribution and facility planning and site selection and design. Because of this lack of direction most rest areas have been provided in one of three ways. They could have been developed in a location considered suitable by highway staff. This was often due to identification of need for stopping by observation of travellers. They could also have been developed as the best use for odd pockets of land left over from bridge construction or realignment. A third way is for them to have been developed from stock site areas which travellers were regularly observed to stop in. In very few cases have highway surveys been done to establish the most suitable locations.

The policy not to provide toilets is a real problem as a need obviously exists for these.
figure 67: Rest areas are often developed on land left over from bridge construction.

figure 68: Rest areas may be developed in popular gravel stockpiling areas.
2. Multiplicity of responsible organisations.

More than one organisation is responsible for rest area provision. These include the Ministry of Works and Development, the Department of Lands and Survey, the Department of Forestry, Local county councils and private enterprise. This often leads to problems of cooperation. For example in the case study the large number of rest areas which are too close to each other is partly due to the fact that both the Ministry of Works and Development and the Department of Lands and Survey have created them without thought as to the overall distribution.

3. Limited design input.

Most New Zealand rest areas, and in particular the older ones, have been developed without landscape architectural input. For example, in the case study area, the majority have been developed at the discretion of the Ministry of Works and Development resident engineer and highway overseer.

4. Lack of funds.

Money for Ministry of Works and Development rest areas comes from miscellaneous works or landscape improvement funds which are quite limited. This means that upkeep of toilets for example, is out of the question given the present financial and organisational structures. It is also difficult to get money for their provision. It appears that more funds are available for Lands and Survey department roadside reserves.

5. Perceived function of rest areas.

Rest areas are primarily seen as safety features to enhance the convenience and safety of the motorist. The opportunities they present to interpret the landscape for tourists are largely ignored.

There is lack of control within organisations such as the Ministry of Works and Development to ensure that the landscape quality of sites is not detracted from and that the sites are adequately maintained. A big problem in many rest areas is the temporary stockpiling of gravel for road maintenance. This problem is merely a symptom of two other problems. The first of these is the lack of other suitable stockpiling sites. The second is the lack of control on highway staff to upkeep the visual quality of the sites.

figure 69: Gravel stock piles: a problem in rest areas.
RECOMMENDATIONS

To rectify the present problems identified in rest area provision on New Zealand roads the following general recommendations are made.

1. **An holistic approach to rest area provision and highway planning and design should be taken.**

   In all highway planning and design, the location of rest areas should be considered as early as possible. As the experience of travellers should be a prime concern, the location of rest areas should be considered at the same time as the alignment and should be able to influence this.

2. **There should be coherent policy regarding rest area provision to ensure that tourists' physical needs are met and that their landscape experience is enhanced.**

A hierarchy of rest area provision (as outlined previously), modified according to the particular highway characteristics is recommended. Also there should be a greater number of guidelines as to appropriate planning and design of rest areas given by the National Roads Board. The policy not to provide toilets should be rethought as a need obviously exists.

3. **There should be greater co-operation between organisations with jurisdiction over roadside land.**

   This is needed to ensure that there is an integrity along the highway and to provide for the best distribution and site treatment to meet tourists' needs and enhance their experience.

4. **There should be greater co-operation and control within organisations responsible for rest areas.**

   This is important if the quality of rest
area environments is to maintained. For example there should be control on dumping gravel stock piles in rest areas.

5. Greater design involvement is required.

Landscape architects should be involved in distribution planning, site selection, site planning, implementation and management planning. This involvement is important to ensure treatment which is in character with the landscape, which caters for user needs and aspirations and which is realistic in terms of provision and maintenance costs.

6. Greater funding levels are required in organisations responsible for rest area provision.

In organisations such as the Ministry of Works and Development it is recommended that a separate fund is kept for rest area provision and maintenance from other highway concerns, to ensure that resources are not used up in other ways. This is felt to be justifiable given the growing importance of tourism and the potential value of rest areas to this.

7. A data base to allow for informed development should be encouraged by the National Roads Board.

This would involve collection of information relating to existing highway conditions and opportunities and also information relating to user demands and preferences.
APPENDIX A.: CALCULATION OF PROBABLE USER NUMBERS


<table>
<thead>
<tr>
<th>State Highway</th>
<th>Route Distance</th>
<th>Location</th>
<th>AADT</th>
<th>Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>7</td>
<td>Picton - Blenheim Koromiko</td>
<td>2230</td>
<td>C101</td>
</tr>
<tr>
<td>15</td>
<td>26</td>
<td>Blenheim North Boundary</td>
<td>5100</td>
<td>102</td>
</tr>
<tr>
<td>15</td>
<td>49</td>
<td>Seddon North</td>
<td>1610</td>
<td>103</td>
</tr>
<tr>
<td>15</td>
<td>89</td>
<td>Wharanui Marlborough / Kaikoura County Bridge</td>
<td>1090</td>
<td>104</td>
</tr>
<tr>
<td>15</td>
<td>105</td>
<td>Clarence North of Clarence River</td>
<td>840</td>
<td>K 2</td>
</tr>
<tr>
<td>15</td>
<td>151</td>
<td>Kaikoura South of Postmans Road</td>
<td>1520</td>
<td>K 3</td>
</tr>
<tr>
<td>15</td>
<td>155</td>
<td>Kaikoura M.W.D. Highways Depot</td>
<td>1870</td>
<td>K 4</td>
</tr>
<tr>
<td>15</td>
<td>162</td>
<td>Kaikoura Kohai River Bridge North of S.H. 70</td>
<td>1790</td>
<td>K 7</td>
</tr>
<tr>
<td>15</td>
<td>212</td>
<td>Pamassus Leader River Bridge</td>
<td>1170</td>
<td>C 2</td>
</tr>
<tr>
<td>15</td>
<td>228</td>
<td>Cheviot Township</td>
<td>2890</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>245</td>
<td>Hurunui River 1.5 km North</td>
<td>1360</td>
<td>7</td>
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<tr>
<td>15</td>
<td>283</td>
<td>Waipara North of S.H. 7 Junction</td>
<td>1600</td>
<td>11</td>
</tr>
<tr>
<td>15</td>
<td>285</td>
<td>Waipara South of Waipara River</td>
<td>3480</td>
<td>12</td>
</tr>
<tr>
<td>15</td>
<td>307</td>
<td>Ashley River North of Saltwater Creek</td>
<td>3590</td>
<td>C 16</td>
</tr>
<tr>
<td>15</td>
<td>317</td>
<td>Woodend South of S.H. 72 Junction</td>
<td>5590</td>
<td>17</td>
</tr>
<tr>
<td>15</td>
<td>319</td>
<td>Christchurch Motorway at Pinehaven North</td>
<td>2160</td>
<td>18N</td>
</tr>
<tr>
<td>15</td>
<td>319</td>
<td>Christchurch Motorway at Pinehaven South</td>
<td>2350</td>
<td>185</td>
</tr>
</tbody>
</table>
2. Estimation of the number of vehicles involved in long distance trips.

Estimation of vehicle numbers involved in long distance trips as opposed to short distance trips (and thus not requiring rest stops), is difficult. It is felt however that at a remote counting station such as Pamassus, most traffic would be travelling long distances. Thus a rough figure of 1100 can be arrived at for the Waipara - Kaikoura stretch.

At Waipara where S.H.7 joins S.H.1 a marked increase in vehicle numbers is seen. 3000 is felt to be a fair number for long distance trips. Obviously however, this is conjecture only.

3. Estimation of the number of vehicles stopping per hour.

Figure 70 is a graph showing percentages of vehicle numbers counted per hour for one station in the case study area.

From this it can be seen that 8% is a reasonable percentage of daily totals to use for hourly periods in daylight hours.

8% of 1100 - 88 vehicles per hour
8% of 3000 - 240 vehicles per hour

Using a stopping factor of 6% based on work done in California [M.W.D., (1983)], a figure can
can be arrived at for an average number of vehicles stopping per hour.

6% of 88 - 5.28 vehicles per hour
6% of 240 - 14.4 vehicles per hour
APPENDIX B: EXAMPLE OF REST AREA USER SURVEYS

(Iowa State Highway Commission - Highway planning surveys department).

<table>
<thead>
<tr>
<th>SEASON NUMBER</th>
<th>MONTH</th>
<th>DAY</th>
<th>YEAR</th>
<th>STATE</th>
<th>COUNTY</th>
<th>DATE</th>
<th>NUMBER OF PERSONS IN VEHICLE</th>
<th>NUMBER OF VEHICLE IN TRAFFIC</th>
<th>FACILITIES USED</th>
<th>PURPOSE OF STOP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<td>10</td>
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<td>3</td>
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<td>5</td>
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<td>7</td>
<td>8</td>
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<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

1. Passenger car or station wagon used for camping
2. Passenger car with utility trailer
3. Passenger car with travel trailer (includes tent trailer)
4. Passenger car with boat trailer
5. Pickup camper or self-propelled camper
6. Pickup or panel
7. Single unit truck
8. Truck tractor and semi-trailer
9. Truck and trailer combination
10. Busses

1. Dog and cat
2. Horse
3. Other
### Appendix C: Tourist Transport and Accommodation

Demands by Country of Origin (1983)

<table>
<thead>
<tr>
<th>Transport</th>
<th>Accommodation</th>
<th>% Share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Australians</td>
</tr>
<tr>
<td>Coach Tour</td>
<td>Reserved Itinerary</td>
<td>34</td>
</tr>
<tr>
<td>Rental Car</td>
<td>Reserved Itinerary</td>
<td>17</td>
</tr>
<tr>
<td>Rental Campervan</td>
<td>Flexible Itinerary</td>
<td>22</td>
</tr>
<tr>
<td>Public Services</td>
<td>Flexible Itinerary</td>
<td>17</td>
</tr>
<tr>
<td>Public Services</td>
<td>Flexible Itinerary</td>
<td>8</td>
</tr>
<tr>
<td>Friends Vehicles</td>
<td>Homes of Friends</td>
<td>12</td>
</tr>
</tbody>
</table>
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