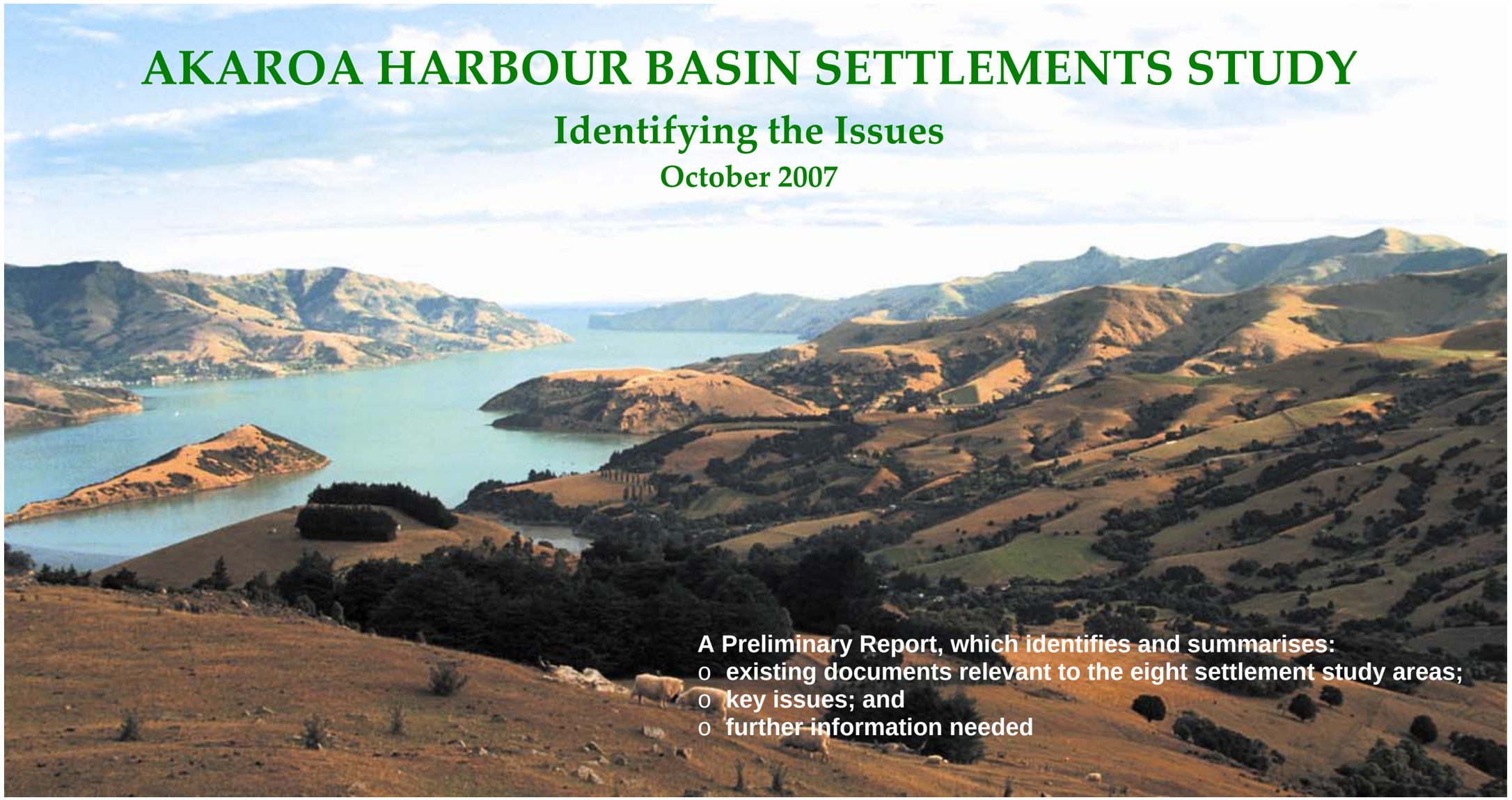
AKAROA HARBOUR BASIN SETTLEMENTS STUDY

Identifying the Issues

October 2007



A Preliminary Report, which identifies and summarises:

- **existing documents relevant to the eight settlement study areas;**
- **key issues; and**
- **further information needed**

Strategy & Planning Group, Christchurch City Council

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  - freshwater resources
  - soils and slope stability
  - contaminated sites
- Chapter 7 'Physical environment'
  - stormwater management

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Cover image: Banks Peninsula Tourism and Economic Development

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TABLES AND MAPS

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Glossary of abbreviations

The following abbreviations are used in this document:

AHA	Akaroa Historic Area
BPCT	Banks Peninsula Conservation Trust
BPDC	Banks Peninsula District Council
CCC	Christchurch City Council
CCM	Christchurch and Canterbury Marketing
CDA	Comprehensive Development Area
CDHB	Canterbury District Health Board
CHRANZ	Centre for Housing Research Aotearoa New Zealand
CMA	Coastal Marine Area
CNCL	Coastal Natural Character Landscape
CRLTS	Canterbury Regional Land Transport Strategy
CRPS	Canterbury Regional Policy Statement
DC	Development Contribution
DCP	Development Contributions Policy
DoC	Department of Conservation
DSL/DSLAM	Digital Subscriber Line / Digital Subscriber Line Access Multiplexers
ECan	Environment Canterbury
HAIL	Hazardous activities and industries list
HL	Heritage Landscape
HNZ	Housing New Zealand
ICPA	Interim Coastal Protection Area
IPCC	Intergovernmental Panel on Climate Change
LGA	Local Government Act 2002
LTCCP	Long-Term Council Community Plan
LTNZ	Land Transport New Zealand
MHWS	Mean High Water Springs
MOU	Memorandum of Understanding (between CCC and BPDC)
NCC	National Climate Centre
NES	National Environmental Standard
NRRP	Natural Resources Regional Plan
NZCPS	New Zealand Coastal Policy Statement
NZHPT	New Zealand Historic Places Trust
ONL	Outstanding Natural Landscape
PBPDP	Proposed Banks Peninsula District Plan ('the District Plan')
RAP	Recommended Area of Protection
RMA	Resource Management Act 1991
SH 75	State Highway 75
sqm	square metres (m^2)
TLA	Territorial Local Authority
UDS	Greater Christchurch Urban Development Strategy
VAL	Visual Amenity Landscape
WWTP	Wastewater treatment plant

Clarification of terminology used in this document:

'Christchurch Urban Area' refers to the area administered by the Christchurch City Council prior to amalgamation with the Banks Peninsula District Council.

'Christchurch/Banks Peninsula Area' refers to the current jurisdiction of the Christchurch City Council (Christchurch City and Banks Peninsula).

Glossary of Maori terminology

The following Maori terms have been used in this document:

Kai moana	Shellfish/seafood
Mahinga kai	Garden/cultivation
Pā	Fortified village
Tangata Whenua	Local people, indigenous people of the land
Taonga	Possessions/treasures
Urupā	Burial ground
Waahi tapu	A place identified by Tangata Whenua as spiritually or culturally significant
Wairua	Spirit/life-force

Other Maori terms used in this document include:

Rūnanga / Te Rūnanga o Ngai Tahu
Ngai Tahu hold tribal authority over the Banks Peninsula Area. Throughout the South Island, there are 18 local rūnanga (local councils). Two of these rūnanga (Wairewa and Onuku) are located within the Settlements Study Area. An elected representative from each rūnanga makes up Te Rūnanga o Ngāi Tahu – the tribal council that oversees the tribe's activities.

Horomaka is the Maori name for Banks Peninsula, however sometimes the name ***Te Pataka o Rakaihautu*** (the food/store house of the Paramount chief Rakaihautu) is also used.

1. INTRODUCTION

Strategic Planning Study

Why did the Council decide to do this study

This study evolved from the original request from members of the Akaroa community for a 'town plan' that would address some of the issues being experienced in the township. While there was no firm scope or brief developed for the plan, some of the issues appeared to be more strategic in nature (eg water supply, impacts of settlement growth) and others more site-specific (eg campervan parking, use of the vacant BP Meats site). Budget was included within the Banks Peninsula District Council Annual Plan / Long-Term Council Community Plan for a 'Greater Akaroa Community Plan'.

Following amalgamation with Christchurch City Council it was recognised that we first needed a clear understanding of the issues facing Akaroa, and how these issues might also be spread across the wider harbour basin area. **Having an understanding of the broad issues helps to identify appropriate options, and also assists in providing a strategic framework which will support future decisions about more site-specific issues.**

Why strategic studies?

In general, strategic planning studies serve as a tool/process for managing future land use changes and addressing issues that may be arising within communities. When we take a proactive role in planning and co-ordinating our settlements, this can help to avoid the potential for higher development costs (public and private), inefficient resource management and poor community outcomes. We need to look out 25 – 30 years into the future in order to make sound decisions today.

What is the scope of the study?

Issues facing Akaroa are primarily urban-based, and so the study has focussed on the urban settlements of the harbour basin, specifically:

- Akaroa;
- Takamatua;
- Robinsons Bay;
- Duvauchelle;
- Barrys Bay;
- French Farm;
- Tikao Bay; and
- Wainui.

Eight study areas encompassing each of these settlements have been developed and are shown on maps in Chapter 3. These are merely **areas of information-gathering**, and certainly should not be misunderstood as being planned settlement growth areas. Any rural issues will be noted separately and may be addressed in future studies if the need arises.

What are the longer term outputs?

The final output, next calendar year, will be a document identifying Issues and Preferred Options for managing the settlements. The document will be made up of maps, tables and other information that provide a broad framework and direction for addressing issues in the Harbour Basin. It is likely that this will involve a number of future workstreams, for example methods to manage any future settlement growth, seasonality of the economy, and the changing population structure. Some workstreams may require approval through the Long-Term Council Community Plan (**LTCCP**) process, and this will be identified in an Implementation Plan which will indicate tasks, priorities and responsibilities for addressing issues.

The exercise will:

- assist in defining community aspirations through providing a basis for discussions with communities, landowners, developers, public agencies and consultants;
- examine technical issues, including those relating to the natural environment, land use, transport, open space, community facilities, amenity, and infrastructure; and
- identify opportunities and constraints within the eight settlement study areas.

Various opportunities will be available during the course of the Settlements Study for public consultation and feedback.

Change is inevitable. Our responsibility lies in being responsive to trends and being proactive in managing change by ensuring that the fundamentals of environmental sustainability, infrastructural provision and the means to enable a thriving community are in place.

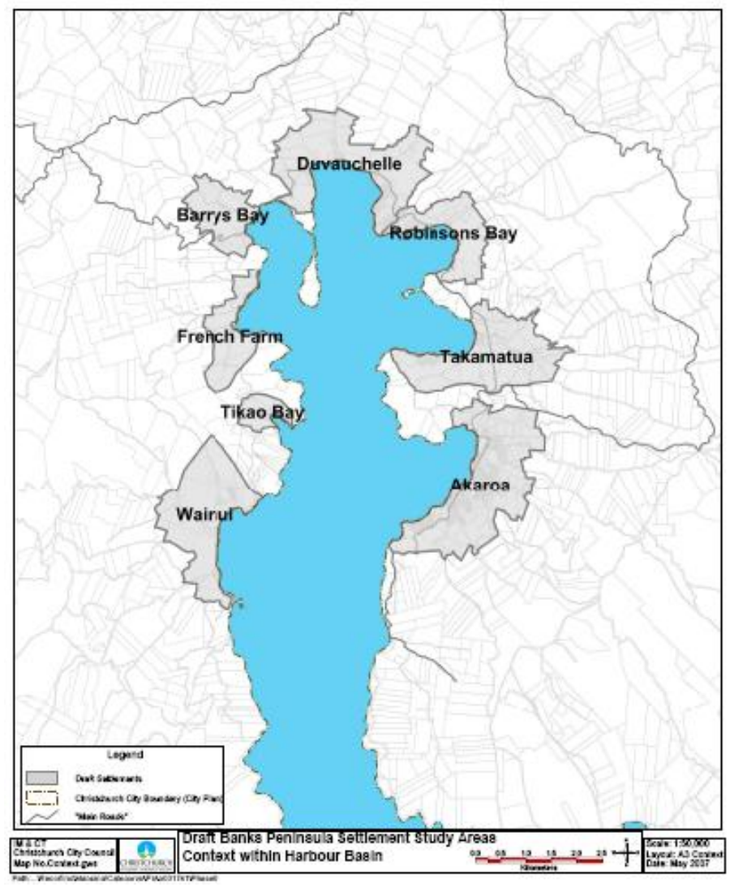
This Document

This document signals the commencement of the strategic planning study; it is not the final output. Over 90 existing reports that have some bearing upon the Akaroa Harbour Basin and its settlements have been summarised. The key, more strategic-level issues are identified at the end of each chapter, as are any gaps in our existing information. This document is the first attempt to identify the issues in the Basin. Following public consultation, a final Issues document will be prepared. Discussion with various Council units has occurred in the preparation of this document, to ensure that a consistent approach is taken across the Council to strategic planning in the harbour basin.

This is not an academic paper, so information sources are not noted within the text. However, the source material that has contributed to the content of each chapter is acknowledged in the Bibliography section at the end of this document.

Please help us to ensure that we have all the issues and information gaps noted – the success of future strategic planning for this locality depends upon a good understanding of the issues.

Map 1: *Settlement study areas in harbour basin context - the settlements and their immediate hinterland**



*Note: these areas are identified for information gathering purposes and in no way suggest urban growth potential.

Next Steps

Further Issues Document
Once we have received feedback to this document, we will refine the issues as necessary and prepare a final document which sets out the issues that the study will address.

Information gathering
Information needs that are identified throughout this document will be prioritised and the critical information will be gathered. Settlements will be assessed and those with the least constraints to future development will be identified so that more detailed investigations can occur as part of future Council workstreams. This is important to ensure that any demand in these areas is appropriately managed and co-ordinated, including the protection of any key features.

Options and Assessment
As noted above, options for addressing issues will then be developed, together with criteria for assessment. Further consultation will occur prior to any preferred options being adopted.


Akaroa Harbour Basin (Photo courtesy of Boffa Miskell Ltd)

2. OVERVIEW OF THE DOCUMENT

Structure of Document

This document discusses a range of information pertinent to strategic planning for the eight settlements within the Akaroa Harbour Basin: Akaroa, Takamatua, Robinsons Bay, Duvauchelle, Barrys Bay, French Farm, Tikao Bay and Wainui. Maps showing the extent of these study areas are provided in Chapter 3. Chapter 4 provides a more specific overview of the settlements in terms of their subdivision and land use patterns. The subsequent chapters (5 to 8) then discuss in turn the natural, social, physical and economic 'environments' pertaining to the study areas. Chapter 9 of this document discusses the challenges associated with managing urban change in general. The final chapters set out some key policy documents and summarise the further information identified in the report.

At the end of each chapter (or in many cases, the end of a section within a chapter), a number of issues are identified. A 'snapshot' of a selection of the key issues raised in this document is set out below. For further information on these and other issues, please refer to the relevant chapter for more detail. Additional information requirements are also identified within each chapter.

Snapshot of Issues

Settlement Pattern

Settlement and Subdivision

Many of the settlements each contain several 'pockets' of urban development interspersed with rural land.

- Continuing this pattern would lead to ad hoc and scattered urban settlements which are difficult to service.
- Potential for long-term settlement consolidation is limited where there are significant distances between the urban pockets that form each settlement (eg French Farm, Barrys Bay, Robinsons Bay and parts of Takamatua and Wainui).
- Areas identified in the Boffa Miskell landscape study as having potential to absorb change may not support a more consolidated urban form.

Natural Environment

Climate change

Climate change is likely to give rise to:

- changes in the distribution and health of indigenous ecosystems, habitats and species;
- reduced surface water availability;
- increased likelihood and intensity of rainfall events;
- increased soil erosion and sedimentation of rivers and streams;
- sea level rise, coastal erosion and inundation; and
- increased risk of surface and coastal water contamination.

Water quality

Water quality in streams and rivers is relatively low, and additional development could make this worse if it is not appropriately located and managed.

Flood hazards

Areas prone to flooding during high rainfall events have not been adequately identified. This creates uncertainty over appropriate locations for any future settlement consolidation or expansion.

Land instability and landslide susceptibility

Areas prone to soil and slope instability are only known for some locations. Residential development in such areas can:

- place pressure on the Council to provide and maintain infrastructure in hazardous areas;
- cause siltation of water ways; and
- put property and lives at risk.

Contaminated sites and soils

Potentially contaminated areas are not well-known or suitably identified.

Landscape

There is pressure for coastal housing upon open coastal ridgelines.

Social Environment

Population and dwelling trends

Dwelling and visitor numbers are increasing even though residential population growth is stable, the workforce is ageing, and residential households are small. These trends can lead to:

- o difficulty servicing the high season population with business facilities, health services etc;
- o a reduced sense of community identity for residents;
- o infrastructure issues at peak population times; and
- o pressure to develop housing in sensitive locations.

Recognition of historic character and heritage values

Character and/or heritage values in some settlements (eg Akaroa historic character, archaeological sites and 'silent files' of waahi tapu sites) could be compromised due to development pressures, if not carefully identified and managed.

Physical Environment

Wastewater planning

- Spare capacity within existing/new reticulated wastewater schemes may give rise to development pressures, and additional subdivision may not be appropriate in the locality.
- Older reticulated wastewater systems can experience difficulty managing variable flows caused by fluctuating populations, so any population increases for such settlements may require upgrading of infrastructure.

Water supply

A combination of:

- reliance on rain-fed streams in steep catchments (with limited vegetation to prevent quick run-off);
- water loss from leaking pipes;
- limited storage capacity;
- peak demands during the tourist season; and
- uncertainties associated with global warming

results in difficulty with adequacy, reliability and efficiency of water supply for existing and future populations

Stormwater management

Ad hoc urban developments may give rise to cumulative stormwater effects, particularly in the absence of any catchment management plans, and 'low impact design' of stormwater systems may not fit easily with the character of some settlements.

Transport

Travel between settlements is affected by the lack of public transport facilities (including bus and ferry), walkway linkages, and dedicated cycle routes which limits travel options for commuters.

State Highway 75 severs some settlements, which creates difficulties in supporting more consolidated communities. Future development may also place pressure on strategic roading networks.

Increasing reliance on the motor vehicle, together with dependence on fossil fuels, makes communities vulnerable to increases in living expenses and fuel prices. This may impact upon the tourism economy and could also result in residents within the small, scattered residential pockets struggling to provide for their social and economic wellbeing.

The historic character and narrow streets of Akaroa create difficulties in providing both on and off-street parking for activities that attract increasingly higher numbers of vehicles; this leads to pressures on pedestrian safety, residential amenity and road network efficiency during the peak tourist season.

Footpaths in settlements are often absent, narrow, and bordered in places by steep drainage channels. This situation can restrict access or create hazards for the less mobile.

The coastal landscape - spur separating Duvauchelle and Robinsons Bay Photo courtesy of Boffa Miskell Ltd

Economic Environment

Labour market

Growing businesses experience difficulty in accessing a nationally competitive labour market, particularly in recruiting seasonal workers; a further increase in job vacancy levels is predicted.

Distribution of commercial activity

There is little long-term planning direction given to how business activity should be distributed, or to providing a framework for more self-sufficient settlements (possibly needing a small business zone) which may be required in the long term due to changes in population and infrastructure provision.

Industrial land supply

There is no industrially zoned land within the harbour basin, requiring any proposals for industrial activity to either locate elsewhere (eg Lyttelton or Christchurch), or apply for resource consent/plan change. This limits opportunities for economic diversification.

Housing affordability

Strong growth in land and house prices, slower rates of income growth and a very high proportion of holiday homes are creating housing affordability problems for current/potential permanent residents and for seasonal workers. This can make it difficult for families to move to the area and for businesses to retain and attract staff.

Employment in tourism

Economic dependence on tourism makes the Basin vulnerable to changes in the tourism economy, including any downturn in response to global events or a changing host environment (eg due to climate change).

Seasonality of tourism

There is a widening gap between the least and most popular months to visit which accentuates 'seasonality' of the economy. This impacts upon:

- the viability of tourism businesses;
- the ability to attract and retain experienced and qualified staff; and
- pressures on infrastructure and emergency services.

3. SETTLEMENT STUDY AREAS

The Akaroa Harbour Basin is the eroded remnant of an ancient volcanic crater. The action of the sea and streams has formed a pattern of valleys, cliffs and bays that have long been home to both Maori and European settlers. The settlement of the harbour basin commenced seven or eight hundred years ago and is still continuing today as roads improve, communications infrastructure becomes more sophisticated, and structural engineering develops to enable buildings to be sited on steeper ground.

Urban settlements are clustered around the northern half of the harbour basin, from Wainui in the west to Akaroa in the east. Onuku marae is also a feature of the harbour basin. The various settlements range in size and in their degree of urban/rural character. The area is a popular holiday spot and many of the urban settlements comprise a large number of holiday homes.

Eight study areas

This study focuses on the eight settlements within the Akaroa Harbour Basin which currently have some urban zoning. That is, they contain 'Residential' or 'Small Settlement' Zones in the Proposed Banks Peninsula District Plan (**PBPDP**).

Two of these settlements have urban zoning that is contiguous (or adjoining): Akaroa and Tikao Bay. All other settlements comprise several pockets of urban zoning, each separated by areas of Rural Zone. For example, Takamatua has a 'pocket' on the north-facing headland, a 'pocket' in the inner bay, and a 'pocket' inland up Takamatua Valley Road. Despite the 'pockets' nature of the basin's urban zoning, two settlements have in fact become virtually joined across a headland: Duvauchelle is now separated by only a sliver of Rural Zone from Robinsons Bay (and indeed there has been some discussion as to where to draw the 'line' separating these settlements).

The key point is not so much how to define these settlements, but how to determine a sensible study area which includes and surrounds these settlements. Therefore the fact that the Duvauchelle and Robinsons Bay study areas are adjoining is not significant. Each study area is simply an area within which we will gather information so as to better understand the settlements, their functioning, their potential or otherwise for growth in the future and any other constraints or opportunities (eg integration of walkways and subdivision patterns).

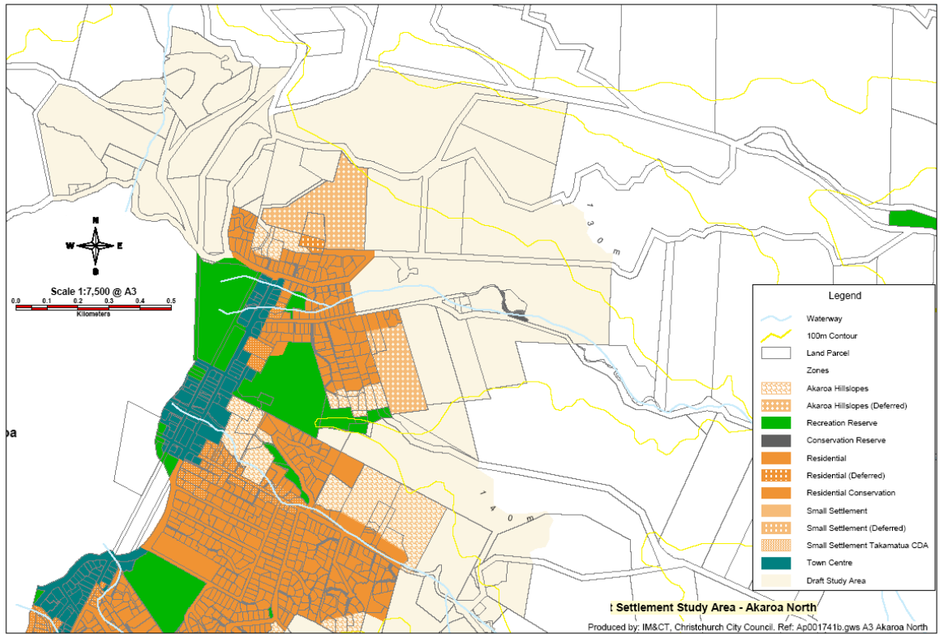
Study area boundaries

A 500 metre distance from the edge of the urban zoning (including deferred zoning in the case of Akaroa) was determined. This was then adjusted to take into account any ridgelines, waterways, contour lines or allotment boundaries that would provide a more sensible edge to the study area. Key information outside of this area may also prove to be relevant (eg landslide risk) in which case it will also be acknowledged as the study progresses.

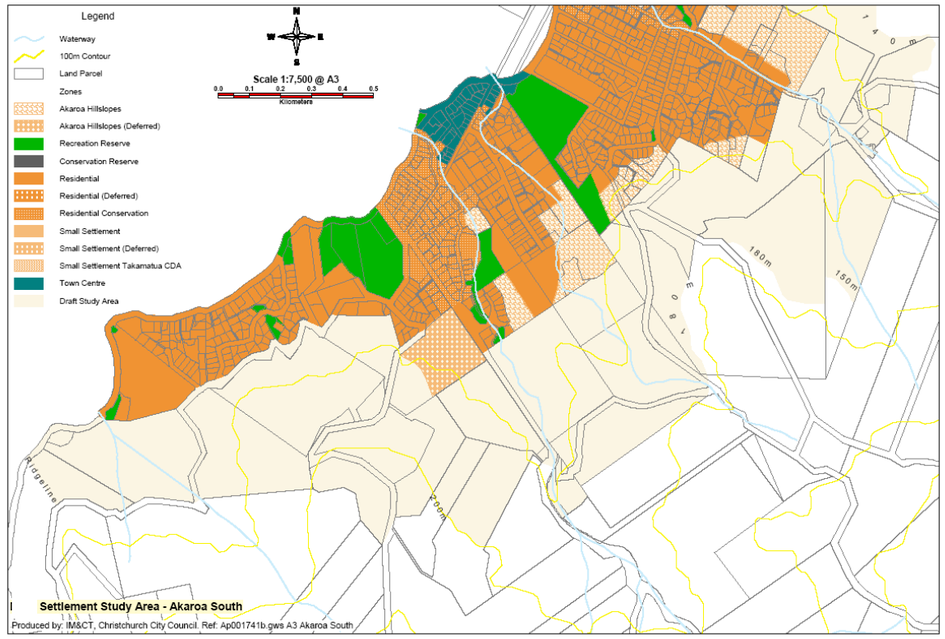
Each settlement study area is shown below, with some of the current District Plan zoning shown for context.

Duvauchelle settlement – a pocket of urban zoning surrounded by rural land

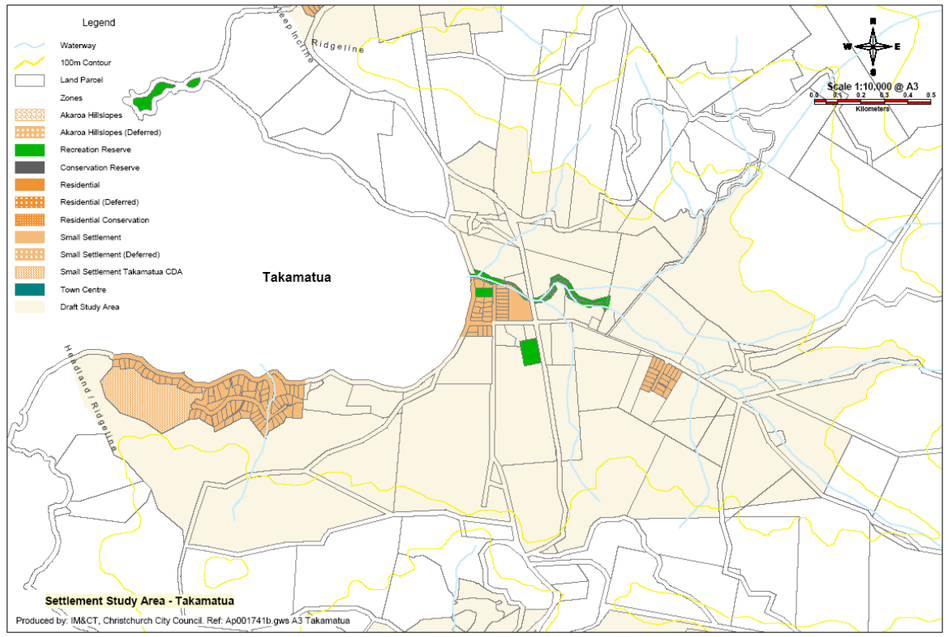
***Map 2**: Akaroa North*



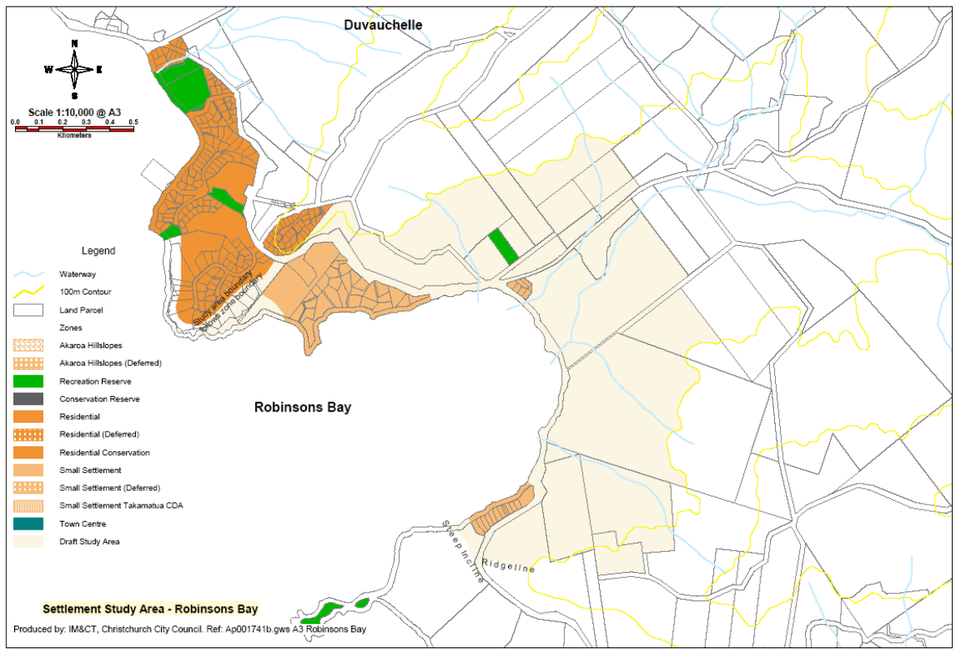
***Map 3**: Akaroa South*



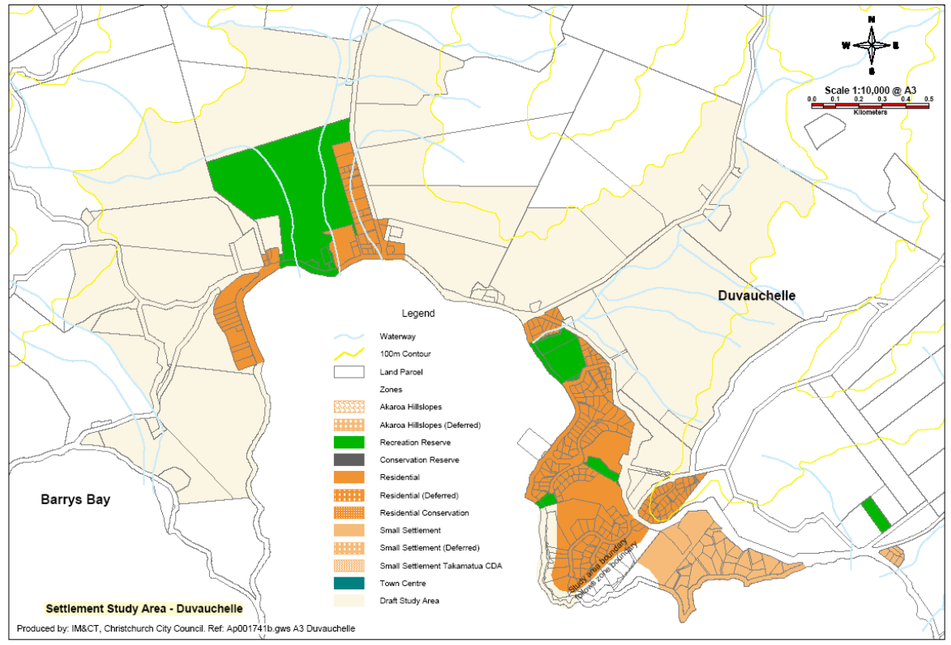
Map 4: *Takamatua*



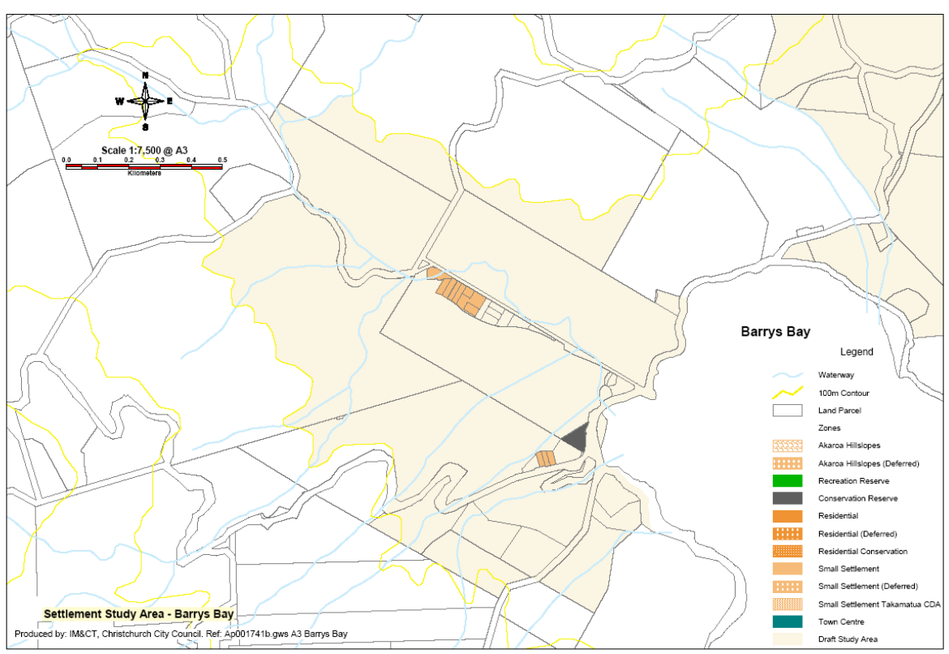
Map 5*: Robinsons Bay*



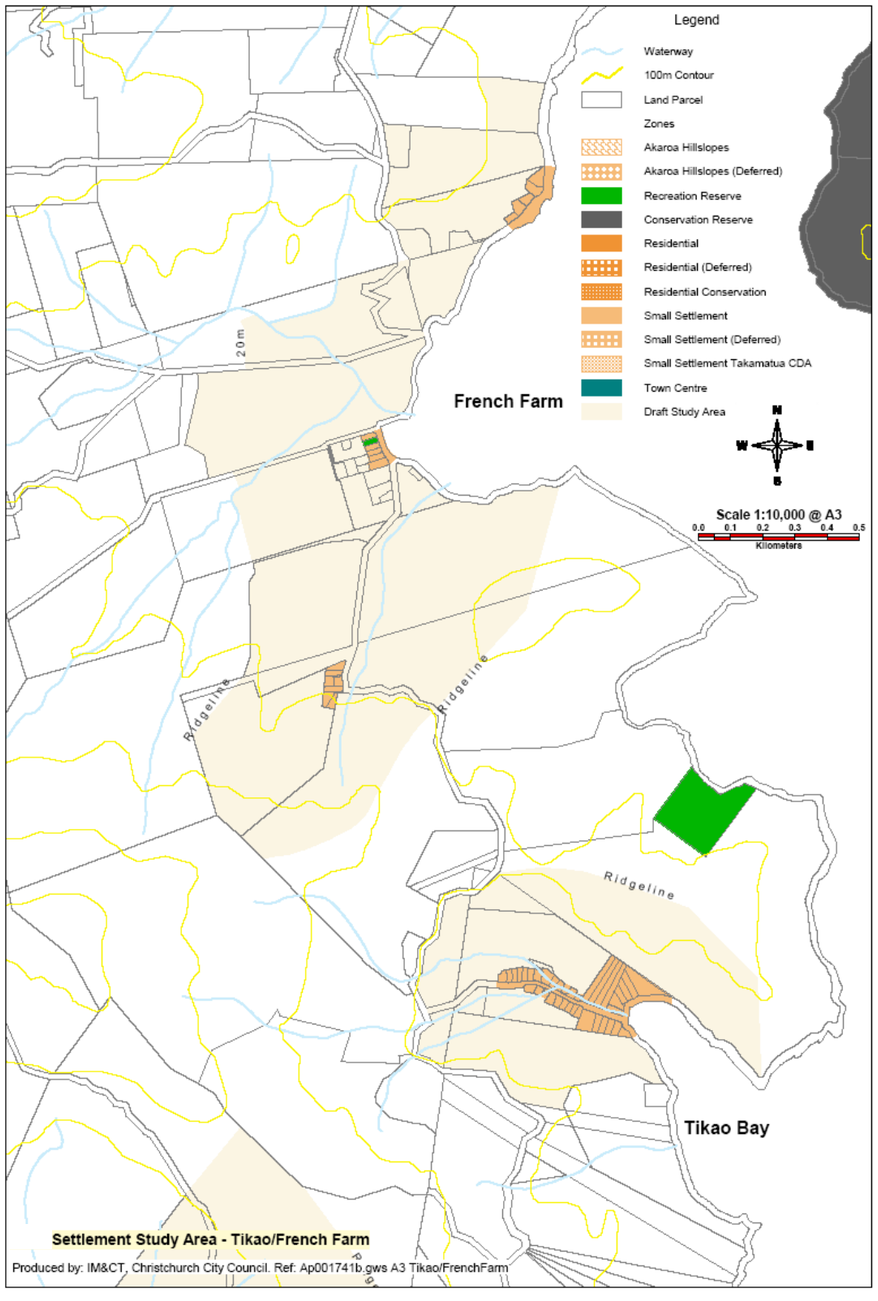
Map 6*: Duvauchelle*



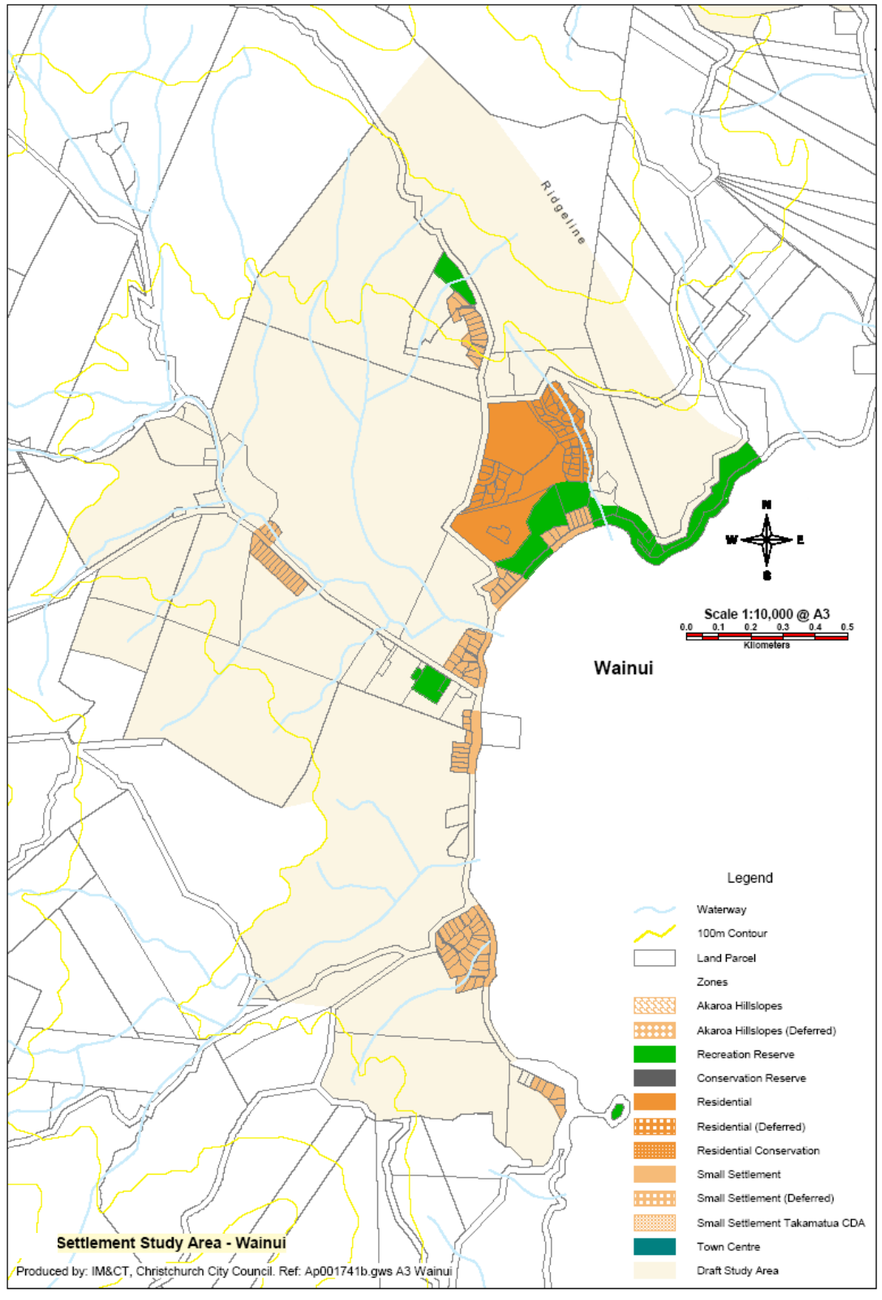
Map 7*: Barrys Bay*



***Map 8**: French Farm and Tikao Bay*



***Map 9:** Wainui*



4. SUBDIVISION AND LAND USE WITHIN SETTLEMENTS

The Akaroa Harbour Basin has been a popular area to reside in since first discovered by the original Maori settlers around seven or eight hundred years ago. Populations and land uses have fluctuated since that time, often in response to economic opportunities. The existing subdivision and land use pattern informs us as to the degree of urbanisation that has occurred to date in the study areas, and where this is most predominant.

Subdivision Pattern

Settlement location

As noted in Chapter 3, the urban subdivision pattern within the harbour basin has created a series of small pockets of settlement around particular bays. The name of each bay has been adopted for the name of the settlement, although most settlements are comprised of several 'pockets' of urban zoning rather than one contiguous area. The stability of land, access to water and historical land use associations have all been important factors in determining the past location and extent of settlements.

In general, urban subdivision has located within the bays of the harbour basin rather than on the headlands. The exception to this is at Ngaio Point between Robinsons Bay and Duvauchelle. This land was zoned for residential purposes many years ago, although it wasn't taken up for this purpose until more recent times. It is highly unlikely that this form of subdivision would be approved in the future, although the ability to decline an application for this sort of development relies strongly upon the provisions of the District Plan.

Allotment sizes

Most of the settlements use septic tank systems for disposal of wastewater and this requires a larger allotment size. The 'Small Settlement' zoning reflects this and also fosters the less dense urban character desired by communities. Where such services are reticulated, smaller allotment sizes can be achieved, as reflected by the 'Residential' zoning. However, reticulation is not the only factor in determining allotment size, as landscape values also have an important part to play in limiting residential densities. For example, the Akaroa Hill Slopes Zone has a 5000sqm minimum site area compared with 400sqm in the Residential Zone. The particular nature of the land (eg steepness) may also have an impact upon the size of urban allotments and whether they are well-connected by road or require the use of cul-de-sacs. Market demand for certain sized sections also influences allotment sizes. For example, a recent subdivision plan for residential land in Wainui shows most sites being between 600-800sqm in area, whereas the District Plan allows for a 400sqm minimum area.

Larger sections are acknowledged as a part of providing a diversity of housing choice, although higher density development in Residential Zones is regarded as more efficient, in terms of transport and infrastructure use, and helps achieve walkable living environments. The practice of Greenfield subdivisions having relatively uniform section size has started to change in the last few years. This is partly as a response to market shifts and partly in response to Environment Court decisions around the justification for rezoning rural land to residential. Developers in larger urban areas are now providing up to 15 households/ha in new greenfields subdivisions, with mixed densities of smaller homes on smaller sections and larger lot sizes to meet demands for differing housing choices.

Tikao Bay – the settlement hidden from view (Photo courtesy of Boffa Miskell Ltd)

Land Use / Subdivision Interface

To fully understand the nature of the eight settlements, a first step lies in identifying how the land is currently taken up. In some cases, it is not appropriate to rely upon the existing zoned urban edge as there is often a blurring of this interface due to both subdivision sizes and existing land uses. **Appendix A** sets out tables for each settlement study area and provides a summary of each zone, its location, and the key features associated with it, particularly in relation to subdivision sizes and non-rural land use. The paragraphs below summarise the subdivision and land use of each settlement. Later chapters will focus in more detail upon various constraints and opportunities that should be factored into any discussions on managing long-term growth potential.

Wainui

There is one large area of Residential zoning (partly subdivided) and eight small pockets of Small Settlement Zone. The majority of Small Settlement Zone allotments contain a dwelling, and most appear to be around 850sqm in size. At present, urban activities are not entirely confined to the urban zones within the valley floor (for example, dwellings, a tennis court, and a church are located in the Rural Zone) and there may be demand and perhaps opportunity to consolidate this settlement further. Key factors, including land stability, reticulation of services, potential land-based disposal of wastewater, flooding potential and aspect, will most likely provide the key opportunities and constraints for any long-term growth of this settlement. The settlement sits directly across the harbour basin from Akaroa and may provide a focus for longer term settlement, given the proposed reticulated wastewater system, the potential for ferry linkages if population increases enable the viability for such a business and the lack of heritage character that constrains Akaroa's growth. The Response Planning document suggests that while Wainui offers significant life-style opportunities, the likelihood these will be realised in significant numbers is reduced by the lack of community and commercial facilities. However, it is not unreasonable to expect people in their early retirement to permanently move into the area, particularly if they have previously owned a holiday home in this location. 'Spill over' development from Akaroa is considered to potentially include commercial accommodation development, increased numbers of holiday homes and some supporting infrastructure such as a small commercial centre, particularly in summer.

The broad bay of Wainui (Photo courtesy of Boffa Miskell Ltd)

A report produced this year by Boffa Miskell Ltd identifies areas which have lesser landscape value and therefore more potential than other areas to absorb change in the landscape. A large area around Wainui Valley Road falls within this category, and would warrant further investigation. Further chapters of this report will give more detail on the relevant planning factors for Wainui's future.

Tikao Bay

Tikao Bay study area is the smallest of all the study areas, bounded to the north by a ridgeline and to the west by Wainui Main Road. Land zoned for sewage treatment purposes lies immediately uphill of the settlement. Urban activity is presently occurring only within the Small Settlement Zone, hidden deep within the valley, and most sites (which range from 170sqm to 0.5ha) have dwellings on them. Some very long and regular shaped parcels extend uphill into bush-covered land. This zone and the neighbouring parcels have waterways running through them. Further investigation may be needed regarding capacity of existing infrastructure and any other constraints, particularly pertaining to the parcels immediately adjacent to the Small Settlement Zone.

French Farm

The small size of each of the three pockets of urban development, combined with the distance between the various pockets, suggests that there would be little sense in attempting to connect these over time. However, the spread of housing within the Rural Zone immediately adjacent to the inner bay area (on allotments ranging from 1000sqm to 4100sqm) suggests that there is demand for housing in this location. The Boffa Miskell report identifies a reasonably large area extending inland from the inner bay area which could absorb future change in the landscape. There may be opportunity to focus limited additional small-scale development here in the longer term. This will be investigated further in later chapters and as the study develops.

Foreshore at French Farm Bay (Photo courtesy of Boffa Miskell Ltd)

Barrys Bay

Development in this location is likely to have arisen historically through association with the cheese factory. Some of the smaller allotments have not been taken up for dwellings, yet some of the rural area has lifestyle blocks. It is possible that demand in this location is for larger lifestyle sites rather than traditional urban development. Barrys Bay Valley Road is unsealed and is not formed past the settlement; it is along this road that the Boffa Miskell report identifies an area with potential to absorb change.

Duvauchelle

The uptake of residential land in Duvauchelle has focussed around the west-facing headland where allotment sizes are larger than might be expected for a residential zone (averaging approximately 1000sqm). This may be due in part to the steeper contours of the land in this location, although the market is likely to have a strong influence. The settlement is well-endowed with reserves; the reserves take on more of an urban nature around the headland where they are of a smaller size and provide for linkages. This also reflects the less regular nature of the subdivision pattern. There is a cluster of community facilities and business activities within the inner bay; this is the only settlement outside of Akaroa with such a focal point. The Response Planning document notes that Duvauchelle offers significant life-style opportunities, which are increased by the existence of the community and commercial facilities, and considers that the settlement may provide a popular choice for 'spill over' development from Akaroa. However, the Boffa Miskell report has not identified any part of this settlement as having the potential to absorb change, despite the nearby flat area of Pipers Valley Road, and so it is likely that landscape values will prove to be a significant constraint to any future consolidation of the settlement. This tension between opportunities and constraints will be covered in more detail as the study progresses.

Robinsons Bay

For the purposes of this study, Ngaio Grove has been included within the Robinsons Bay study area, and Ngaio Point within Duvauchelle. Robinsons Bay has merged with Duvauchelle to a degree at Ngaio Point, despite the narrow strip of Rural zoning just below the ridge. There certainly appears to be demand for the Archdalls Road land area which has developed in accordance with the larger subdivision sizes promoted through the District Plan for Small Settlement Zones. Like French Farm, the small size of the two older pockets of urban development in the inner bay and clifftop south, combined with the distance between the pockets, suggests that there would be little sense in attempting to connect these over time. The Boffa Miskell study identifies an area partly within the study area along Robinsons Bay Valley Road with potential to absorb further change. However, this area is currently dislocated from the existing settlement areas and would therefore not appear to warrant a high priority investigation at present. Nevertheless, the inner bay area is the only realistic area that could benefit from closer scrutiny and information-gathering as the study develops.

Takamatua

The Comprehensive Development Area (**CDA**) on the headland has subdivision rules that require much larger allotments than the remainder of the Small Settlement Zone. This is as a result of negotiated agreement with the local community when the land was first rezoned several years ago. The rezoning was identified in the District Plan following a submission when the District Plan was notified in 1997. Following local opposition, the minimum site area was increased and a restriction placed on the number of allotments. The status of this restriction may need further investigation given both the legal ability for any person to apply for consent (other than a prohibited activity), and the layout of the subdivision which shows the road ending abruptly at the edge of the zone. These sections, as well as the block at the end of Kotlowski Road, appear to be in demand. There is further subdivision potential in the remaining large block of land in the inner bay and there are a number of smaller rural allotments in the inner bay and valley area. Like French Farm and Robinsons Bay, the small size of the two older pockets of urban development, combined with the distance between the pockets and their separation by State Highway 75, suggests that there would be issues associated with consolidating the settlement in its entirety over time. However, given:

- the proximity to Akaroa and its potential as a 'spillover area';
- the layout of the settlement;
- previous indications by the former Banks Peninsula District Council (**BPDC**) that Takamatua would be a focus for growth; and
- the Boffa Miskell report which shows that the area has potential to absorb further change, further investigation into long-term potential for some consolidation around the inner bay appears warranted.

Takamatua Bay Valley Floor (Photo courtesy of Boffa Miskell)

Akaroa

Akaroa is clearly the urban focus for the harbour basin, being the only area with business zoning, and containing a number of different residential zones to reflect character, infrastructure and topography issues. It is notable that the net minimum site area for Residential and Residential Conservation Zones is 400sqm, yet very few sites are this small. The majority are too small to be further subdivided (that is, they are between 400 and 800sqm), although there are certainly several sites which appear to have capacity for further subdivision. The endowment land at Takapuneke/Greens Point, part of which was zoned Residential in the 1988 District Scheme, is strictly unavailable for residential subdivision (as articulated at recent Council meetings) and is currently following a separate Council process for vesting as reserve.

Conversely, the hill slopes contain allotments in several places which are significantly smaller than allowed by the District Plan (which requires a minimum 5000sqm area). The potential for further subdivision within the rules of the District Plan appears to be very limited. The intent of the District Plan is for the Akaroa hill slopes to provide a limit to the urban area. This, in combination with the land rising quite steeply behind the town, and infrastructure issues as discussed later in this report, suggests that expansion opportunities may be restricted. This is not to suggest that demand for residential expansion is not occurring; it is understood that there continues to be demand and discussion regarding development on smaller sites in the Akaroa foothills. There are areas of deferred zoning, which may or may not have the ability to be taken up depending upon soil and infrastructure constraints, and several blocks surrounding the township may be suitable for deferred Akaroa Hill Slopes zoning in the future. These matters will be discussed later in this report and as the study develops.

Likewise the ability for the town area to expand in the future to accommodate demand in the harbour basin will be significantly limited by the Residential Conservation Zone and the Akaroa Historic Area (**AHA**) (for more detail, see later chapters of this document). Land subdivision in the rural area is somewhat fragmented to the north of the township; this area may provide a focus for potential long-term development, although it may also be subject to significant limitations, including aspect, stability and infrastructure.

To conclude, there may be some limited ability for long-term expansion and infill in the township. Given the high level of demand and pressure for residential development in this location, further investigation on the extent and nature of the various constraints is warranted. However, the Boffa Miskell study does not identify any areas around the Akaroa settlement with potential to absorb change, so it is likely that potential further growth opportunities are significantly limited.

Settlement overview

The following points summarise the key features of the subdivision and land use pattern of the eight settlements:

- Some settlements, such as Tikao Bay and Akaroa, comprise contiguous urban zoning with apparently little potential for significant expansion over the long-term due to geographical containment and infrastructure issues.
- Other settlements, such as French Farm, Barrys Bay and the 'inner bay' portion of Robinsons Bay consist of pockets of urban zone separated by large blocks of rural land; long-term growth would most sensibly concentrate upon 'joining up' the separate areas where appropriate or even possible.
- Duvauchelle, Takamatua and Wainui show the most significant potential given demand and infrastructure, although constraints including landscape and stability issues will require investigation.
- Areas with potential opportunities for urban consolidation may not offer the necessary community and commercial facilities to attract permanent residents.
- It is notable that older settlement areas have a more regular subdivision pattern, which does not necessarily reflect the form of the land, but has the advantage of higher levels of connectivity than the newer subdivisions which lend themselves more towards cul-de-sacs and irregular shaped parcels.

It is intended that each settlement be better understood in terms of its potential constraints and opportunities, both through the information available and discussed in later chapters, and through additional information which has yet to be sourced. Chapter 9 contains discussion about general urban growth management options as the study progresses.

Future impacts upon settlement form and growth

Greater Christchurch Urban Development Strategy

The study area currently sits outside the boundaries of the Greater Christchurch Urban Development Strategy (**UDS**), which was adopted earlier this year. As the UDS is implemented over time by way of both regulatory (plan changes) and non-regulatory initiatives, the urban area of Christchurch will experience an increase in residential density. This may have the effect of increasing demand in areas outside the UDS boundaries for less dense residential lifestyles. As a result, it is quite possible that demand for residential subdivision in the Akaroa Harbour Basin will increase in the future.

Peak oil

The global scientific community appears to have agreed that the rate of world oil production will peak and, following the peak, there will be an increase in the price of oil given continuing demand and stable or decreasing oil extraction. Indeed, some experts consider that we may have already reached 'peak oil'. The impacts of this are likely to be felt not only in the transportation sector, but in the pricing of a vast number of commodities which rely upon petroleum in their manufacture. There is potential for recession and indeed depression in coming years. In considering appropriate settlement form, it would be wise to provide for self-sustaining urban areas rather than continue to enable a subdivision pattern which disperses communities into dislocated 'suburbs'. To this end, it may be appropriate to identify an area on the western side of the harbour basin which could support small-scale community and commercial facilities and which is able to develop in a way that would promote walking and cycling connectivity.

Climate change

This is addressed in Chapter 5 – Natural Environment.

Urban design

Urban design is concerned with the design of the buildings, spaces and networks that make up our settlements, and the ways that people use these places. It is concerned not only with appearances and built form, but also with the wider environmental, economic and social consequences of design. High quality urban design creates places that work and places that we value. It can also help us avoid problems of poorly designed developments, both within and around settlements.

A proposed 'sieve mapping' process, as discussed in later sections of this document, will be undertaken in coming months, and this process may identify one or more settlements that have long-term potential for future consolidation or expansion. Any such areas will require a number of more detailed investigations and evaluations. One of these evaluations will be based upon incorporating urban design principles into the future form and structure of the settlement.

Generally settlements face a number of interrelated issues such as transport, heritage and poorly designed developments, and often there are multiple objectives which need to be accommodated. Urban design offers a means of providing an integrated solution which balances competing interests and objectives, while protecting or enhancing the sense of place and acknowledging the values of the local community. Depending on the outcomes of the initial stages of the study, it may be appropriate to undertake an urban design structure or master planning study of key settlements in order to provide an integrated answer to the various issues and to work with the community to provide clear directions for future development.

The Christchurch City Council has an urban design team and is a signatory of the New Zealand Urban Design Protocol, launched by the Ministry for the Environment in March 2005. As a signatory the Council has made a commitment to make our settlements "more successful through quality urban design". The design qualities identified in the Protocol include 'character' (which links strongly with heritage matters), 'connections' and 'context', with the intended outcomes including places that thrive economically, provide a choice of housing, work and lifestyle options, and have a strong identity and sense of place. More information on the Protocol is outlined in Chapter 10 of this document (Relevant Legislation and Guiding Documents).

Akaroa

Appendix XI to the PBPDP contains a set of *design guidelines* for Akaroa. These were prepared to help those building in the town, particularly within the historic town centre or residential conservation areas, to achieve the building they want while ensuring that it fits in with the town's historic character.

In 2005, an '*Akaroa Streetscapes Report'* was prepared for BPDC by Opus International Consultants Ltd. The intent of this report is to look at combinations of historic features and views as streetscapes. Any new developments would preferably be carefully planned within this context so as to have minimum possible impact on the historic streetscapes and viewscapes connecting the town to the land and sea.

Several matters identified in the report are relevant to other sections of this document. For example:

- *Transport: in terms of roads, footpaths and kerbs.* The report acknowledges that it is neither practical, nor even necessarily desirable, to freeze the appearance of Akaroa in the past; nevertheless, the width of roads and footpaths and the retention of kerbs is part of the historic fabric. It was recommended that any efforts to 'beautify' Akaroa does not destroy the very heritage values that make it special.
- *Waterways*: the courses of streams running through the town are recommended to be protected in their original location and natural character.
- *District plan rules:* closer street views (in addition to landscape protection rules) are suggested for incorporation within District Plan policy mechanisms, and the report recommends that care is taken in the siting of any new trees so that they do not obstruct historic viewscapes, especially connecting streets with the sea.

The issues covered within the Design guidelines and in the Streetscapes report are more site or locality-specific than is intended to be addressed by the current study. The Settlements Study will provide an overarching framework to inform long-term development in the harbour basin settlements and may recommend extending the scope of these documents or using them to inform new developments or district plan changes. The matters identified in these documents provide a key information base for future site-specific initiatives.

Akaroa South
(Photo courtesy of Boffa Miskell Ltd)

Information requirements regarding subdivision and land use within settlements

- Land valuation report identifying key components of the real estate market, uptake of land, existing situation, trends and issues across the settlements of the harbour basin.

Issues associated with subdivision and land use within settlements

Urban planning factor	*Issues*	*Flow-on effects*
Urban zoning	Urban zoning (including deferred zoning) may not reflect existing land uses or significant constraints, eg important ridgelines, heritage/cultural areas of importance (eg Takapuneke), infrastructural capacity, soil stability, etc. Where perceived capacity does not reflect actual capacity, this can lead to pressure to subdivide rural sites.	• Community tension as rural land comes under pressure for development. • Potential for rezoning to be needed, which can be contentious.
Subdivision pattern	Although more recent subdivisions reflect local topography, they tend to limit motor vehicle connectivity through extensive use of cul-de-sacs.	Encourages use of the car unless walk/cycleway linkages are provided to connect cul-de-sacs.
	Significant distances exist between urban pockets within settlements at French Farm, Barrys Bay, Robinsons Bay and parts of Takamatua and Wainui, which limit the potential for long-term consolidation.	Long-term dislocation of settlements is likely even when consolidation is encouraged.
	Reliance on fossil fuels makes communities vulnerable to increases in living expenses and fuel prices. This may impact upon the tourism economy and if not addressed in the future form and development of settlements, could result in the residents within the small, scattered residential pockets finding it more difficult to provide for their social and economic well-being in the future.	• High costs associated with living in settlements where all the basic living needs must be accessed by vehicle. • Potential for further reduction in the social diversity of the basin. • Reduced ability to service the tourism industry • A push for diversification of the economy to avoid economic collapse
Market demand	As the Christchurch urban area becomes denser through the implementation of the UDS, there may be an increase in market demand for residential development at a lower density than Christchurch in the harbour basin.	• Increase in uptake of vacant land. • Applications for residential subdivision beyond existing zone boundaries, resulting in a reactive planning situation and potential for ad hoc developments.
	The housing market appears to show a preference for 600-800sqm sections, which is larger than the District Plan provides for in Residential Zones (400sqm). While this provides more room for planting to soften the visual impact of development, it can work against the efficient use of land and the protection of the rural resource.	Potential for unnecessary sprawl into the rural landscape.
	Areas with significant lifestyle opportunities may not offer the necessary community and commercial facilities to attract permanent residents (eg Wainui), and existing residents may prefer that such facilities continue to be located elsewhere.	Continuation of pressure in the settlements closest to Akaroa and Duvauchelle.
Identified areas with potential to absorb change	Areas identified as having potential to absorb change (Boffa Miskell landscape study) may not support consolidation of urban form.	Pressure or approvals for development in these locations may result in further scattering of settlements, with limited potential for efficient servicing by roading and other infrastructure or the building of community identity.

5. NATURAL ENVIRONMENT

The foundation of any strategic study is the natural environment. Working with natural systems is generally considered to be both environmentally sound and cost-effective. Understanding these natural systems and the implications they may have for any future development is therefore of critical importance. This section summarises known information about the natural environment within the study areas, which is currently available through existing reports, papers or other hard copy information. Climate change, the coastal environment, landscape character, ecological resources, freshwater resources, soils and slope stability, contaminated soils, and walkways are all covered within this chapter.

Climate Change

Climate change is caused by the increased concentration of greenhouse gases such as carbon dioxide and methane which act like the cover of a glasshouse, bringing about a gradual increase in global temperature by trapping the heat from the sun[1]. Humans contribute to the emission of greenhouse gases through activities such as driving trucks and cars, burning fossil fuels, farming and cutting down forests. Most scientists agree that these activities are increasing the volume of greenhouse gases in our atmosphere, resulting in an average increase in global temperatures. Aside from warming, the accumulation of greenhouse gases will bring about a greater variation in climatic conditions. Floods, storms, droughts and other extremes of weather are predicted, together with a rise in sea level due to the melting of glaciers and icecaps and the thermal expansion of seawater. Despite any measures we take to reduce greenhouse gas emission now and into the future, the levels of carbon dioxide already in the atmosphere are expected to continue to affect the climate over our lifetimes.

This year, the Intergovernmental Panel on Climate Change (**IPCC**) released their fourth assessment of climate change. This report brought together the most recent scientific knowledge in order to report on the impacts on, and the vulnerability of, nations in response to this issue. Evidence of climate change in the present is strong, with a 0.3 to 0.5°C warming of Australia and New Zealand since the 1950s. The melting of glaciers and ice caps has already been recorded and, under moderate projections, it is possible that sea levels will rise 30 to 50 cm by 2100. Average temperatures are projected to increase about 1°C by the 2030s and about 2 to 3°C by the 2080s. Whilst a warmer climate is likely to be of some benefit initially by reducing energy demands and enhancing growing conditions for certain types of agriculture, the potential for adverse impacts at a national level are substantial; as indicated in Table 1.

Table 1: *Potential adverse effects of climate change*

Natural ecosystems	Changes in species distribution including an increased probability of species extinction
	Changes to or loss of habitat
	Increased pressure from invasive pests, animals and plants
	Reduction in ecosystem services for industries such as tourism and agriculture
Water	An increase in the severity of droughts in drought-prone areas
	An increase in the frequency and severity of flooding in flood-prone areas
Infrastructure	Increased risk of failure for: • flood protection infrastructure; • urban drainage/sewerage systems; and • large structures such as dams and bridges
	Risk of storm damage to buildings
Agriculture/horticulture	Changes in production levels
	An increase in the range and incidence of pests and diseases
	Areas suitable for different types of crops likely to change, potentially enabling greater variety and/or range
Coastal	Sea level rise and coastal inundation
	Increased frequency and intensity of storm surges
	Increased coastal erosion, with potential damage to coastal infrastructure (eg wharves and seawalls)
Urban	Warmer winters – decreased use of electricity and fewer cold-related illness
	Warmer summers – increased use of electricity for air conditioning

[1] The process by which heat is trapped within the Earth's atmosphere is known as the 'greenhouse effect'. Short-wave solar radiation enters the Earth's atmosphere and is absorbed by land and ocean surfaces, converting into heat and causing the emission of infrared (long-wave) radiation. Some of the infrared radiation is absorbed and re-emitted by greenhouse gas molecules (eg carbon dioxide, water vapour and methane). The direct effect is the warming of the Earth's surface and the lower atmosphere.

Whilst some of these effects are already being felt, there is still time to adapt to the costs and risks associated with climate change. Adapting to climate change means preparing our communities, industries and infrastructure for the effects of these changes, hence ensuring our environment, society and economy remain resilient.

Local and regional climate issues

Due to variations in local and regional climatic conditions, the effects of climate change will be felt differently in different places. Earlier this year, Environment Canterbury (**ECan**) produced a report examining the regional implications of climate change for Canterbury. The most significant climate change issues for this area are briefly discussed below.

Land

Hotter temperatures, stronger winds and the loss of vegetation cover associated with drier conditions will increase topsoil loss on non-irrigated farmland. An increase in the frequency and intensity of rainfall and flooding events will strip soil nutrients and increase the risk of slope instability and erosion.

Coastal and marine areas

As well as a rise in sea levels, climate change may also alter the strength of winds, waves and currents, affecting the rate of coastal erosion. Higher tides and an increase in the number of storm surges will cause increased inundation, placing stresses on flood and coastal protection infrastructure. Refer to the Coastal Environment section of this chapter for more information on the coastal impacts of climate change.

Freshwater

Reduced base flows are expected for the rivers of the Canterbury foothills and Banks Peninsula, reducing the availability of water for irrigation and public supply. Groundwater may be affected by increased saltwater intrusion as sea-level rises. Heavy rainfall events will cause increased nutrient run-off, sedimentation and river erosion, decreasing water quality and increasing the risk that water supplies, particularly those that are not reticulated, will be contaminated.

Ecosystems

The geographic distribution of species and habitats will be altered. This may pose a problem for some existing native ecosystems such as bush remnants and wetlands, which are often constrained by human activities. The effects of climate change will place stress on organisms that cannot readily move or adapt to changing climatic conditions, although new opportunities may be provided for species that prefer the changing climatic conditions. Drier conditions will reduce the health of freshwater ecosystems as water quality and river flows decrease and may result in an increased risk of wildfires, particularly in association with any 'burn-offs' that occur with some rural land management practices. Inland and coastal wetlands will reduce in size and will be at a high risk of contamination from stormwater and sewage overflows during heavy rainfall. Changing environmental conditions may also provide a competitive advantage for some plant and animal pests, making their control more difficult.

Physical resources

An increase in the frequency and severity of extreme weather events may have devastating effects on the physical infrastructure required for stormwater, sewerage lines, water supply, transport and communications. Low-lying or flood prone land and the coast are at most risk from sea-level rise, storm events, river flooding and/or inundation. Main roads beside low-lying harbour areas may be susceptible.

Social/economic impacts

Positive benefits to human health may arise due to a warmer climate and a reduction in air pollution. On the other hand, extreme weather events such as floods and heat waves may cause injury and loss of life, not to mention the cost of emergency responses and the loss of productivity. The Canterbury economy is particularly vulnerable with agriculture, horticulture and forestry reliant on a predictable and stable climate. The cumulative effects of natural hazards on social health and economic development could be significant.

Adapting and planning for climate change

A recent amendment to the Resource Management Act 1991 (**RMA**) requires councils to consider the effects of climate change on their communities and to incorporate climate change into existing frameworks, plans and projects. The purpose of ECan's climate change analysis report was to identify issues and policy solutions that should be incorporated into a review of the Canterbury Regional Policy Statement (**CRPS**). The CRPS identifies regional

issues, objectives and polices that all city and district planning documents must support and give effect to. Although the CRPS has not yet been updated to include climate change issues, ECan's climate change analysis report identifies the following initiatives that will help to reduce our vulnerability:

- Reducing stress on vulnerable ecosystems, habitats and species and providing adequate buffer zones to allow for shifts in habitat and distribution. This may require actively protecting significant habitats by placing controls on subdivision and other land use development.
- The protection of coastal heritage from erosion and sea level rise may require removing, relocating, and/or recording historic and archaeological artefacts.
- The allocation of water resources must take into account the increased demands and reduced availability of water arising from climate change.
- Decisions on flood protection, now and into the future, must take climate change into account.
- The capacity of stormwater systems and the design of sewerage infrastructure should also take into account the impact of increased heavy rainfall events.
- Action is required on water quality issues which are likely to be exacerbated by climate change.
- In relation to land use change, constraints need to be placed on development in areas susceptible to flooding or inundation, erosion or subsidence. The effects of climate change must be considered when locating and designing strategic infrastructure.

As an issue, climate change should not be considered in isolation. In the future, the climate change perspective will have to be integrated into activities such as flood management, water resources, planning, building regulations and transport. Opportunities to gain from the initial and long-term benefits of climate change (eg economic opportunities arising from new crops) need further investigation. It is necessary that our actions now do not foreclose future options for coping with climate change.

Issues associated with climate change

Urban planning factor	*Issues*	*Flow-on effects*
Climate change	Climate change is likely to give rise to the following long-term effects in the harbour basin which are currently not adequately acknowledged or planned for: • changes in the distribution and viability of indigenous ecosystems, habitats and species; • reduced surface water availability; • increased likelihood and intensity of rainfall events; • increased soil erosion and sedimentation of rivers and streams; • sea level rise, coastal erosion and inundation; and • increased risk of surface and coastal water contamination.	• *Environmental effects:* degradation of coastal and freshwater quality; adverse effects on coastal, freshwater and land-based ecosystems. • *Community (social) impact:* erosion of 'social health' due to the cumulative effects of water supply shortages, natural hazards and potential economic losses. • *Impacts on industries (economy):* economic benefits or losses depending on how climate change is approached. Long-term economic downturn predicted. • *Infrastructure:* pressure for Council to strengthen and/or build new coastal/flood protection. Increased risk of failure for existing infrastructure such as stormwater disposal systems, bridges, transport and communication links.

Information requirements regarding climate change

- Updates on climate modelling and future climate/sea-level rise projections as they arise. The National Climate Centre (**NCC**) at the National Institute of Water and Atmosphere (**NIWA**) is currently updating and refining New Zealand climate change models based on the findings of the fourth IPCC report. This information should be available by the end of 2007.

Coastal Environment

New Zealand's coastal settlement history

Development on the New Zealand coastline commenced with Maori migration. Captain James Cook later described the coastline in terms of the cleared and burnt off coastal hills and the intensely farmed beach hinterlands that were visible to the first Europeans. New Zealand bush most likely appeared impenetrable compared with the open pasture and woodlands of England, and the coast would have provided the openness and safety that the colonists expected. European settlements were generally located on the coast and land was cleared without any consideration of natural constraints. The Edwardian view of the "seaside" as a recreational space led to pressure in the 19th and early 20th century for both middle class and working people to locate baches/cribs on coastal or lakeside edges within an easy drive of a city or town. These colonial influences are still strongly reflected in current perceptions and settlement patterns. Despite warnings of sea level rise and climate change, the value of coastal land continues to climb.

Integrated management

The Settlements Study relates only to the landward portion of the Coastal Marine Area (**CMA**), although there will be certain activities and issues which will need to be managed at the interface of the land and the water environments. The RMA requires integrated management of natural and physical resources. ECan is responsible for the CMA, and notes four concerns which connect the landward aspect of the coastal environment with the CMA and which require integrated management. These are:

- coastal hazards landward of Mean High Water Springs (**MHWS**);
- access;
- areas of high natural, physical or cultural value within or landward of the CMA; and
- coastal water quality.

Coastal environment / landscape

Coastal areas have a range of values, including scenic and aesthetic qualities and the distinctive character of a local coastline; these values contribute to individual and community identities. The RMA requires the "preservation of the natural character of the coastal environment" as a matter of national importance, and we are to protect it from inappropriate subdivision, use and development.

The New Zealand Coastal Policy Statement (**NZCPS**) articulates policies to achieve the purpose of the RMA in relation to the coastal environment. This policy statement applies to the wider coastal environment, not just the CMA. The document notes, that in relation to caring for the natural ecosystems of the coast:

- it is important to maintain biological and physical processes in the coastal environment in as natural a condition as possible and to recognise their dynamic, complex and interdependent nature;
- we need to protect representative or significant natural coastal ecosystems and sites of biological importance;
- we need to maintain the diversity of New Zealand's indigenous coastal flora and fauna;
- it is a national priority to restore and rehabilitate the natural character of the coastal environment where appropriate; and
- the characteristics of special value to tangata whenua need to be protected.

In terms of settlements within the coastal environment, the document notes that:

- appropriate subdivision/development is encouraged in areas where natural character has already been compromised;
- we are required to avoid sprawling or sporadic subdivision/use/development in the coastal environment;
- a precautionary approach is required for coastal management; and
- the possibility of sea level rise needs to be recognised and areas identified which would be subject to erosion or inundation.

The clear signal is that unspoilt areas should be left in that state, with any development concentrated around existing settlements. Care will be needed in allowing development opportunities in an environment which may be urban but is also coastal. We will need to consider the extent to which any longer term settlement consolidation or expansion would impact upon the coastal environment and decide where the coast's natural character could sustain additional subdivision and development. Note that matters concerning coastal vegetation, wildlife and landscape character are discussed elsewhere in this chapter.

Effects of activities on the coastal environment

The Parliamentary Commissioner for the Environment identifies a number of activities and their potential effects in coastal areas, some of which are addressed elsewhere in this document:

Table 2: *Activities and effects in coastal areas*

Conflict or issue	Potential effect
Residential subdivision developments	Changes to the landscape and local identity
	Damage to waahi tapu and urupa
	Damage to areas customarily used to collect kaimoana
	Destruction of coastal ecosystems
	Exceeding the capacity of waste and sewage disposal systems
Coastal structures (eg wharves, marinas and sea walls)	Changes to natural coastal processes and coastal character
	Restriction of access for other areas
	Degradation of coastal ecosystems
	Loss of customary kaimoana of tangata whenua
Recreational activities	Conflicts over space or access
Disposal of wastewater and solid waste	Degradation of ground, coastal and estuarine waters
	Loss or degradation of natural ecosystems
	Restriction of food gathering and recreational activities
	Loss of customary kaimoana of tangata whenua

Akaroa Harbour Basin coastline

The sheltered bays of Banks Peninsula offered calm water and places for habitation and gardening for the original and subsequent Maori settlers in the area. Village sites were located near the water around the harbour (eg Onuku, Takapuneke and Wainui). Whaling vessels began to visit the harbour from around the 1820s, when the harbour was used as a haven, a source of fresh water, and to trade with Maori for supplies. European settlers began to arrive in the early 1840s, but pressure for land in the 1850s and a series of land sales resulted in the majority of the land in the basin being owned by Europeans or the Crown. The current settlement pattern indicates the predominance of the coastline, and reflects the large number of sacred and historical or archaeological sites in this location. There are also several areas where prominent natural characteristics contribute strongly to the distinctive character and visual amenity of the district, for example at Tikao, Ngaio and Hammond Points. This is discussed further below. The Landscape Character section of this chapter also deals with the landscape aspect in more detail.

The harbour generally has a high water quality and supports many wildlife species. It is also an area intensively used by recreation and tourism activities, with consequent demands upon supporting land-based infrastructure.

Boatsheds between Barrys Bay and French Farm. (Photo courtesy of Boffa Miskell Ltd)

Regulatory planning response

ECan, the Department of Conservation (**DoC**), and the former BPDC have all undertaken various studies in the past which assist in informing us of the significant values associated with the coastline. For example, ECan's Regional Coastal Environment Plan identifies the following values in association with portions of the harbour basin's coastline:

Table 3: *Areas of significant natural value*

Site	Maori Cultural Values	Protected Areas	Wetland, estuaries, and coastal lagoons	Marine mammals and birds	Ecosystem, flora and fauna habitats	Scenic sites	Historic places	Coastal landforms and associated processes
Akaroa Harbour Tidal Flats[1]	*	*	*	*	*	*		
Onawe Peninsula	*	*		*	*	*	*	*

[1] The Tidal Flats relate to Takamatua Bay, Robinsons Bay, Duvauchelle Bay, Barrys Bay and French Farm Bay.

Table 4*: Identified areas of high natural, physical, heritage or cultural value (values that may be present inland of the Coastal Marine Area)*

Site	Adjacent to areas of Significant Conservation Value	Maori Cultural Values	Protected Areas	Wetland, estuaries, and coastal lagoons	Marine mammals and birds	Ecosystems, flora and fauna habitats	Scenic sites	Historic places	Coastal landforms and associated processes
Ngaio Point			*						
Akaroa Harbour Mud Flats		*	*	*	*	*			
Duvauchelle Bay		*	*	*	*	*			
Onawe Peninsula	*	*	*			*		*	*
Tikao Bay		*							

Certain structures are also protected in the Coastal Plan for their recreational, cultural or historic values. The removal or demolition of these structures cannot be undertaken without a resource consent. Protected coastal structures in the study area include:

- Wainui Jetty;
- T Wharf, Duvauchelle Bay;
- Robinsons Bay Jetty;
- Takamatua Bay Jetty;
- Dalys Wharf, Akaroa; and
- Main Wharf, Akaroa.

The Coastal Plan also identifies certain areas of the region's CMA which are to be maintained in their present natural state, free of additional structures; these areas include Akaroa Harbour.

The PBPDP includes policies which give effect to the NZCPS, including that new subdivision, use and development is to occur generally in areas where the natural character has already been compromised. Sprawling or sporadic subdivision, use and development are to be avoided. However, even when subdivisions are generally well-located, there can be a tension between the provision of urban services and retention of natural character. Examples of this include city-style footpaths and street lighting, which at times have been transferred into a rural setting without taking into account the context of the receiving environment.

The PBPDP identifies an Interim Coastal Protection Area (**ICPA**), which also includes landward areas 30m from MHWS. The ICPA includes those areas of coastline that are landward of and adjoining areas of significant natural,

physical, heritage or cultural value. The location of these ICPAs is subject to appeal. Several areas are noted as ICPAs around the settlement study areas:

Table 5: *Interim Coastal Protection Areas in proximity to study areas*

Wainui	South of the study area between Bossu Road and Cape Three Points and extending beyond study area
Tikao Bay	Along headland south of Tikao Bay, extending beyond the southern boundary of study area
	From hill north of Tikao Bay Road, along headland north of the Bay and extending beyond the study area
French Farm	Headland south of the Bay, including a small portion of the study area
Duvauchelle	Either side of Onawe Peninsula
Robinsons Bay	Ngaio Point headland
	Hammonds Point headland – entirely beyond the study area
Takamatua	Takamatua headland to the south of the study area, including a small portion of the study area
Akaroa	Seaward strip from headland at Britomart memorial

As part of addressing the District Plan appeals, the Council engaged Boffa Miskell Ltd to complete a 'landscape character' study. This study concluded that, in most instances, a distance of about 500 metres from MHWS seems to equate to the limit at which the dominance of the coast is no longer apparent, and is used as a notional boundary to define the 'coastal environment'. In general the less human modification of the environment the higher the level of natural character. The study identified areas of high coastal natural character where predominantly natural landscapes occur within the coastal environment. These have been named Coastal Natural Character Landscapes (**CNCL**). Such landscapes have been identified at the following locations within the study area:

Table 6: *Coastal Natural Character Landscapes in proximity to the study areas*

Wainui	From south of settlement at Jubilee Road, and extending beyond southern boundary of study area
	From reserve north of settlement, and extending beyond the northern boundary of study area
Tikao Bay	From hill to the south of Tikao Bay Road, and extending beyond the southern boundary of study area
	Along headland north of Tikao Bay
Robinsons Bay	Hammonds Point headland, including the southern portion of the study area
Akaroa	From Childrens Bay extending north-west, including a very small portion of the study area

It should be noted that all areas recognised in the District Plan and associated documents for their important contribution to the coastal landscape are currently lacking in regulatory certainty. Nevertheless, they provide important information to consider when developing a long-term strategic planning framework for the harbour basin.

Coastal access

Maintaining and enhancing access to and along the CMA is a matter of national importance. Original surveyors of land in the basin had the foresight to provide for a legal road around the entire edge of the basin. However, the road is not formed in many places and its surveyed position has, at some locations, been inundated following coastal erosion or is tide-restricted, and in places provides dubious access due to steep terrain. While it does provide one mechanism for access to the coast, esplanade reserves and/or building setbacks may still be necessary around the shoreline to provide appropriate access to the water edge. Any future subdivisions along the coastal edge would preferably ensure that linkages and walkways are incorporated into the design and layout of the urban area.

Coastal hazards

The coastal environment is dynamic and hazards can arise when coastal processes interact with human use, property, or infrastructure. Two key effects occur, by way of (a) erosion processes and (b) inundation by sea level rise and tsunami. People wanting to live on the coast will need to realise the limitations and risks associated with owning coastal property. Fortunately, the harbour basin environment is rather more sheltered than many of the ocean edge beaches and this may afford some reduction in risk, particularly in relation to coastal erosion.

<u>Coastal erosion</u>
ECan advise that coastal erosion is not a significant issue in the Akaroa Harbour basin. The sheltered setting of the Harbour provides a calm, low energy wave environment that does not lend itself to erosive coastal storm events. A large proportion of the harbour consists of hard, rocky shore platforms, reefs and cliffs that are resistant to erosion. Any minor erosion in the basin is usually associated with the failure of coastal structures such as retaining walls or revetments.

<u>Sea level rise</u>
Climate change is discussed elsewhere in this chapter. However, one key issue relevant to the coastal environment is that of sea level rise. Global warming affects the temperature of the sea; as water heats up, it expands in volume, and seawater will expand vertically because it is constrained horizontally by landmasses. Further contributions arise though melting of glaciers and icecaps. The Fourth Assessment Report of the IPCC notes that ongoing coastal development is very likely to exacerbate the future risk to lives and property from sea-level rise and storms. Because of the lag effects, particularly in the ocean, it may take some time for the effects of global warming to filter through. However, sea level is virtually certain to rise and would continue to rise even if greenhouse gas concentrations were to be stabilised within this century. Based on IPCC projections, Canterbury's coastline can expect an increase in mean sea level of 0.14 – 0.18m by 2050, and 0.31 – 0.49m by 2100.

Under the RMA, councils are required to consider the effects of a changing climate on their communities and to incorporate climate change into plans and decision-making processes. Tighter planning and regulation may be required if continued rates of coastal development are to remain sustainable.

<u>Tsunami hazard</u>
Low lying areas around Akaroa Harbour are vulnerable to inundation from tsunamis. Banks Peninsula is particularly susceptible to "*distant-source*" tsunamis, the most likely source being an earthquake off the coast of South America. Three such tsunamis have caused inundation around Akaroa Harbour since written records began – in 1868, 1877 and 1960. Water levels in Akaroa Harbour probably rose 3-5 metres above the tide level at the time during these tsunamis. Low lying houses and shops were flooded in Akaroa Township and Takamatua during the 1960 tsunami.

An earthquake large enough to generate a trans-Pacific tsunami occurs off the South American coast on average once every 50 years – there have been nine in the last 450 years. Banks Peninsula is particularly vulnerable to tsunamis from South America because the Chatham Rise tends to focus tsunami waves towards the area and the elongated bays and harbours restrict and amplify the tsunami waves.

Inundation is highly dependent on the tide level during the time over which the tsunami waves arrive. The 1868 and 1960 tsunamis arrived at low tide, causing much less damage than had they arrived at high tide. New Zealand has up to 15 hours warning of a distant-source tsunami from South America – enough time to evacuate low lying areas.

The *"local source"* tsunami hazard for Akaroa Harbour is low. There is a small probability of a rockfall or landslide into the harbour, during a large earthquake or after a period of very wet weather. The effect of such a tsunami would be very localised.

<u>Response</u>
Avoiding or reducing the degree of loss from potential coastal hazards include keeping development away from known hazard-prone areas and maintaining a general buffer between MHWS and built development.

Marine farming

While marine farming is clearly beyond the scope of the settlement study areas, there is an inter-relationship in terms of use of land-based infrastructure and, potentially, worker housing. There are three authorised marine farms in the harbour basin, all south of Wainui.

Environment Canterbury has recently identified areas in the Canterbury CMA that may be excluded from marine farming or aquaculture activities. ECan proposes that areas with existing marine farms or new approvals will be specifically identified in regional coastal plans as **aquaculture management areas** (AMAs). In its preliminary identification of areas to be excluded from aquaculture activities, ECan has included all of the bays in the harbour basin. These are to be maintained in their present natural states, free of additional structures. If this proposal is adopted, then any future aquaculture proposals will be subject to intensive assessment, and are likely to provide an opportunity for assessing land-based impact also.

Development pressure and opportunities

A survey undertaken by Boffa Miskell Ltd in developing the Landscape Character study identified that pressure from coastal housing development was the key issue for many respondents involved in this study, with development on open coastal ridgelines their greatest concern. Addressing this pressure was regarded as vitally important if visually important ridgelines are not to be compromised by urban development. However, where pressures mount for more and more public access and settlement, there may also be a potential opportunity to harness the development energy to implement large scale environmental enhancement.

Water quality

Discharging human sewage and other contaminants into the harbour is offensive to Maori and potentially damaging to public health and ecological values (note: wastewater issues are covered in the Physical Environment Chapter). Water quality can also be affected by sediment flowing from land or streams into the harbour, particularly in times of high rainfall in areas with limited vegetated cover. In addition, earthworks associated with subdivision can give rise to reduced water quality following rain events.

The majority of the harbour basin is required by ECan to be managed as 'Coastal SG' waters, meaning that it is managed for shellfish gathering, contact recreation and the maintenance of aquatic ecosystems. However, Childrens Bay, Takamatua Bay, Robinsons Bay, Duvauchelle Bay, Barrys Bay and French Farm Bay are managed as Coastal CR water, meaning that it is managed for contact recreation and the maintenance of aquatic ecosystems, but not for shellfish gathering.

ECan monitors recreational swimming water quality at numerous sites around the Harbour each summer. These sites are then graded based on both their proximity to potential water quality risk factors (eg sewage outfalls and stormwater drains) and the water quality data that has been gathered for that site for the past five years.

***Table 7**: Swimming water quality at settlement beaches*

Monitoring site	Swimming water quality grading
Wainui Beach	Good
Tikao Beach	Fair
French Farm	Good
Duvauchelle	Good
Takamatua	Fair
Akaroa Beach	Fair

A 'good' water quality rating indicates that these sites are satisfactory for swimming most of the time. On occasions, such as after high rainfall, there may be an increased risk of contamination from run-off at these sites. A 'fair' water quality rating indicates that these sites are generally satisfactory for swimming, though there are many potential sources of faecal material. Caution should be taken during periods of high rainfall and swimming avoided if the water is discoloured. Signs go up at any beach if alert concentrations are exceeded in samples collected on successive days.

The beach at Tikao Bay

Issues associated with the coastal environment

Urban planning factor	*Issues*	*Flow-on effects*
Harbour water quality	The continued discharge of human sewage, stormwater, and other contaminants into the harbour has the potential to degrade water quality, habitats and the wairua (spirit) of water bodies.	• Potential damage to ecosystems and the ability to harvest kai moana. • Visual effects, potentially impacting upon recreation and tourism.
	Earthworks associated with subdivision and other activities can give rise to sediments and other contaminants that reduce water quality following rain events.	
Sea-level rise	Coastal property and features with significant heritage, recreational or cultural value at the water edge may be inundated and damaged or destroyed due to potentially rising sea-levels.	• Pressure on councils to mitigate damage through use of engineered solutions which may be costly and have other effects on coastal processes and ecosystems. • Restrictions on the location of new coastal development
Coastal property development	Settlement consolidation or expansion may impact upon the coastal environment if not located where the coast's natural character is sufficiently compromised and able to sustain additional subdivision and development. Particular concerns include pressure for housing upon open coastal ridgelines and urban styles of servicing which may not reflect the rural context.	Changing landscapes can reduce community and individual identity. Once modified, it is very difficult to return these areas to their natural state.
	Pressure for coastal housing at the low coastal edge gives rise to risk of future hazards of coastal erosion and seawater inundation, including as a result of potential climate change and tsunami events.	• Pressure on councils to mitigate sea-level rise hazards through use of engineered solutions which may be costly and have other effects on coastal processes. • Potential loss of property/life in any tsunami events.
Coastal recreation	Increasing demands to provide infrastructure such as boatsheds and moorings associated with holiday resort settlements, may give rise to potential effects on natural character values of the coast.	• Visual intrusion and changing landscapes can reduce community and individual identity. • Potential changes to coastal processes.
	Demands for maintenance and enhancement of public access to the coastal environment are likely to increase over time, and if not proactively planned for, may be difficult to achieve.	• Difficulty accessing the coastal environment. • A need to balance demand for access against the effects on coastal values/resources. • Effects on tourism experience and economy.
Coastal business operations	Businesses which rely on the harbour waters for their activities (eg tourism, aquaculture) may require supporting land-based infrastructure which, if not integrated into forward planning processes, may reduce potential opportunities for these activities or give rise to adverse effects on neighbouring land.	• Pressure on transport, servicing, housing and office provision if capacity issues not planned for. • Limitations to economic growth potential.

Information requirements regarding the coastal environment

- The national historical tsunami database is likely to have further details on historical tsunami inundation in Akaroa Harbour. The database is due to be completed by the Institute of Geological and Nuclear Sciences by the end of 2007.
- Coastal erosion information.

Landscape Character

Landscape history

Akaroa Harbour is highly regarded for its range of distinctive and unique landscapes, including the natural character of the coastline and harbour, the mosaic of native and introduced vegetation and the prominent ridgelines that extend from the summit to the sea. These landscapes are the result of an extensive and complex history of natural and cultural landform change.

The Peninsula was originally formed by two great volcanoes, the craters of which now shape the harbours of Akaroa and Lyttelton respectively. Since the time of the first volcanic eruptions, erosion by streams and the sea have shaped a unique landscape of hills, valleys and coast, with river systems depositing layers of alluvial soils over much of the basin's lower slopes. A rise in sea level following the last period of glaciation drowned the Akaroa volcanic crater and valley system, forming the Harbour as we know it today.

From a landscape perspective, Maori settlement, European colonisation and agriculture brought considerable change to the Peninsula. Today, agricultural industries such as dairy, beef and sheep farming, cropping and forestry are still the predominant land use activity, opening up the landscape and visually dominating the countryside.

Outstanding natural features and landscapes

The protection of outstanding natural features and landscapes is a matter of national importance under the RMA. In order to meet this requirement, landscapes and natural features have to be managed in a way that prevents the erosion of their core values and identity. A 1993 study assessing the landscape character of the Canterbury region identified that as a whole, the distinct, volcanically-derived form of Banks Peninsula is an outstanding natural feature and landscape at a regional level.

The PBPDP set in place policies protecting outstanding natural features and landscapes. 'Outstanding Natural Features' and 'Landscape Protection Areas' were identified on planning maps when the PBPDP was first notified in 1997. Certain land use developments were restricted in these areas and required resource consents. For a number of reasons (including uncertainties about the proper identification of protected areas), the exact location, extent and nature of these areas are under appeal and currently have an 'interim' status. Interim Outstanding Natural Features and Landscape Protection Areas that are located within or near the settlement study areas include:

Table 8: *Interim Outstanding Natural Features and Landscape Protection Areas in proximity to study areas*

Duvauchelle	Ridgeline between Pipers and Pawsons Valleys
Duvauchelle/Robinsons Bay	Ridgeline dividing the Duvauchelle and Robinsons Bay settlement areas, extending down to the Ngaio Grove Residential Zone
Robinsons Bay	Ridgeline to the south of the settlement study area, possibly avoiding the study area entirely
Takamatua	Ridgeline extending inland from Takamatua Hill
Akaroa	Ridgeline and hillside south of Lighthouse Road
	Ridgeline and hillside to the north of the study area

A landscape assessment of Banks Peninsula was undertaken by Boffa Miskell to resolve some of the issues raised in appeals related to landscape issues. In undertaking their assessment, a number of broad landscape values were identified that have relevance for the settlement study area:

Natural science values refer to the geological, topographical and ecological components of the landscape, eg native vegetation and volcanic remnants. Areas identified with natural science value include land protected under QEII and Banks Peninsula Conservation Trust (**BPCT**) covenants, conservation units and reserves, and patches of significant indigenous vegetation. The location and relevance of these areas are discussed in the Ecological Resources section of this chapter.

Aesthetic values refer to the scenic and visual appeal of a landscape, as well as the memorability and naturalness of the area. Landscape features in the Akaroa Harbour that have high aesthetic value include the prominent ridgelines, the absence of development, the balance between pasture and native vegetation, and evidence of heritage values or historic settlement.

Shared and recognised values encompass the special values about an area or feature that are shared across the community and wider public. Places in the study area that have shared and recognised value include the settlements of Wainui and French Farm, which were identified as 'favourite places' in a public survey.

Legibility values or 'expressiveness' refers to the degree to which the landscape demonstrates the formative processes leading to it. Legibility is most clearly expressed in the geological and more recent landcover formations of the harbour basin.

Tangata whenua values associated with the landscape are different from those associated with a western perspective. Natural features and landscapes are viewed holistically. Although it is difficult to identify specific landscape features, Tangata whenua have a strong association with waterbodies, the coast, native flora and fauna and sacred sites (waahi tapu). Together, these features contribute to the heritage landscape.

Taking into account the different types of landscape values associated with the natural and cultural character of Banks Peninsula, the Boffa Miskell report identifies Outstanding Natural Landscapes (**ONLs**), Heritage Landscapes (**HLs**) and CNCLs as areas that should be protected from further modification. The location of CNCLs within the study area is discussed in more detail in the Coastal Environment section of this chapter. There are no Heritage Landscapes and only one ONL extending across or within the study area boundaries. Located in a valley above Takamatua on the eastern edge of the study area, this ONL is described as a legible crater rim landscape with geological, ecological and aesthetic importance.

Because Banks Peninsula exhibits a distinctive character as a whole, the Boffa Miskell report categorises all areas outside of those identified above (CNCLs, HLs and ONLs) as the Visual Amenity Landscape (**VAL**). Within the VAL prominent ridgelines are worthy of a high level of protection due to their visibility from roads and other public places. These areas could be protected through rules preventing development within a certain distance from the ridgeline or within a specified range of visibility. Prominent ridgelines identified within or bounding the settlement study areas include:

Table 9: *Prominent ridgelines in proximity to study areas*

Wainui	Ridgeline to the north and just outside the study area
French Farm	Ridgeline to the north and just outside the study area
Duvauchelle	Ridgeline between Pipers and Pawsons Valleys
Robinsons Bay	Ridgeline to the south and just outside of the settlement area
Akaroa	Ridgeline to the north of the study area rising away from Takamatua Hill
	Ridgeline to the south of the study area, ascending inland from Aylmers Hill along Lighthouse Road

The location and extent of outstanding landscapes and natural features identified in the Boffa Miskell report and District Plan have not been finalised and there is no legal certainty over their exact location and significance. Nonetheless, the protection of these areas may be enforced in future variations or changes to the District Plan. They are therefore relevant when considering the future development of the harbour basin.

Spur separating Duvauchelle and Robinsons Bay (Photo courtesy of Boffa Miskell Ltd)

Management of landscape development pressures

Natural landscapes and character values can be compromised through inappropriate development. Threats to the landscape character of Banks Peninsula include earthworks, tree planting, vegetation removal, and the erection of new buildings and structures. A number of potential landscape protection and management options have been identified in the Boffa Miskell landscape report to deal with these threats. Future management mechanisms which could have an impact on the settlement study include:

- restrictions on housing density;
- restrictions on where buildings can be positioned in relation to prominent ridgelines;

- restrictions on the removal of native vegetation, pending the identification of areas of significant indigenous vegetation; and
- restrictions prohibiting or severely limiting development in or near ONLs and CNCLs.

Restrictions such as these will help to direct development into areas that are better suited for land use change. From a landscape perspective, the areas that have been identified by Boffa Miskell as having the best potential to absorb change are:

- Wainui Valley;
- French Farm Valley;
- Barrys Bay Valley;
- Robinsons Bay Valley; and
- Takamatua Valley.

Further investigation of these areas would be necessary to determine the potential of these areas to absorb future land use change and built development. This type of assessment would need to take into account the range of local landscape values, as well as the other issues raised in this document (eg infrastructure requirements, slope stability and urban form).

Landscape character: Akaroa settlement

The township of Akaroa is physically and visually separated from the neighbouring settlement areas by the steep slopes of the spurs and gullies inside the ancient crater rim that forms the main ridgeline around the harbour. Covered with a mosaic of native and exotic forest, bush and modified grasslands, the dominating character of the hill slopes and gullies above Akaroa create a visual contrast to the highly modified urban landscape and provide a distinct 'edge' which physically contains the Akaroa settlement. The recent 'Misty Peaks' purchase of land for reserve behind Akaroa will assist in maintaining a natural backdrop to the township.

Increasing pressure to build on the hill slopes surrounding Akaroa has been identified as an issue in the District Plan. The creation of an Akaroa Hill Slopes Zone was designed to put a limit on development in this area due to its high visual value and propensity for soil and slope instability. From a landscape perspective, any residential development that occurs in this area must be of a nature and scale that does not detract from the intrinsic natural character of the hill slopes. Similar issues may arise in relation to the hill slopes surrounding other settlements in the harbour basin.

Note: Please refer to the Social Environment Chapter (Chapter 6) for further information on issues regarding cultural and built heritage landscape values.

Issues associated with landscape character

Urban planning factor	*Issues*	*Flow-on effects*
Outstanding landscapes and natural features	Significant land use change in or around: • areas that have outstanding natural or cultural landscape character, (eg, Boffa Miskell's ONLs and CNCLs), or • locally important landscape features (such as geological formations, ridgelines, areas of native bush, historic and archaeological sites) could erode the integrity, values and visual appeal of these areas, if not identified and managed appropriately.	Potentially irreversible adverse effects on community identity and tourism. The failure to recognise and protect significant landscape features may lead to the exacerbation of related issues such as: • the erosion of cultural identity; • soil and slope instability; • biodiversity loss; • high infrastructure costs; and • surface and coastal water quality degradation.

Information requirements regarding landscape character

- For any identified potential future growth areas, an assessment of local landscape values that are sensitive to change will need to be undertaken.

Ecological Resources

Past and present ecological status

Prior to human settlement, indigenous forests would have covered most of Banks Peninsula. By 1900, activities such as logging and the clearance of land for agriculture reduced forest cover to approximately 1% of the original coverage, most of which is now small remnants located in reserves and gullies. Many species of plants and animals disappeared from the Peninsula during this time. Subsequent regeneration of forest and shrubland communities has increased indigenous land cover to approximately 15%. The original vegetation in the Akaroa region would have been predominately podocarp-hardwood forests combined with patches of conifer-hardwood, beech forest and lowland tussock near the coast. Second growth of kanuka and other native trees and scrub is now common.

A unique ecological region, Banks Peninsula represents the southern and northern limits of several native plant species. At least 60 invertebrates are unique to the area. Six species of native lizard, including two geckos and three skinks, are also present on the Peninsula, with three of these identified as threatened. The protection of the original indigenous vegetation is a high priority, as these areas are important as wildlife habitats for native, rare and endangered plant and animal species. Areas of regenerating/second growth vegetation are also important, both as wildlife habitats and for their potential to regenerate to the original land cover. In addition to their ecological attributes, native ecosystems have visual appeal and cultural significance as a source of food (mahinga kai) and other traditionally important materials.

Threats to the viability of indigenous ecosystems include plant and animal pests, exotic forestry, subdivision, domestic stock and the clearance of vegetation for grazing.

Protection and enhancement of indigenous vegetation

Banks Peninsula is known as a haven for a wide range of indigenous plants, animals and ecosystems. A resilient natural environment, there is more native forest cover present now than in 1920. Despite this, DoC's Canterbury Conservation Management Strategy (**CCMS**) identifies the long-term viability of the remaining native vegetation as an issue, due to the small size and fragmentation of reserves and covenants.

In an effort to protect important areas of ecological value, the PBPDP identifies a number of Recommended Areas of Protection (**RAPs**). Two RAPs are located in the study area:

Table 10: *Recommended Areas of Protection in proximity to study areas*

Duvauchelle/Robinsons Bay	Coastal scrubby forest at Ngaio Point (RAP 50A)
Takamatua	A patch of upper lowland vegetation in the valley above Takamatua (RAP 29A)

The location and extent of these areas is currently under appeal in the Environment Court. There are currently no rules associated with these areas, with an emphasis instead on non-regulatory methods of protection. Further work on identifying and defining areas of significant indigenous vegetation is anticipated, which may lead to restrictions regarding the type and nature of development that can occur within and around these areas. Other areas of significant indigenous vegetation may also be identified in this process.

Public reserves, usually but not always owned by the Council or DoC that have intrinsic, amenity, recreation and/or conservation value are protected in the District Plan as Conservation Reserve Zones. The purpose of these zones is to control inappropriate development so that the natural character and biodiversity of these areas is not compromised. Conservation Reserve Zones are located in the following settlement study areas:

Table 11: *Conservation Reserve Zones in proximity to study areas*

Barrys Bay	Adjacent to the intersection of State Highway 75 and Wainui Main Road
Akaroa	Grehan Stream Esplanade Reserve

The Council has recently purchased Misty Peaks, a 489ha farm above Akaroa, for long-term reserve purposes. Although just outside the Akaroa settlement study area, the purchase of this land extends the existing Hinewai and Armstrong reserves creating a continuous conservation area of 1693ha. This purchase will protect six plant species that are on the New Zealand threatened plant list and nine species that are rare or uncommon on Banks Peninsula. As a reserve, this area will also protect the habitat of 21 native bird species and five Banks Peninsula lizard species.

Efforts to protect and restore native vegetation are not limited to Council activities alone. Landowners have pursued the protection of natural features on private land through covenants with the BPCT and the QEII National Trust.

Whilst the details of covenants held with the BPCT are presently unavailable to the Council, the following QEII covenants have been identified within the boundaries of the study area:

Table 12: *QEII covenants in proximity to study areas*

Barrys Bay	Native vegetation and farmland south of Moores Road
Akaroa	An area of riparian indigenous vegetation north of Childrens Bay
	Native vegetation high in the Walnut Stream catchment

Notable trees

Akaroa Harbour contains a number of individual trees or stands of trees which contribute to the amenity and character of the area. These trees have been identified in a schedule of the District Plan as 'notable trees' due to their botanical, functional, historic and/or cultural value, and are protected from damage, removal and inappropriate modification. Most of these trees are located within Akaroa settlement and contribute to the heritage landscape of this township. Isolated notable trees or tree stands are also recorded in the Rural Zones of Takamatua and Wainui. Takamatua residents identified in a 2005 survey that a review of notable trees (in order to increase the protection of native species and make the notable tree schedule more enforceable) would be beneficial. In light of any potential changes in how land is used, such a review may be necessary in the future.

Ecosystem protection and enhancement

Because the protection and enhancement of significant habitats is a matter of national importance, we must work to ensure that land use changes do not threaten the range and quality of terrestrial, coastal and aquatic habitats. To protect habitats and ecosystems from being degraded, future development will need to take into account:

- Habitat linkages and wildlife corridors. In a highly fragmented system, such as Banks Peninsula, physical connections between habitats are essential for ensuring the continued survival of indigenous species. Opportunities to increase the connectivity of indigenous vegetation, wetlands and other natural habitats should be maximised; eg by providing wildlife links within and between new subdivisions, conservation reserves and regenerating bush on private land.
- Waterway protection. Streams and other waterbodies (and their riparian margins) provide valuable and diverse habitats for indigenous fauna including invertebrates, fish and birds. Activities such as subdivision and the clearance of riparian vegetation can degrade the aquatic environment and hence reduce the range of habitats available. Issues relating to the aquatic environment will be discussed later in this chapter.

Introduced plant and animal pests pose a significant threat to communities of indigenous flora and fauna. Whilst pest and weed management is often regarded as a rural issue, residential areas are a potential source of both weeds (eg invasive garden plants) and pests (eg feral cats). Residential development that encroaches on ecologically valuable ecosystems could alter the speed and intensity of pest and weed invasion.

Issues associated with ecological resources

Urban planning factor	*Issues*	*Flow-on effects*
Protection of native flora and fauna	Failure to identify, protect and enhance ecologically sensitive areas, including wildlife corridors and habitat linkages, will reduce the long-term viability of indigenous flora and fauna ecosystems, communities and species, particularly in areas that are subject to pressures for development and land use changes.	• Important biodiversity values may become threatened; rare and endangered species could be lost. • Traditional cultural resources could be degraded, resulting in a loss of cultural identity. • Adverse effects on amenity values and landscape character.

Information requirements regarding ecological resources

- An ecological study of Banks Peninsula, that will identify areas of significant indigenous vegetation, is currently being undertaken to aid in the resolution of Environment Court appeals regarding this issue.
- The identification of existing or potential wildlife corridors/habitat linkages in any areas identified for potential long-term development.
- Land use restrictions imposed by covenants.

Freshwater Resources

Description of freshwater resources

The rivers and streams of Banks Peninsula are characterised by short, steep catchments which drain volcanic rock/loess covered valleys. These waterways are rain-fed, but do appear to have appreciable spring flows from water stored in the fractured volcanic rock, such that most do flow year-round. Nevertheless, they tend to have low base flows which vary depending on the season; higher flows are more common in winter when rainfall is higher. Tributaries or sections of the main stream may be dry for part of the year.

The rivers and streams provide habitat for several rare aquatic species, are used as a source of drinking water and are highly valued by Ngai Tahu. Overall, water quality in these rivers can be relatively poor, owing to the highly modified nature of the river valleys. The relatively phosphorus-rich volcanic geology contributes to a naturally high level of soluble phosphorus. Microbiological concentrations are high because of rural activities, primarily stock access to waterways and animal waste run-off.

A lack of significant groundwater recharge to aquifers means that most waste generated within the catchments is exported via the surface stream flows, giving these rivers a very low capacity to assimilate contaminants. Whilst groundwater resources do exist, very little is known about them. It has been suggested that the confined aquifers along the coast suffer from saltwater intrusion due to the freshwater/seawater interface being naturally present landward of the coast. Unconfined or semi-confined aquifers have been located in the valley floors of French Farm, Duvauchelle, Robinsons Bay and Takamatua. Due to a lack of information on the groundwater resource, this section will primarily focus on the surface water resources (rivers and streams) of the Akaroa Harbour Basin.

Waterway at Wainui

Natural and cultural values

The ecological condition of aquatic ecosystems of Banks Peninsula rivers is variable due to the loss of shading and higher stream temperatures associated with historic clearance of indigenous forest. Despite this, a diverse range of caddisflies, mayflies and stoneflies are present, including some highly endemic species located in catchments with forest remnants. Native fish species that have been recorded in these rivers include the banded kokopu, koaro, redfin bully, common bully, smelt, inanga and the giant bully.

Banks Peninsula and its streams are an important recreation resource for Christchurch residents, being highly valued for their scenic appeal and role in passive recreation activities (eg walking, picnicking and sightseeing). The 'recreational use' value of these waterways is low for camping, swimming and paddling/wading. In terms of landscape and natural character value, the lower catchment areas generally have a low level of naturalness and are not highly valued as outstanding natural features.

For Tangata Whenua, the *mauri* or life-force associated with these waterways is linked to cultural identity. The capacity to renew groundwater flow and surface water stocks, the maintenance of mahinga kai species including passage for migratory fish species, the cleansing aspects of flow variability, the continuity of flow from source to sea and the naturalness of water quality are all indicators of stream health and mauri.

Water quantity

Water quantity issues arise both when there is too much water and too little water. ECan's Natural Resource Regional Plan (**NRRP**) identifies a number of 'flow-sensitive catchments' in the harbour basin. These catchments have little water storage capacity and are generally characterised by a dependence on rainfall for stream flow, low precipitation rates and a geology that does not naturally store water. The NRRP restricts plantation forestry in these areas, because compared to other land use activities, this type of forestry is likely to have the greatest impact on water yield due to the scale and density of planting and the speed of growth. For erosion control and water quality management in these catchments, low vegetation and open spaced plantings are encouraged.

Acceptable minimum flow levels have been established for some rivers and streams in the study area. These flows were originally set as consent conditions. The purpose of the minimum flows is to establish interim allocation regimes, with the intention that these will be progressively reviewed. Abstraction of water from the catchments of the settlement study area is primarily for rural purposes. Surface water is also extracted for water supply; the nature and location of these schemes is examined in more detail in the Physical Environment Chapter (Chapter 7) of this report. Any new industries located in the settlement study areas which want to abstract from these waterways will have to take into account the existing rural demands for surface water and the minimum flows set out in Table 20.

***Table 13**: Minimum flows of surface waters in proximity to study areas*

Settlement study area	Catchment	Flow-sensitive catchment	Minimum flow (L/s)	Monitoring site
Wainui	Jubilee Creek	-	5	Lester property (Jubliee Rd)
French Farm	French Farm Stream	Y	10	French Farm Valley Rd bridge
Barrys Bay	Barrys Bay Stream	-	10	Lower Rd bridge
Duvauchelle	Pawson Valley Stream	Y	5	State Highway 72
	Pipers Valley Stream	Y	3	Duvauchelle water supply intake
Takamatua	Takamatua Stream	Y	5	State Highway 72

The impacts of high flows and flooding resulting from heavy rainfall events are not well understood, although flooding in Akaroa and Takamatua has occurred in the past. No flood protection zones have been identified in the District Plan. As with all natural hazards, the location of new subdivision and development away from areas of high flood risk is essential to avoid major damage, injury or loss of life or property.

Land use impacts on waterways

Changing land use patterns will have an impact on the quality and characteristics of waterway systems. Urbanisation and other types of land use change around rivers and streams can lead to slow but inevitable changes in the catchment hydrology and water quality.

The release of sediments due to stormwater run-off from urban areas, vegetation clearance and an increase in hard surfaces leads to high levels of suspended sediments which can adversely affect water quality and in stream biodiversity. This is a particular issue for Banks Peninsula, where the loess soils are very easily eroded and mobilised. Too much sediment in the waterways can smother gravels and reduce habitat availability. Excessive siltation also impacts on the aesthetic and recreational values of the waterways. Slow progressive urbanisation, combined with land management techniques such as creating buffer zones and encouraging native vegetation alongside river systems, should manage the potential impacts of urban development on the rate of sedimentation.

Overhanging riparian vegetation can moderate stream temperatures, provide terrestrial food (insects) for fish, stabilise banks and control soil run-off. At present, stock in rural areas may have unrestricted access to the channel in some waterways, causing considerable ecological damage by destabilising the banks and substrate and contributing to microbiological contamination. Management of livestock intrusion, particularly dairy stock crossings, into the streams and riparian protection (shading) remain of the greatest benefit to the improvement of water quality in these streams. To achieve this, reinstatement of native vegetation along major streams would be most beneficial.

At the moment, the rivers and streams of the harbour basin are relied upon as a source of water supply in the settlements. Catchment activities and practices that degrade the quality of these waterways or affect the quantity of water available should be discouraged.

Note: Please refer to the Water Supply and Stormwater sections in the Physical Environment Chapter (Chapter 7) for further information on these issues.

Issues associated with freshwater resources

Urban planning factor	*Issues*	*Flow-on effects*
Water quality	Water quality in streams and rivers is relatively low due to: • the hydrology/geology of the basin; • rural activities (including contamination and abstraction); • stormwater run-off; • vegetation removal; and • new development and subdivision, which has the potential to be further exacerbated with new development if this development is not appropriately located and managed.	• Ecological, recreation, and cultural values compromised. • Poor quality waterways present a problem for the treatment and use of surface water as a domestic water supply.
Flood hazards	Areas prone to flooding during high rainfall events and tidal surges have not been adequately identified, creating uncertainty over appropriate locations for any future settlement consolidation or expansion.	• Flood-sensitive activities (eg urban development) may be located in flood prone areas. • High costs associated with flood events; eg - injury, loss of life and loss of property and income; • Costs associated with developing and maintaining flood mitigation measures such as structural works and minimum floor levels.
	The frequency or intensity of flood events may be exacerbated as a result of changes to climate patterns, vegetation cover and land use (rural vs. urban).	
Availability of surface water resources	Low seasonal rainfall in combination with over-extraction and the effects of intensive forestry may lead to the drying up of some rivers, streams and tributaries, which may in turn decrease the availability of water for settlement water supply.	• Restricted growth opportunities for settlements. • Health issues. • Costs.

Information requirements regarding freshwater resources

- An assessment of the groundwater resource may be required if groundwater is identified as a viable source of domestic water supply in the future.
- Identification and mapping of historical flood events and potential flood prone areas to determine what areas may be at risk of flooding.

Soils and Slope Stability

Soils and geology

Akaroa harbour is the eroded core of a large basalt volcano that formed over six million years ago. Geological maps show that there are two different types of underlying geology in the settlement study area: the French Hill Formation, a medium to fine grained basalt interlaid with tuff, ash and fossilised soils; and the Tikao Trachyte, a coarse to fine grained volcanic rock assemblage located under the northern slopes of the Tikao Bay settlement.

The soils overlying the volcanic bedrock are generally a combination of weathered volcanic bedrock, soil and rock material deposited through the action of gravity (colluvium), wind-blown sand and silt (loess), and sandy gravels/silts deposited by streams and rivers (alluvium). Loess and colluvium occurs in thicker blankets at lower altitudes forming moderately fertile soils. Deep, fertile alluvium deposits are found in the valley floors. Manmade fill deposits arising from reclamation and waste disposal (landfills) occur in the Akaroa and Duvauchelle settlement areas. The locations of fill deposits and the impacts of these deposits on land stability will be addressed in a geotechnical report due to be completed this year.

Soil erosion

Erosion, involving the detachment and transportation of rock and soil particles, is a natural process but it can be accelerated by human activities. Erosion types include wind, raindrop impact, sheet, rill and gullies; the main factors influencing the rate of soil loss are ground cover, length and steepness of slope, soil erodability and climate.

Vegetation removal for residential development on any site, even a small site on a gentle slope, will leave the site susceptible to erosion, which can then be exacerbated by earthworks. The eroded rock and soil particles result in sedimentation, which is a particular issue for Banks Peninsula. A discussion of how land use impacts such as sedimentation can affect waterways is outlined in the Freshwater Resources section of this chapter.

Landslides

Landslides can occur in both the bedrock and the covering soils. Landslides involving bedrock are usually related to weaknesses within the volcanic rock. Whilst most bedrock landslide features are very old and unlikely to be reactivated, these areas will need to be considered when determining landslide susceptibility. Landslides in overlying soils and sediments may occur on moderate to steep slopes, and can be associated with tunnel-gully erosion of loess. Landslides may be triggered by earthquakes, high intensity rainfall, or longer periods of wet weather.

Issues associated with soils and slope stability

Urban planning factor	*Issues*	*Flow-on effects*
Soil erosion and sedimentation	Residential developments, earthworks and vegetation clearance activities can, unless very closely managed: • accelerate erosion rates; and • cause siltation of waterways and the harbour.	• Water quality issues, with effects on habitats and amenity.
Landslide susceptibility	Areas prone to soils and slope instability are only known for some locations. Residential development in such areas can: • place pressure on the Council to provide and maintain infrastructural services in hazardous areas; and • put property and lives at risk.	• Stabilising landslides is expensive.

Information requirements regarding soils and slope stability

- A geotechnical report of the study area identifying existing landslides, landslide susceptibility zones and potential areas of liquefaction is due to be completed at the end of this calendar year (2007).

Contaminated Sites

Sites previously used as industrial, agricultural or horticultural land can potentially contain areas of contamination because of the use, storage or disposal of hazardous substances. Land is considered to be contaminated when hazardous substances are present at concentrations above background levels and are likely to pose an immediate or long-term risk to human health or the environment. To enable the identification of these sites, the Ministry for the Environment has produced a comprehensive list of activities and industries with the potential to cause contamination, called the Hazardous Activities and Industries List (**HAIL**).

Territorial authorities and regional councils have functions under the RMA that are associated with identifying and managing contaminated land. ECan is currently undertaking a 10-year programme to identify all sites that have accommodated HAIL activities on a district by district basis. Identifying these sites will then allow for further investigation to determine whether a site has actually been contaminated by the activity, and if so to establish whether remediation or management of contamination at these sites is necessary. Identifying and investigating these sites is a vital process, particularly on land that may be developed for residential purposes. The identification programme has not yet been undertaken in the study area, however it is likely that a number of sites will have been associated with HAIL activities. These sites will require investigation and potentially some form of management prior to redevelopment.

Issues associated with contaminated sites

Urban planning factor	*Issues*	*Flow-on effects*
Contaminated sites	Not all potentially contaminated sites have been identified, with associated risks that development may be established on or near these sites with potential risks to human health and the environment.	• Risks to public health and the environment. • Investigation and management of sites is expensive

Information requirements regarding contaminated sites

- For any identified potential future growth areas, further investigation regarding potentially contaminated sites may be necessary.

An example of slope instability and landslide on Huntsbury Hill, Christchurch Urban Area (Photo courtesy of Barry McDowell)

Walkways

Current situation

Walking is an important recreational activity on Banks Peninsula, with an increasing number of visitors who are keen on walking being attracted to the Peninsula every year. Central to the enhancement of the walking experience is being able to provide high quality, easily accessible walkways that cater for a range of fitness levels and abilities. Maintaining existing walkways and planning for new tracks requires long-term thinking to ensure that new developments do not foreclose future walkway options, particularly where these have potential to form links between communities and/or provide an alternative to using a motor vehicle within settlements.

There are a number of walkways located within or crossing through the study areas. The most significant of these are the Akaroa walking routes: tracks and routes that are located within and/or around Akaroa Township. A recent report by Suky Thompson provides an inventory of these tracks, including recommended use classifications and priorities for maintenance, signage and publicity. The Akaroa walking routes have been classified as either:

- *Village walks* – "Akaroa Bush Back Drop"; "L'Aube Hill French Cemetery"; "Garden of Tane"; "Graves of Garden" and "Britomart Monument" walks. These five walkways link together historic sites, scenic viewpoints and reserves within the township, with most of these walkways located on council-owned land.
- *Country rambles departing from Akaroa Township* – tracks with a duration of one to seven hours which depart and return to Akaroa and go beyond the settlement limits. Two double fenced paper roads provide access from the township to the land beyond: the Woodhills and Purple Peak stock routes.
- *Country rambles outside Akaroa* – there are two country rambles outside Akaroa. Ngaio Point is a one hour coastal walk mainly over reserve land between Duvauchelle and Robinsons Bay. The two hour Otehore route traverses private land west of the French Farm study area.

Two privately managed walkways also cross through the study area. The Banks Peninsula Track, which is managed by a private consortium of land owners, provides a walking track between Onuku and Akaroa via Flea and Otanerito Bays. The Akaroa Walk, run by Tuatara Tours Company, is a guided tramp which begins near Christchurch and ends at Wainui, where trekkers are taken by boat access to Akaroa. These walks have proved to be very successful, providing a tourism-based income for the local communities.

The location and condition of other tracks and walkways within or passing through the study areas is not recorded. Local use of unformed 'paper' roads is likely, particularly where they are separately fenced from surrounding farmland or where there has been a long history of regular use. Along the coast, an unformed paper road provides public access in some areas. The extent that walkways and paper roads are being used by other recreational users such as mountain bikers is also not well understood. It is expected that consultation will clarify other walking and mountain biking opportunities that might be prioritised in the settlement study areas.

Priorities for existing walkways

Suky Thompson's report on the Akaroa walking routes identifies priorities for the future management of these tracks. Currently, two of the tracks cross private property without formal agreements, putting them at risk of being closed at any time. There are also issues regarding signage, with the Village Walks having only basic route signs and signage on the Country Rambles being poor or non-existent. Only one route through the township is accessible for those with poor mobility. Other priorities include the managing foot traffic where walkways follow or cross public roads, upgrading poor quality track sections and improving the accessibility of walkway maps and other documents; currently these are only available through the Akaroa Information Centre.

<u>Akaroa Village Walks</u>

The primary purpose of the Akaroa Village Walks is to visit Akaroa's reserves. Each reserve requires investment and improvement in order to improve the experience of these walks:

- Waeckerle's Green — The Akaroa 'Bush Backdrop' walk crosses this little known reserve, which is named after the French settler who originally owned the land. No maintenance is required, however picnic tables and historic interpretation would help to make this reserve more interesting and user friendly.
- L'Aube Hill — This bush clad reserve covers the northern most spur into Akaroa and incorporates the French Cemetery. The reserve has deteriorated over the past few years and improvements to the walking tracks that cross this reserve are required to bring them up to an appropriate standard.
- Settlers Hill — A small bush reserve on the southern slope of the Balguerie Valley, this reserve has only one walking track accessing it. Settlers Hill was formerly connected to L'Aube Hill and the French Cemetery via a pedestrian link that is now closed. The main priority for this reserve is having this connection re-opened.
- Stanley Park — The primary walking track through this reserve is the Bush Backdrop track, however there are also minor routes used by local residents. A Concept Management Plan has been developed (2006) which outlines improvements to these tracks and envisages maintaining the park as a rural grazed area within central Akaroa.
- Garden of Tane — Originally known as the Akaroa Domain, the Garden of Tane gives access to the historic Catholic, Dissenters and Anglican cemeteries. This area is in need of a new toilet block and some landscaping work. The reserve has high walking potential and there are a number of options for new and upgraded walking routes.

Entrance to the Garden of Tane Scenic Reserve

<u>Country Rambles</u>

It is difficult to divorce the management of walkways within the settlement study area from the management of those outside, as is the case with the Akaroa Country Rambles. Any work undertaken to improve these walks would need to be done as part of a strategic walkway programme encompassing both urban and rural walkways and the links between them.

The main priority for the Country Rambles is securing public access across private property. Existing walkways that cross private property do so out of the grace of the landowners and there are no easements or formal agreements protecting the right to access this land. If any of these properties are sold, it is very likely that the new owners will extinguish this right. The only private property in the study area that allows public access as part of a Country Ramble is the Akaroa Holiday Park.

New walkway options

A major deficiency on Banks Peninsula is the lack of short duration loop tracks and mid-crater level walks associated with major recreation routes and small settlements. For some settlements, there are very few opportunities for both residents and tourists to undertake off-road walking, especially walks that provide an alternative return route. There is also a strong desire to see more recreational walking opportunities made available, including a network of esplanade reserves to provide stream-side walks. One option for developing new walkways is the development of the existing network of unformed paper roads. This option is most relevant for the Settlements Study, where routes such as the Long Bay Road/Takamatua and Takamatua/Summit Road are already double-fenced, separating them from the adjacent farm land.

The Misty Peaks purchase will offer further walkway opportunities for tourists and harbour basin residents alike. Recreation experiences in this area would be of half to one day in duration. Aylmers Valley contains an attractive boulder stream which runs all year. There is a notable 10m high waterfall (Newtons Waterfall) in the stream's true left fork about 250m upstream from the Akaroa water supply intake. A loop walkway created along Aylmers Stream from the Aylmers Valley Road end may not be difficult to construct.

A second recent report by Suky Thompson identifies potential new walking routes in Banks Peninsula; refer Table 21 for walks relevant to the study areas.

Table 14: *Potential new walkway routes in proximity to study areas*

Settlement	Potential walkway	Description
Harbour-wide	Coastal walkway from Akaroa to Barrys Bay	A 6 hour, one way coastal walking tramp with full public access.
	Long Bay Road to Takamatua valley	A paper road links Long Bay Road opposite Happy Hollow Farm to Takamatua Valley Road.
Barrys Bay	Barrys Bay podocarp forest remnant (adjacent to the highway)	A short, easy circular walk through the last remnant of lowland Podocarp forest in the inner harbour.
	Barrys Bay to Onawe flat	A gentle boardwalk track across the mudflats to the picnic area on Onawe Peninsula.
Duvauchelle	Residential to commercial area	A short, coastal walking track between the residential and commercial areas.
Robinsons Bay	Stock route loop	A circular route between the valley floor, Okains Bay Road and Ngaio Grove.
Takamatua	Takamatua headland	Both a circular headland trace and a direct walking route between Takamatua and Akaroa via Children's Bay.
	Takamatua stock route	Formerly a Country Ramble, this route would follow a double fenced stock route from Takamatua up to Summit Road.
Akaroa	Children's Bay	The Council is developing a short, fully accessible walkway between Children's Bay and the recreation ground. It is anticipated that work on this project will commence near the end of 2007.
	Lower Traverse	A route linking reserves in Akaroa Township from Waeckerle's Green to Britomart monument.

Please note that these are *potential* walks only. Their identification is only a pre-cursor to assessing their feasibility for development as a new walkway. The provision of visitor infrastructure and the impacts on ecological and culturally sensitive environments will need special consideration before any new routes are finalised.

Full public access has been recommended for all these tracks, with the exception of private permits being an option for the Takamatua headland and the Long Bay Road/Takamatua valley routes. A formalised permit system is more suited for longer routes in remote locations and avoid the need for walkers to contact landowners directly to obtain permission and organise access across private land. Landowners can set conditions regarding access at different times of the year and an appropriate financial contribution may be made to compensate landowners from the proceeds of permit sales. Other options for formalising access over private land include land purchase, easements, double-fencing and/or incentives for landowners such as rates relief and assistance with fencing, subdivision or resource consents.

Issues associated with walkways

Urban planning factor	*Issues*	*Flow-on effects*
Walkways	Changes in land ownership puts walking routes crossing private land at risk of closure (some have already been closed), reducing accessibility for both locals and visitors.	• Failing to protect existing or potential walkway routes will result in lost opportunities. • Failure to meet visitor expectations and the economic impacts associated with this. • Potential for increased conflict between walkers and mountain bikers.
	Despite an increase in demand for recreational walkways, there is a lack of walkways in some settlements.	
	The quality of some walkways and reserves has deteriorated over time.	

Information requirements regarding walkways

- For any identified potential future growth areas, mapping of existing and potential walkways/routes.

Note: Please refer to the Transport Infrastructure section of the Physical Environment Chapter (Chapter 7) for additional information on walking and pedestrian activities.

A walkway bridge through a public reserve, Akaroa

6. SOCIAL ENVIRONMENT

This section identifies the strategic social issues associated with the past, present and future patterns of human settlement in the Akaroa Harbour Basin. The past has given the settlements their historic character and heritage, which we must acknowledge and protect, whilst changes in population and community structure from now into the future create challenges as to how we plan to provide and/or support social infrastructure. Social infrastructure refers to the networks, services and other opportunities that allow communities to generate wealth, find security and meet their needs, for example through the provision of community facilities, recreational opportunities, local government structures, voluntary organisations and social services. Being able to provide high quality social infrastructure is one of the characteristics of a strong community, enabling all citizens to attain a high level of well-being.

Historical Context

The Akaroa Harbour Basin has a dramatic and nationally important history that shapes the context within which community identity and visitor perception is formed today.

Settlement

Maori settlement

It is recognised that Maori settlement began on the Peninsula (which is known as *Te Pataka o Rakaihautu* or *Horomaka*) 700-800 years ago. Virtually every bay on the Peninsula was settled by Maori and links were maintained with other settlements throughout the South Island. There were generally three waves of settlement, with the first being by Waitaha and the second by Ngati Mamoe. The third was a result of successful southward migration by Ngai Tahu, and it is this settlement that has most shaped the current relationship of Maori with the area.

In addition to the physical remains of human occupation (ie the remains of villages, pa and burial places) is the strong relationship of Maori with the land, water bodies, other waahi tapu (spiritually and culturally sacred sites) and other taonga (treasured things, tangible and intangible).

View of Akaroa Harbour from Hilltop circa 1921 (Photo courtesy of Christchurch City Libraries)

European settlement

European involvement began with the sealers and whalers who traded with Maori from the 1790s, however it was not until the 1800s that European settlement became prevalent. A key historical event is that of the 1830 attack of the settlement of the Ngai Tahu chief, Te Maiharanui, by the Ngati Toa chief, Te Rauparaha, resulting in the deaths of many men, women and children at Takapuneke and later at Onawe. Some consider the involvement of the British Captain Stewart and the merchant ship *Elizabeth* in this event to be one of the reasons that led to the British authorities visiting the Bay of Islands in 1833 and, to the consequent signing of the Treaty of Waitangi. In 1840, the Treaty was signed by Ngai Tahu chiefs at Onuku, one of the few South Island signing locations, and the *HMS Britomart* was dispatched to raise the British flag at Green's Point, demonstrating British sovereignty to the arriving French and German settlers. The Britomart Memorial on Green's Point exists today to commemorate the raising of that flag on 11 August 1840. Therefore, these sites in close proximity to each other, Takapuneke, Green's Point and the Britomart Memorial, are nationally significant to the history of New Zealand.

On 17 August 1840, six days after the British flag was raised, the Comte de Paris arrived and anchored at Akaroa. The approximately 60 French and German settlers were landed on 19 August and set about clearing land and establishing settlements. The French settled in Pakariki Bay (now the northern end of Akaroa), and the Germans in Takamatua. European settlement continued in earnest in the early 1840s with the arrival of English, Irish and Scottish settlers. A French map published in 1843 shows English settlements at Wainui, Duvauchelle, Robinsons Bay and just south of Akaroa; French settlements at Akaroa and Takamatua; and Maori settlements at Onuku, Tikao Bay and south of Wainui.

Place names in the area strongly reflect the settlement history. For example, a farm was established on the western side of the Harbour to service a permanently stationed warship; hence the place name, French Farm. Some reflect historical identities, such as Barrys Bay, which is named after a local shepherd; Robinsons Bay after Magistrate Charles Robinson; Green's Point after W Green, one of the Rhodes' stockmen and later a publican; and Duvauchelle after two French brothers who settled at Akaroa and were granted sections at Duvauchelle.

The pressure for land led to almost all of it being owned by Europeans or the Crown, with two relatively small areas of land being granted to Maori in the 1800s following protests through the Courts. These were at Onuku (426 acres) and Opukutahi (432 acres near Wainui). There are still some outstanding issues surrounding the appropriation of Maori land at that time.

Cultural and built heritage

Akaroa history and heritage

Akaroa is described as an exceptionally well preserved example of a colonial New Zealand town of the second half of the 19th century. The most obvious influence at first glance is that of the French in Akaroa. Buildings, signage, colours and street names celebrate that which is French and continue the identification with the original French settlers. Their legacy is also maintained in the place names of, for example, Duvauchelle and French Farm, as mentioned earlier. The Britomart Memorial marks a place of significance in European settlement history, and many other protected and notable buildings, objects and sites are listed within the District Plan. Among these is the Akaroa Historic Area (AHA), which is listed by the New Zealand Historic Places Trust (**NZHPT**) and covers a significant portion of the Akaroa Township.

The Council has acknowledged that the AHA could be better incorporated into the District Plan and is investigating a Plan Variation to look at a number of issues, including reviewing the character and significance of the AHA, its size and scope and the rules and design guidelines applicable within it and adjoining it, particularly with respect to the framing hill slopes. Another piece of work completed in 2005, the Akaroa Streetscapes Report, recommended a number of follow up actions aimed at protecting the historic character of Akaroa, including provision of car parking areas away from the AHA, recognition of the archaeological significance of Akaroa, and protection of the historical associations and natural character of watercourses and streams. The Council resolved to adopt this Report as a reference document to guide decisions about changes in the Akaroa town area. This type of ongoing work by the Council is a reflection of the community's strong desire to maintain the historic character of Akaroa.

Maori heritage sites

Overall, the residents of the settlement study areas will have a general knowledge and awareness of the European, and more particularly French, history of the area and the French connection is actively marketed to visitors. Less obvious is the Maori influence on the built environment.

Today, there are five Papatipu Runanga of Te Runanga o Ngai Tahu located on Banks Peninsula. The Onuku and Wairewa Runanga represent the interests of Ngai Tahu within the settlement study areas. Onuku Marae is situated approximately 5km from the Akaroa Township towards the Heads of the Harbour. Wairewa Marae is situated in

Okana Valley on the eastern side of Te Roto o Wairewa (Lake Forsyth), just beyond Little River on the Christchurch - Akaroa Highway.

A large number of sites of significance to Maori are located within the settlement study areas, one of which is Takapuneke, as discussed earlier. Despite the significance of this site, it has been used for a rubbish dump, sewage treatment plant and has been zoned in the District Plan for residential subdivision (although this zoning will not be implemented). In 2002, the NZHPT registered the entire area as waahi tapu. The significance of the site has now been recognised and discussions between the Onuku Runanga, the Council and the Government about the future of Takapuneke are ongoing.

Sites of significance within the settlement study areas are generally shown as archaeological sites and silent files. There are over 200 archaeological sites listed within the District Plan on Banks Peninsula as a whole, although not all of these are related to Maori occupation. The District Plan states that the sites are located within a 100m radius of the location marked on the planning maps. A radius has been identified because the exact locations of the sites are not known by the Council and because there may be other sites within the vicinity of the marked site. Importantly, the District Plan acknowledges that the schedule is not complete and that further work is required. Information gathering, to better inform understanding and future management of archaeological sites, may occur in future years in conjunction with the NZHPT.

'Silent file' areas are also shown on the planning maps, which indicate the general location of particular sites or features of significance to Maori. The extent of the silent file is necessary so that the precise location of certain waahi tapu are not revealed. Land development is not necessarily precluded from these areas, simply, the proposed siting of activities needs to be undertaken in consultation with Runanga.

The settlement study areas are affected by a number of archaeological sites and silent files listed in the District Plan, as follows:

Table 15: *Archaeological sites and silent files in proximity to settlement study areas*

Settlement	Archaeological site descriptions and numbers		Silent files
Wainui	Midden(s)	156	
Tikao Bay			23, 24
French Farm	Oven(s)/midden(s)	105, 106, 109	
Barrys Bay	Midden(s)	99	
Duvauchelle	Oven(s)/midden(s)	97, 98	26
Robinsons Bay	Oven(s)/hangi stones	100	
Takamatua	Midden or oven(s) or both with moa bone	110	27
Akaroa	Terrace(s) and midden(s)	148	27, 28

The influence of heritage on community identity

Unique character

Heritage issues will continue to play an important role in defining the future of the settlements in the harbour basin. In addition to the national significance of the history of the area as a whole, the unique historic character that exists in Akaroa today strongly influences community identity and visitor perception and, in combination with the landscape features of the area, is one of the mainstays of the vibrant tourism industry in the Basin.

The community has expressed a strong desire to maintain the historic character of Akaroa and to protect Maori sites of significance. This is further reflected in the provisions of the District Plan and the work carried out by the Council in recent times, for example, the AHA Variation work and the Akaroa Streetscapes Report. There are, however, potential threats to historic character and heritage values arising from private development and public works.

Potential effects of development

With respect to private development, the Akaroa design guidelines seek to give a strong direction to those undertaking new development, however concerns have been expressed that development is still occurring which potentially undermines the historic character of Akaroa, particularly where it adjoins and/or surrounds the AHA.

It has also been commented that the new street furniture and road/landscape treatments used, ie street lighting, kerbs, paving, planting, seating and bollards, have the potential to significantly undermine the historic character of the area. The Beach Road redevelopment in Akaroa is often mentioned as an example of enhancement work that is not considered to be particularly in keeping with the historic character of Akaroa.

There is a need to balance conflicting requirements in the context of planning for the future of the settlement study areas:

- At the wider level, archaeological sites and silent file areas will limit the extent of development to a degree.
- At the town level, in Akaroa for example, retention of historic character will affect the capacity and density of the town as a whole, but will also affect any new development at a more detailed level in terms of architectural style, fencing, etc. Another example might be the demand for car parking versus the demand for vacant land for residential development versus the historic character of the town.
- At the micro level, an example might be that heritage kerbs in Akaroa may be a safety problem at peak times and for the less mobile.

Less is known with respect to these types of heritage issues in the settlement study areas other than Akaroa, however there may be similar issues to address within all settlement study areas. A further factor to consider is that towns and settlements can, and should, evolve and that in protecting what is precious from the past we must also enable communities of the present and future to make the place their own and contribute to their own 'layer of history'.

Understanding and protecting heritage

A Cultural Heritage Thematic Study for Banks Peninsula is planned to be commissioned this financial year. A preliminary overview of the current PBPDP heritage schedules is also planned. A review of the Heritage Grants Policy is underway as the Council moves towards better alignment between the CCC and the former BPDC standards for heritage significance.

An example of European heritage: the Gaiety Hall (circa 1879)

Issues relating to the influence of heritage on urban planning

Urban planning factor	*Issues*	*Flow-on effects*
Historic character and heritage values	Character and/or heritage values in some settlements (eg Akaroa historic character, archaeological and waahi tapu sacred sites) can be compromised if subjected to development pressures, particularly if these are not appropriately acknowledged and built into forward planning exercises. This may result in restrictions to future settlement size and form.	Potential adverse effects on community identity, tourism and, therefore, the economy, if character/values are eroded.
	Public works may not reflect historic character of certain settlements eg street furniture/road works.	
	Conflicts may exist between servicing requirements and heritage values, eg safety issues with respect to heritage gutters.	
	City Plan rules and associated mechanisms, for example: • Cultural Heritage rules; • AHA and surrounds rules; • the design guidelines; and • potentially insufficient funding sources, may not be adequate to ensure retention of historic character and individual listed items.	
Evolving communities	Protecting only previous layers of history can create a 'museum piece' settlement if care is not taken to reflect existing and future community values where appropriate.	Potentially appropriate, attractive and vibrant additions to a settlement (eg public art and other installations) may be overlooked to the detriment of the community and the economy

Information requirements regarding the influence of heritage on urban planning

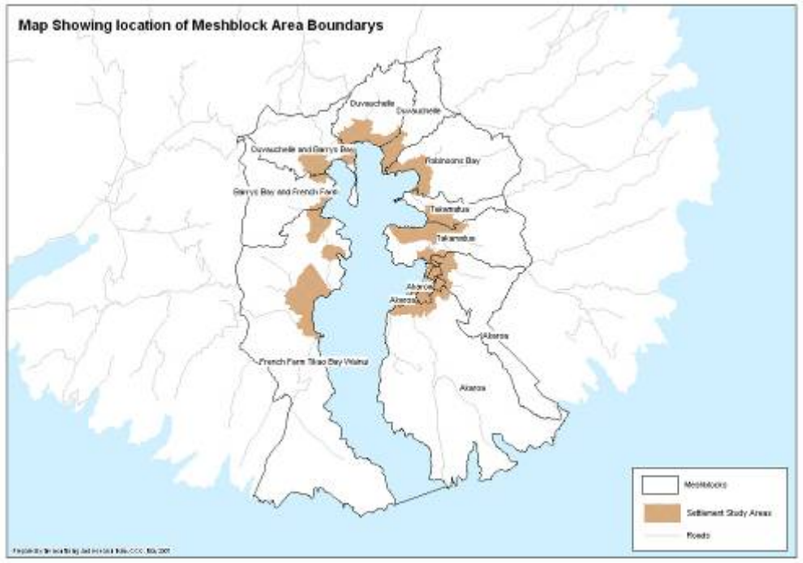
- Whether archaeological site protection is necessary, or just recognition of those sites when development is undertaken.
- Further clarification of silent file boundaries may be beneficial if they become the defining constraint to any long-term settlement consolidation.
- Identification of any constraints associated with, or introduced by, the AHA Variation work.
- Identification of mechanisms and initiatives to reflect and promote present community values while protecting historic sites and character.

Community Structure: Population Characteristics

The population projection figures, and the source of those, are discussed in detail in Chapter 9: Managing Urban Change. This section concentrates on other aspects of the population, eg age, ethnicity, employment, etc.

It should be noted that the information used to describe the population in this section is that obtained by the 2006 Census. That 2006 Census data was compiled for seven meshblocks, however those meshblock boundaries do not correspond to the eight settlement study areas and, in some cases, cut through settlements or include more than one settlement. The '*names*' in italics in this section actually refer to the meshblocks, not the settlement study areas, as per the map below.

Map 10: Meshblock area boundaries



The information that will be discussed in Chapter 9 (Managing Urban Change) indicates that the harbour basin is not currently experiencing a population growth issue and that the growth of dwellings is increasing faster than the growth of permanent residents. Additional information concerning these permanent residents is given below:

Household composition

In the *harbour basin*, 79% of households are made up of one or two people. This is higher than Christchurch (60%) and New Zealand (57%). The percentage of (one and two person) households varies between meshblock study areas with *French Farm / Tikao Bay / Wainui* being the highest (89%), and *Robinsons Bay* the lowest (62%).

Median Income

Akaroa contains the meshblocks with the highest and lowest median income of $28,900 and $18,000 respectively, followed by *Robinsons Bay* with $18,900. All other meshblocks range from $21,000 to $24,600. For comparison purposes, the Christchurch median is $23,400 and the New Zealand median is $24,400.

Age

The *harbour basin* has a higher median age (being between 41.5 and 59) than Christchurch (36) and its population has been ageing over the last ten years, with the median age increasing for all areas except *Robinsons Bay*. *Barrys Bay and French Farm* has the largest percentage of the population (33%) aged under 15 years. *Takamatua* has the highest percentage (30%) aged over 65.

Ethnicity

The dominant ethnic group in the *harbour basin* is European (77%), which is similar to the Christchurch and New Zealand figures (75% and 68% respectively). A lower percentage of the population identified with the Maori ethnic group (5%), compared to Christchurch (8%) and New Zealand (15%), and with the Asian (1%) and Pacific (0%) ethnic groups, compared to Christchurch (8% and 9% respectively) and New Zealand (3% and 7% respectively).

The information above gives a picture, as at 2006, of the inhabitants of the *Akaroa Harbour Basin*. The population is ageing and residential households are small. There also appears to be an increase in the percentage of holiday homes in the area (refer Chapter 8: Economic Environment for further information on holiday homes and housing affordability). This could lead to increased property prices and a lack of affordable housing for families in the area. These factors in combination would adversely affect the ability of the resident population to service increasing visitor and resident population numbers in future.

A reduced percentage of families in an area will have effects in terms of available workforce. It could also have significant community effects with respect to social cohesion, the future of schools, health providers, clubs, community facilities and other such services.

Catering for the youth: skateboard facilities at the Akaroa Recreation ground

Issues relating to community structure

Urban planning factor	***Issues***	***Flow-on effects***
Community/population change	The workforce is ageing and residential households are small. A reduced percentage of families may affect the servicing capability (availability of health, education, community and social services) and social cohesion of the area.	Potential adverse effects on community identity, tourism, employment and therefore the economy.

Strong Communities

Developing strong communities is about assisting and encouraging communities to achieve the things that are important to them. This will be reflected in a flourishing community and voluntary sector that is rich in informal networks and has effective community involvement in decision-making. Community well-being is a complex mix of social, environmental, economic and cultural factors. Strong communities support community well-being by:

- giving people a sense of belonging;
- being adaptable in response to adversity;
- having capable, enterprising leadership;
- promoting social trust and participation; and
- generating resources from inside and outside the community.

The development of strong communities is a priority for the Council, which takes a strategic role under the Local Government Act 2002 (**LGA**) in co-ordinating community, government and voluntary organisations in support of community development. This is reflected in the LTCCP, which includes a Community Outcome that supports the development of 'Inclusive and Diverse Communities': *"Our diversity is seen, heard, valued and celebrated. All people feel a sense of belonging and participate in the community".*

The importance of strong communities in achieving this Community Outcome is recognised in a 'Strengthening Communities Strategy' released in July of this year. This strategy provides a framework to guide the Council's own contribution to strengthening communities by recognising that *'Strong communities give people a sense of belonging and encourage them to take part in social, cultural, economic and political life. This participation and the support that such communities can offer in times of stress promote the well-being of individuals and families/whanau*'.

The eight goals of this strategy include:

- understanding community needs;
- promoting collaboration between agencies;
- enhancing engagement and participation on local decision-making;
- helping build and sustain a sense of local community;
- ensuring communities have access to community facilities;
- increasing participation in recreation programmes and events;
- enhancing the safety of the community and neighbourhoods; and
- improving resident's basic life skills to enable them to participate fully in society.

As this Strategy is a strategic overview document it does not assess specific needs. However, an Implementation Plan will be developed in the future. This will be a more detailed piece of work and may include more specific assessment of the settlement study areas. In the meantime, the eight goals of the Strengthening Communities Strategy will play a key role in how public facilities and services are provided and managed in the future.

Community facilities

Community facilities fulfil a wide variety of social, educational and recreational needs, providing places for people to meet, play and learn. This gives people a sense of belonging and encourages them to contribute to the social, economic and political well-being of their community. As the population increases, additional services and facilities may be required. These may include cultural and recreational facilities, health care services, provision for cemetery space, and special care facilities. These facilities are generally provided by the Council, community groups, voluntary organisations and other local or central government organisations such as the Canterbury District Health Board and the Ministry of Education. Open space, reserves and walkways may also be needed – these are addressed under the Natural Environment Chapter (Chapter 5).

The Council is currently developing a Community Facilities Network Plan as signalled in the Strengthening Communities Strategy. This Plan will consider, amongst other issues, the community facility needs of Banks Peninsula communities. It is noted, however, that as part of the **Memorandum of Understanding** (MOU) between the former BPDC and Christchurch City Council, levels of service have been ring-fenced for five years. Over time, the Council proposes to align services in Banks Peninsula with those it provides for city residents, recognising that rural facilities are an essential means for supporting the unique communities that comprise Banks Peninsula.

Community centres/halls and groups
Within the settlement study areas, there are six Council-owned community buildings. These are:

- the Wainui Community Hall;
- Duvauchelle Community Centre;
- Akaroa Sports Complex / Play Centre;
- Akaroa Toy Library;
- Coronation Library; and
- Gaiety Hall.

Community development groups include Safer Banks Peninsula, Akaroa Youth Initiative and the Akaroa Resource Collective Trust (Heartlands).

Further information is required with respect to existing facilities and groups within the settlement study areas. However it is known that general community use of privately owned buildings, eg church halls, does occur.

Libraries
The original public library, the Coronation Library, is still in operation today. However, the relatively new Akaroa Library fulfils the primary needs of Akaroa, operating in partnership with the Akaroa School. It is understood that there are no other libraries within the settlement study areas. The Council's Libraries 2025 Strategy is in development and will review the requirements of the physical infrastructure of the libraries network, including any new developments, for the next twenty years, and will review the requirements for asset maintenance of the existing infrastructure.

The Akaroa Library and Cinema building

Schools
The Ministry of Education is responsible for providing state education. The Ministry's approach to population growth is responsive, with population statistics and demographics being reviewed annually. This will identify trends and provide sufficient lead time for the development of new facilities. The provision of tertiary facilities, however, is purely market-driven.

Within the settlement study areas, there are two schools: Akaroa Area School and Duvauchelle School. Akaroa Area School is a Year 1-13 (primary and high) school on Rue Jolie in the Akaroa Township. It has a roll of approximately 110 students and is listed as a decile 8 school. Duvauchelle School caters for students up to Year 6 (age 10/11) and is located on School Lane in Duvauchelle. It has a roll of approximately 40 and is listed as a decile 10 school. Information with respect to the prevalence of home and correspondence schooling is not known.

Consultation with the schools and their local communities is expected to identify any issues relating to schools and schooling in general.

Public reserves/open space
There are a number of areas zoned as Recreation Reserve within the settlement study areas at Akaroa, Takamatua, Robinsons Bay, Duvauchelle, French Farm and Wainui. Conservation Reserve Zoning is located within the Akaroa and Barrys Bay study areas. The total area of land zoned by the District Plan for reserve purposes is approximately 67ha. The 2006 Census data shows that Takamatua and Robinsons Bay have low open space per head of population compared with other areas within the basin. It is noted that there are also a number of other properties contributing to the perception of open space generally, eg DoC, QEII covenant and private farming land.

In terms of future management, the Council has identified that development plans are required for a number of reserves, eg the Garden of Tane and Stanley Park.

Recreation
Many other recreational activities take place in the wider area. In particular, these include maritime and tourism-related activities, eg boating, sailing, swimming, water sports, fishing, walking, tramping, mountain biking, cycling, sightseeing, camping and campervan touring.

There is a Council-owned camping ground at Duvauchelle and a privately owned one in Akaroa. Other informal camping opportunities may exist. The Council also owns a number of coastal structures in the harbour basin. The availability of these facilities for public use is controlled under the Banks Peninsula District Council Marine Facilities Control Bylaw 2002.

The recreation potential of some sections of the coastline is restricted by the proximity of residential areas and the main road. For example, French Farm Bay suffers from the proximity of the road to the beach and a lack of recreation/picnic space in the beach hinterland. This is particularly noticeable when the road berm is used by parked vehicles. Although Wainui Beach has an undeveloped reserve area close to the coast, the road between the reserve and the beach potentially reduces its usefulness to beach users.

The amenity of some potential recreation areas can be detrimentally affected by a lack of, or poor quality, facilities such as planting, toilets, car parks and information on access. Parking lay-bys in places with high quality views is not a strong feature of the basin, with the exception of Hilltop above Barrys Bay.

Again, it is expected that consultation will clarify what other recreation opportunities might be sought in the settlement study areas. It appears that sporting and outdoor opportunities exist, however there may be more limited opportunities in terms of after school programmes, continuing education for adults, and certain cultural activities, eg theatre and other live entertainment, concerts, etc. It is not known whether children and youth are adequately catered for at present. Having a diverse range of recreational and cultural activities that are accessible to the wider community is identified in the Community Outcome of "A City for Recreation, Fun and Creativity": *"We value leisure time and recognise that the arts, sports and other recreational activities contribute to our economy, identity and well-being".*


Community recreational facilities: Wainui tennis courts

Community services

It is important that healthcare is available for all harbour basin residents. The New Zealand Fire Service (Akaroa Volunteer Fire Brigade) operates from Akaroa, and there are also hospital, medical, ambulance, Plunket and physiotherapy services based in Akaroa, which generally serve the Basin as a whole. Health care provision is a central government responsibility, but opportunities for a range of health care facilities can be provided through city plan mechanisms.

A review completed in 2005 by the Canterbury District Health Board (**CDHB**) for all rural areas in Canterbury identified a number of issues relevant to the settlement study areas:

Table 16: *Review of health services in the Akaroa Harbour Basin (2004/05)*

Primary care	The number of General Practitioners (GPs) is adequate, although the medical workforce is ageing in general.
Maternity care	Post-natal services in Akaroa were mentioned as excellent.
Mental health services	The Rural Mental Health team travels to Akaroa to offer its services.
Residential care	Pompallier House in Akaroa is a community trust owned rest home, but had low occupancy rates and its place within the community is unclear.
Dental Health	At the time, Akaroa was facing the loss of the school dental clinic, which was shared by the school therapist and a private dentist[2].
Maori health services	There is no dedicated Maori Health provider.
Emergency services	In Akaroa, the volume of emergency calls is increasing, but only one vehicle is available for acute calls.
	St John Ambulance, ACC and the New Zealand Fire Service are working together to identify the best use of the vehicles and staff at Akaroa.
Environmental health	Environmental health officers visit Banks Peninsula once a week.
Specialist health services	It was considered that the sending of specialist teams to Akaroa might be a cost-effective option.

Specific details provided with respect to Akaroa Hospital, as at 2005, were as follows:

Table 17: *Akaroa Hospital statistics*

Number of GPs	2
Number of hospital beds	7 (5 general, 2 maternity)
Yearly admissions since 1999	163
Average age on admission	64 years (median was 70 years)
Average length of stay	10 days
Average occupancy rate	60%

The report also notes that the use of Akaroa hospital for rest and relief, and obstetric (ie related to child birth) services has been steadily declining. The CDHB advises that this information has not been updated since 2005.

Akaroa Hospital – providing a range of medical services to the community

[2] It is understood that the school dental clinic has been retained but is now located at the Rue Jolie site. It is also understood that the one private dentist in Akaroa has since retired.

Community expectations

The June 2005 Council Community Survey identified projects requested by community groups as follows:

Table 18: *Potential projects in study areas as identified by community groups in 2005 survey*

Akaroa Township	Availability of foreshore/beach at Akaroa for sailing/boating should be preserved
	Council should continue to support the Akaroa School/community library
	Increase support for Akaroa Information Centre
	Upgrade Akaroa boat park toilets
	Create a walking link between Akaroa and Takamatua
	Campervans should be excluded from Akaroa town centre
Takamatua	Retain Council-owned land adjacent to the beach for use as a reserve
	Takamatua needs a larger or a second boat ramp to accommodate growth in residential population and tourism
Wainui	Provide more waterfront picnicking facilities (seats and bins) in Wainui to encourage visitors
	Upgrade facilities and maintenance at old Wainui schoolhouse (esp. toilets) including signage from the street
	Support full implementation of Stanbury Reserve plan
	Consider benefits to the community of setting up a Wainui Reserves Board
Inner harbour in general	Support for a map and signage project in Akaroa Harbour to encourage walking

A number of submissions were also made to the 2005/06 Annual Plan. These sought, or were supportive of, the following:

- funding support for toilet/ablution facilities at Duvauchelle Reserve;
- continued maintenance and signposting of the District's walking tracks;
- retention of the primary school in public ownership as a learning/continuing education centre[3];
- increased spending on reserve maintenance;
- completion of the District Walking and Cycling Strategy;
- full funding of the Akaroa Information Centre;
- funding assistance for the first phase in the development of Stanbury Reserve;
- boat park landscaping;
- Council preventing permanent occupation sites at Duvauchelle and Pigeon Bay Recreation Reserves;
- Council funding to complete the Akaroa Skate Park Project; and
- allocation under the Cemeteries budget towards the construction of concrete berms in the Duvauchelle and Akaroa Anglican Cemeteries.

In addition, a 2006-2016 submission to the LTCCP requested a management plan for the Garden of Tane. It also considered that there was a need for facilities to provide recreation and leisure for visitors, such as a covered, heated swimming pool, and that the walking tracks needed to be better maintained, and extended, in and around Akaroa. An integrated system of interpretive signs that would inform visitors of the places of historical significance was also requested. This is currently being progressed as a project under the Council's 'Visitor Strategy'.

The expectations of the communities currently living within the settlement study areas, in terms of community facilities in general, is expected to be further defined through the consultation process.

Community facilities and services in the context of strong communities

Community facilities and services figure strongly in the planning for the future of any community, being pivotal to community identity and social cohesion. They promote the ongoing health of a community - socially, physically and culturally - while also contributing significantly to the safety, amenity and attractiveness of a place.

Changes in the numbers and demographic of the resident population will affect the demand for, and the type of, community facilities and services provided. At present, however, the defining factor within the settlement study areas is more likely to be the peak tourism seasons, when there is increased demand for facilities (such as libraries and reserves), and services (such as medical, ambulance and fire).

[3] It is understood that the Ngai Tahu Development Corporation has now exercised its option to develop the Junior School site just above Beach Road. The local community has expressed concerns with respect to the future of this land.

An increase in resident population and visitor numbers will require the provision of facilities and services that can cater for the increasing demands. An increase in visitor numbers which is not matched by a corresponding increase in resident population may also result in increased pressure on facilities and services, particularly those services which rely on resident volunteers, eg ambulance and fire.

In addition, an ageing population and ageing medical workforce may be an issue that constrains the type and adequacy of future service provision in the area.

Future planning for the provision of community facilities and services is expected to rely on the identification of any existing gaps in that provision, and on the identification of the future planning necessary to manage urban change, ie population / tourism changes.


Vet services, Akaroa


St John the Evangelist Anglican Church, Duvauchelle

Toy library, Akaroa

Community centre, Duvauchelle

Issues relating to strong communities

Urban planning factor	*Issues*	*Flow-on effects*
Community facilities and services	A long-term increase in residents and/or visitors is likely to increase pressure on community facilities and services, including: (a) existing services, such as: • voluntary organisations; and • medical and emergency services, particularly in light of a potentially ageing group of professionals currently providing this service; and (b) the need for future additional facilities and services, including: • those catering for youth and children; • continuing education facilities; and • a variety of cultural activities.	• Not meeting the demand for facilities and services could result in potential adverse effects on community identity, social cohesion and safety and, therefore, result in reduced attractiveness to residents. • Reduction in the residential population could affect the servicing of the tourism sector.
	Recreational demand may result in a tension between: • environmental/cultural values; • private land rights; and • pressure for access to leisure activities.	There could be potential effects on the environment, cultural values and private land rights, should the demand for recreation outside public provision increase.
	Potential recreation opportunities are restricted due to limited access and space available in the beach hinterland and poor quality (or a lack of) facilities.	Not meeting demand for recreational activities can limit the attractiveness of an area for residents and visitors, with flow-on effects for individual well-being and for the tourism economy.

Information requirements regarding strong communities

- Community views on the range, number and capacity of community facilities and services in the study areas.
- A better understanding of the health service needs of the area (in collaboration with the work being undertaken by the CDHB for the UDS).
- An inventory of existing community facilities and services, and corresponding assessment of:
  - adequacy of provision;
  - current capacity; and
  - likely future capacity requirements.

7. PHYSICAL ENVIRONMENT

Communities require water and roads, and produce sewage and solid waste. The associated facilities are usually provided for by the Council. Other infrastructure, such as electricity and access to technology (eg broadband) is provided by the private sector. These infrastructural features and services not only modify the environment but require substantial capital investment as well as ongoing operating expenditure. If communities grow, either as peak populations or by way of increasing numbers of permanent residents, this will lead to an increase in demand on essential services. This section focuses on infrastructure that services the population that lives within, and visits, these study areas.

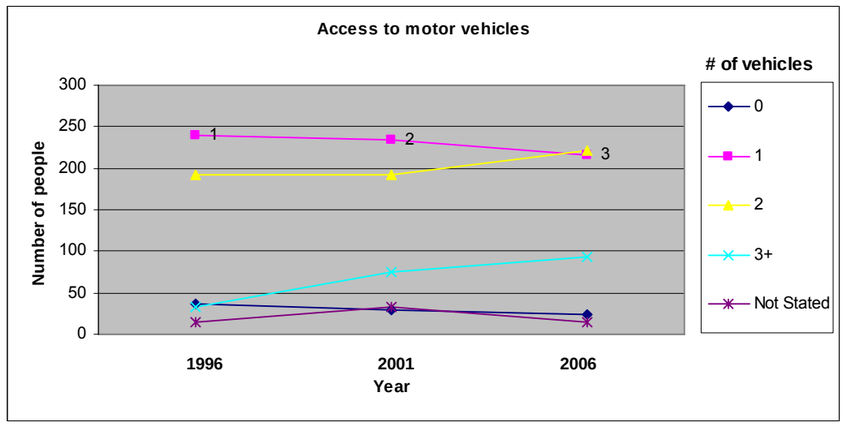
Transportation and Roading Infrastructure

Transportation is fundamental to maintaining our quality of life. It provides people with access to education, employment, services and recreational opportunities. It allows for the movement of freight, essential to economic well-being. Roads (and other transport routes) serve as community spaces. How people choose to travel affects the physical and natural environment through the emissions of pollutants, noise and greenhouse gases, and determines whether or not the roads are pleasant and safe to use.

Transportation modes - current situation

Information on motor vehicle accessibility and travel to work statistics has been obtained from Statistics New Zealand. This information shows that the communities of the Akaroa Harbour Basin exhibit similar patterns to Christchurch and New Zealand in terms of an increasing reliance on private motor vehicles. The strongly car-orientated nature of the harbour basin is most likely a reflection of both the topography (steepness) and the valleys that separate adjacent residential areas. Access to vehicles is increasing overall, as shown in Figure 1 below.

Figure 1:*Household access to motor vehicles in the Akaroa Harbour Basin 1996-2006 (Statistics New Zealand)*



A reliance on the motor vehicle as a means of travelling to work has not experienced a significant increase overall (Figure 2). People are more likely to use a motor vehicle (eg car) to travel to work compared to other modes (eg walking). Whilst there has been an decreasing reliance on motor vehicles to travel to work in Akaroa Township, the reverse is true for elsewhere in the harbour basin.

Other modes of travel for getting to work have not changed significantly. There has been a slight decline in motorcycle use between 1996 and 2006. Approximately 80% of people who walk to work live in Akaroa.

The statistics for people who do not travel to work or did not work on the day of the Census are not shown on these graphs. For the period between 1996-2006, 20-26% of the harbour basin population worked from home (compared to 5-6% in Christchurch City) and 12-13% of people did not work on the Census day (compared to 11-12% in Christchurch City).

Figure 2: *Motor vehicle travel to work in the Akaroa Harbour Basin 1996-2006 (Statistics New Zealand)*

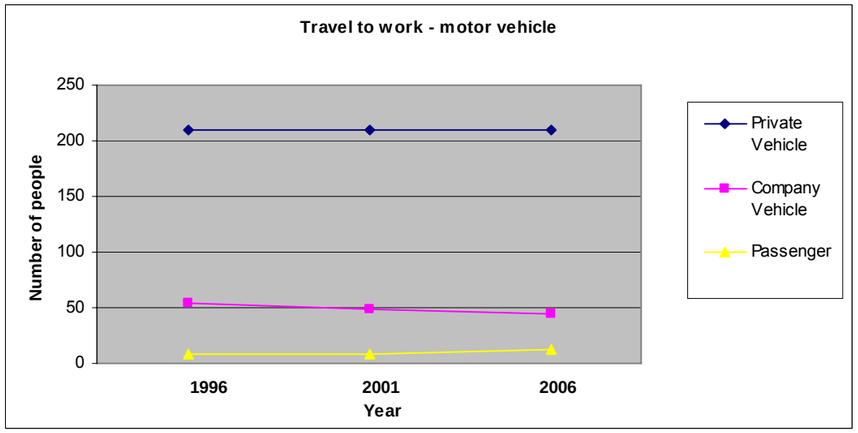
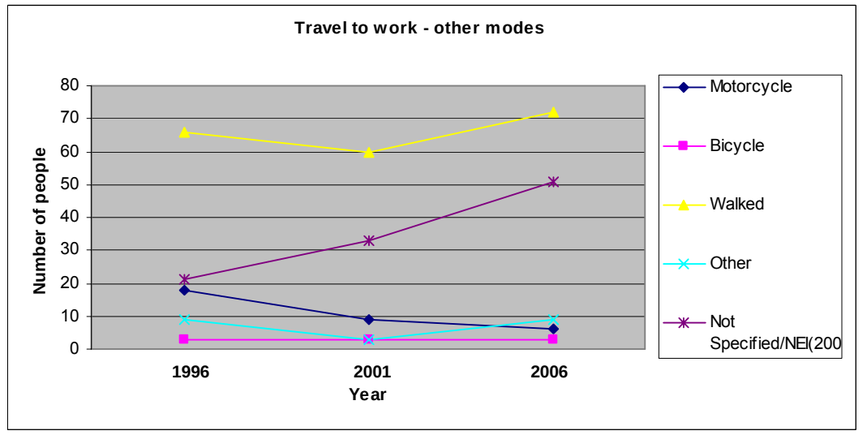


Figure 3: *Other modes of travel to work in the Akaroa Harbour Basin 1996-2006 (Statistics New Zealand)*



Roading networks

Access to the coast and waterways, to business areas, to key tourist destinations and to homes requires an effective roading network to be established and maintained. The efficiency and safety of the road network requires minimising conflicts between various road users, for example by controlling access to and from high traffic generators, protecting the amenity of sensitive living environments, and designing roads to meet the design criteria for each classification of road. It is important to plan the roading network in conjunction with surrounding land uses and recognising the capacity limitations of existing roads.

Both the Canterbury Regional Land Transport Strategy (**CRLTS**) and the PBPDP establish a series of objectives and policies addressing the roading network. For example, the District Plan ensures that new developments are serviced with appropriate roading infrastructure and recovers the cost of this from developers; it also establishes standards for access, parking and loading. Key aspects of planning for the roading network are discussed below.

<u>Roading hierarchy</u>

Each road in the study areas is classified with respect to its planned traffic function and the surrounding land uses. State Highway 75 (**SH 75**) is the only strategic road servicing the area. Because of its classification as a State Highway the maintenance and management of this road is carried out by Transit New Zealand. The roads with the highest classification (eg SH 75) provide for the greatest level of movement with a minimum access function, while

more local roads (eg Seal 2 in Table 19) provide a higher level of access and less through movement. The latter roads are managed by the Council through a Roading Policy, set in place by the former BPDC. Under this policy, all roads are classified depending on their formation, function and level of use.

***Table 19**: Road hierarchy classification*

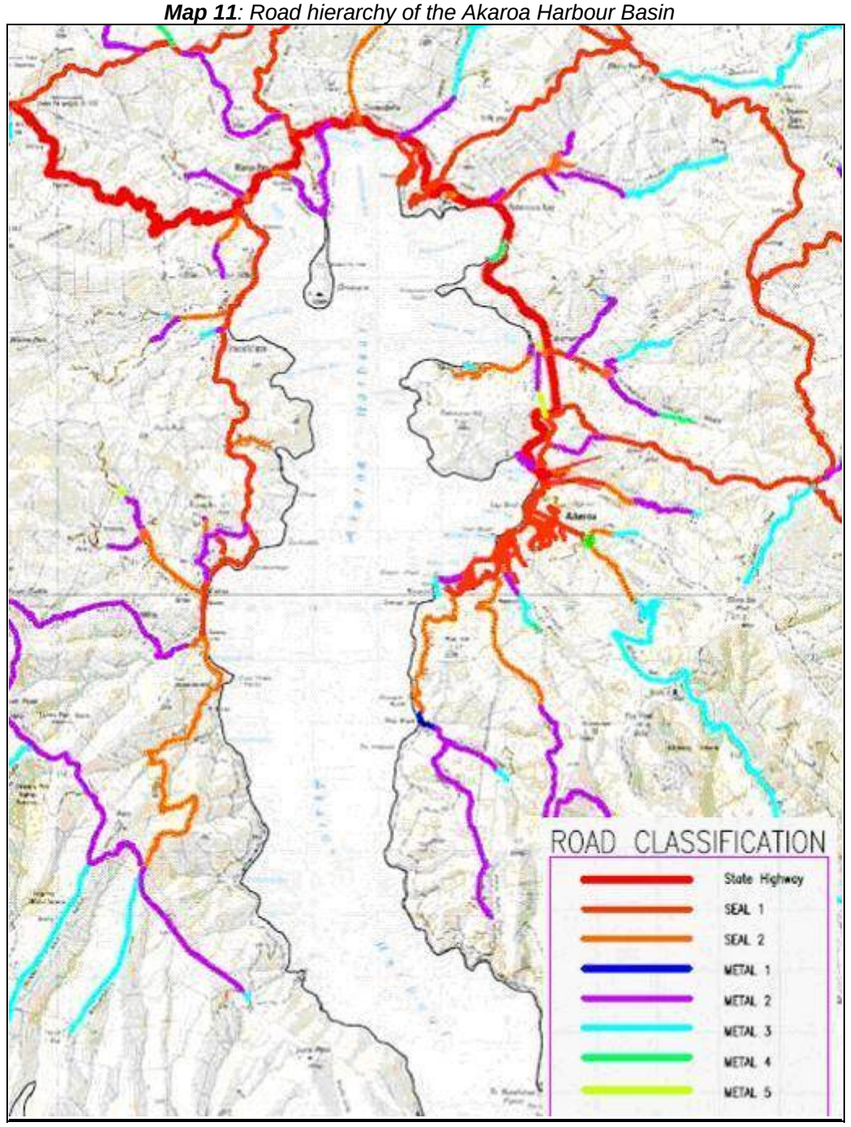
Seal 1	Performs the function of a sealed arterial road
Seal 2	Performs the function of a sealed distributor road
Metal 1	Major metalled roads having an AADT (average annual daily traffic) greater than 100 vehicles and are generally two lanes wide
Metal 2	Minor metalled roads serving small settlements, usually less than 100 AADT and often having a single lane with passing 'opportunities'
Metal 3	Slightly lesser standard than Metal 2 roads, generally serving only one property but passable by a two wheel drive vehicle
Metal 4	Alternative access roads and stock routes; suitable for four wheel drive vehicles only
Metal 5	Grass tracks; four wheel drive vehicles only and not always passable all year round
Metal 6	Paper road only – not formed

In this way, the hierarchical network provides the context for the efficient and safe movement of people and goods, while reducing the conflicts which arise between traffic requirements and the environment of surrounding areas. The hierarchy of roads within the harbour basin is shown on Map 11. The classification also affects how these roads are maintained and managed; for example Seal 1 roads have a shorter maintenance response period than Seal 2 roads whereas no maintenance is undertaken on Metal 6 roads unless they form part of a walkway route. The District Plan has a similar hierarchy of roads and sets out minimum road reserve widths, carriageway widths and whether or not footpaths are required (these are required on urban roads only, and only on one side unless the road is a collector road carrying over 750 vehicle movements each day).

Childrens Bay Road: a metalled road (Metal 2) with access to SH 75

The primary function of arterial roads is to provide for the movement of people and goods between destinations. In some circumstances, particularly in small rural settlements, arterial roads also provide an access function for activities and may act as a 'main street'. This has been brought about by the historic patterns of development alongside main access routes, which have subsequently become arterial roads as traffic has increased. In other locations, local roads serve as the main access function and also provide areas of open space.

***Map 11**: Road hierarchy of the Akaroa Harbour Basin*



Land uses

It is critical to integrate the transport network with adjacent land use activities, as identified in the objectives of the CRLTS and PBPDP. Siting land uses activities alongside compatible and appropriately classified roads results in fewer accidents and greater efficiency. Conversely, sensitive land use activities adjoining major roads may suffer from the effects of noise, vibration or pollution generated by activity on the road. Strip development along major roading links is generally not considered to be desirable; it is preferable to cluster activities sharing a minimum number of accesses. Land use activities need to be located such that they support the transport network in a catchment type pattern, particularly for local roads. Where settlements are severed by existing or future roads (for example, Takamatua), then provision will need to be made for connections across the road corridor. Roading linkages identified for development in the future will require appropriate mechanisms to allow for their provision at a later date, such as financial contributions. This will be an important consideration for any potential long-term settlement consolidation areas that may be identified through this study.

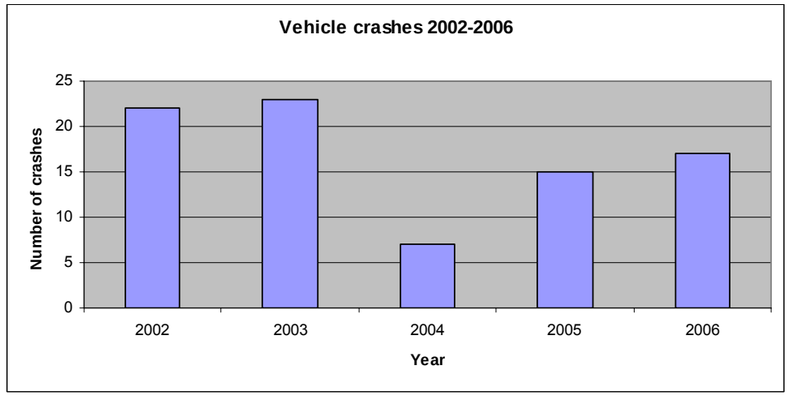
Road usage

The BPDC Roading Policy identifies a number of different uses of the road network, including tourism activities, social activities, recreation, civil defence, pedestrian movements, cycling, stock droving and providing access. Concern is also expressed in the policy regarding the increases in forestry traffic and potential problems this may cause on district roads. Given that over half of all Banks Peninsula roads are unsealed, any significant change in use could be problematic or require costly upgrades. Development in Wainui, for example, could be hindered by the quality the current road network; Wainui Main Road is narrow, winding and susceptible to being closed during major storm events. There is no indication that road capacity is currently an issue, although capacity for Akaroa is discussed in more detail later in this section.

Road safety

Road safety information for the entire harbour basin has been obtained from Land Transport New Zealand (**LTNZ**) for the period 2002-2006 (inclusive). A total of 84 crashes were reported, of which one was a fatality, seven were serious, 14 were minor and 62 caused no injury.

Figure 4: *Number of vehicle crashes in the Akaroa Harbour Basin 2002-2006 (LTNZ)*



Accidents in the harbour basin are more likely to occur on urban roads and on bends, than in other comparable rural areas (Group E[4]); refer Table 20 and Table 21 below. Of particular note is the relatively high number of crashes occurring during the months of December and January, as shown in Figure 5. This is most likely related to a higher number of visitors in the area during the summer months, particularly given the high parking demand in Akaroa during the Christmas/New Year holiday period.

Table 20: *Motor vehicle accidents in the Akaroa Harbour Basin - crash types (2002-2006)*

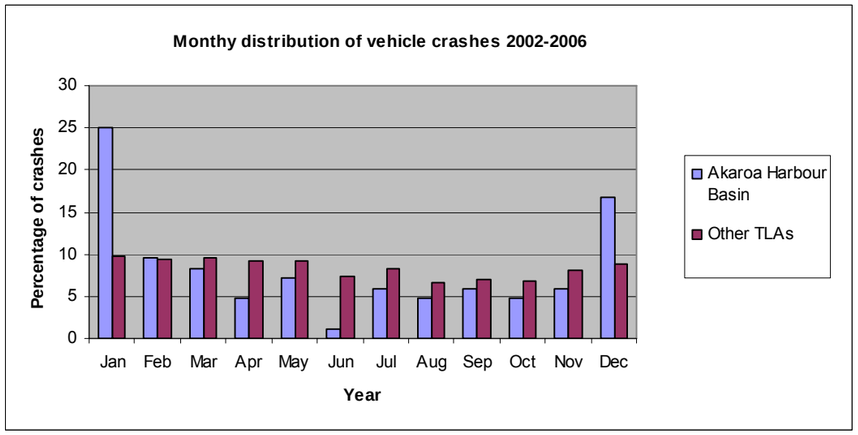
	Akaroa Harbour Basin	Comparable rural areas (Group E)
Straight road lost control/head on	6%	22%
Bend – lost control/head on	60%	49%
Rear end/obstruction	26%	14%
Other	8%	15%

Table 21: *Motor vehicle accidents in the Akaroa Harbour Basin - location (2002-2006)*

	Akaroa Harbour Basin	Comparable rural areas (Group E)
Urban road	38%	14%
Rural road	62%	86%

[4] 'Group E' refers to comparable rural areas, as characterised by the type of Territorial Local Authority (TLA). The former Banks Peninsula District Council was previously in TLA Group E and can therefore be compared to other Group E TLAs. .

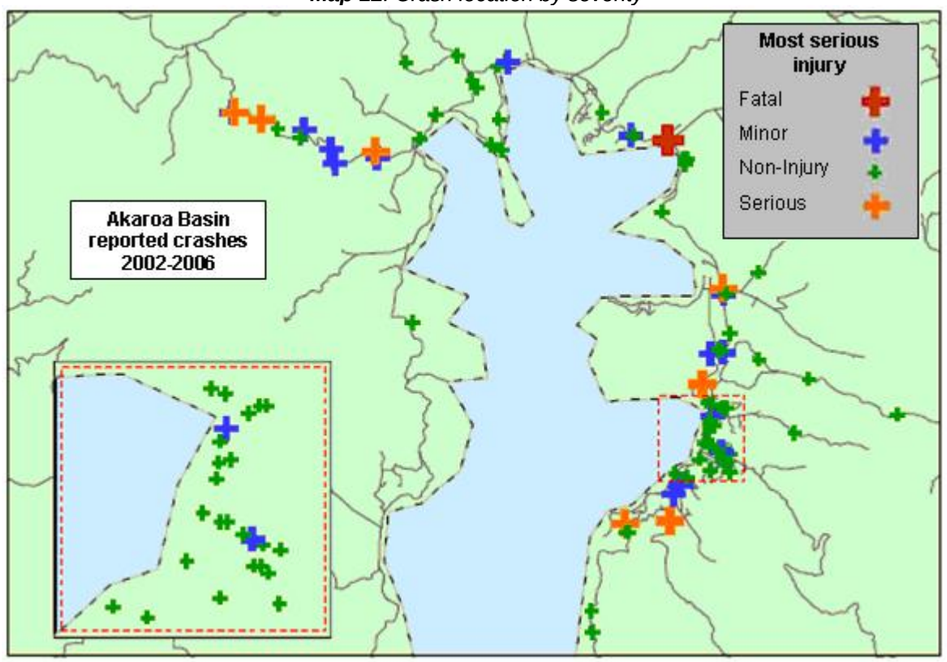
Figure 5: *Number of vehicle crashes in the Akaroa Harbour Basin by month 2002-2006 (LTNZ)*



Location of accidents in harbour basin

A review of accident data supplied by LTNZ provides an indication of where problems are occurring on the roads within the harbour basin (refer Map 12). Locations which show a higher accident rate can be further investigated to determine the reasons for the accident and whether they could be remedied through engineering measures. This would need to be undertaken in conjunction with Transit New Zealand, who have primary responsibility for managing road safety and signage on the State Highway network.

Map 12*: Crash location by severity*



Key observations in relation to the accident location map are that:

- Access to Takamatua is problematic. This will be an important factor when considering any further long-term development potential of this settlement, given the location of the access road at the base of a steep hill, and the way in which the SH75 severs the settlement.
- Duvauchelle west, near the hotel, appears to be an accident hotspot; as does the road between Ngaio Point and the inner harbour portion of Robinsons Bay.
- The west side of the basin south of SH75 is virtually accident-free, possibly due in part to smaller populations, even during peak tourist periods.

Parking and loading

Almost all land use activities generate vehicle trips, and good accessibility is assured when parking is available in close proximity to the destination. If provision is not made on-site for parking and loading areas, the only alternative is to park on the street. This can be detrimental to the efficiency and safety of roads, particularly if the roads are busy and/or narrow (as in Akaroa).

Due to the historic nature of many of the settlements, it can be difficult to provide off-street parking. Retail activities, which are high traffic generators, are required to provide 1 space per 30sqm gross floor area. Residential activities are usually required to provide two parking spaces per dwelling, although in the Takamatua CDA, each dwelling is required to have four parking spaces. Any long-term development potential in settlements will need to consider whether or not parking can be safely provided (particularly for activities that generate high traffic numbers such as retail and leisure activities), without compromising local character/amenity values.

More information on parking issues in Akaroa is provided below.

Other transportation modes

As noted at the beginning of this section, alternative forms of transport to the private motor vehicle include walking, cycling and public transport. It is desirable to provide for the different requirements of these alternatives and ensure their efficiency and safety in relation to the roading network.

Public transportation

Public transport has the potential to ease congestion, reduce accidents and also reduce pollution and energy usage. It also provides a relatively cheap form of transport for those who cannot or choose not to drive. Currently there are no public transport services operated by ECan in the study area. Two shuttle bus companies provide a daily return service from Christchurch to Akaroa. Bus facilities need to be sited so as to be readily accessible, but the function of the road network and the pleasantness of the surrounding environment should not be compromised by parked or manoeuvring buses. The road network may need to support public transport in the future and provide easy access to the main routes that buses would most likely use. In order to achieve interchange between different modes of transport, the infrastructure for each mode would need to be integrated in order for this to occur, particularly between public transport and private motor vehicles (for example, any park and ride facilities near Akaroa Township).

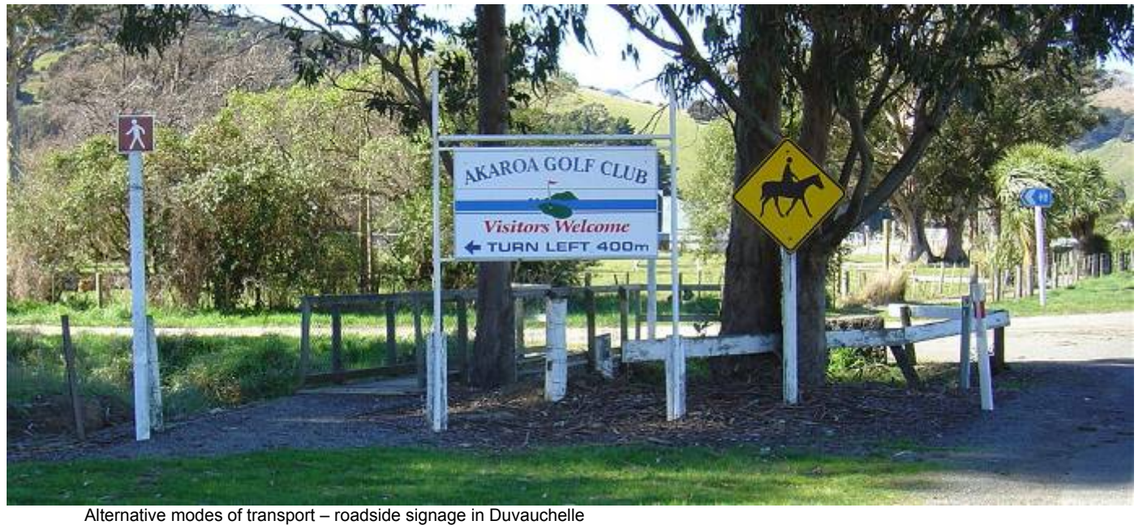
Pedestrians

Walking is a form of transport that does not pollute and does not use fossil fuel resources. People will be encouraged to walk, rather than using motorised transport, if they are provided with a safe, pleasant and convenient pedestrian environment. Roads that carry a high number of vehicles, particularly if travelling at high speeds, can be disconcerting for pedestrians; care is needed in designing for adequate safe crossing points, particularly in relation to the State Highway.

The BPDC Draft Walking and Cycling Strategy 2005 suggests that walking is a popular activity on the Peninsula. Most walking occurs within settlements, where residents can easily walk to local amenities, although leisure walking and tramping (sometimes using paper roads) is also popular. Off-road pedestrian facilities are provided in various areas, but are not well connected. Foot access along rural roads is difficult for the less mobile, due to a general lack of footpaths in these areas, although this does reinforce the 'rural settlement' nature of most of the settlements covered by this study. This will need to be balanced against safety considerations for any areas likely to experience population increases and/or where walking is a viable mode of transport between localities.

Creating pedestrian links in new subdivision and developments can be an important feature in reducing motor vehicle trips. These links need to be planned in conjunction with the road network and any new cycle routes, to ensure that the transport infrastructure is developed in an integrated way. Clear identification of potential links will be important for any settlements, which may have potential for long-term future development.

Note: Please refer to the Walkways section of the Natural Environment Chapter (Chapter 5) for further information on walkways in and around the settlement study areas.



Alternative modes of transport – roadside signage in Duvauchelle

Cycling

Cycling is a non polluting, energy efficient form of transport which makes little demand on road space. However the cyclist is more vulnerable to injury than motorists. Particular care is therefore required when designing cycling facilities or roading improvements to take account of cyclists' safety and to provide appropriate facilities to encourage this form of transport.

The area is not well serviced by dedicated cycle routes. Cyclists must rely on using the road shoulder and traffic lanes to cycle around the area. The hilly terrain could discourage cycle use on public roads and Census figures show a distinct low use of cycling as a means of travel to work. The BPDC Draft Walking and Cycling Strategy 2005 identifies that:

- very little cycling in Banks Peninsula is undertaken for commuting;
- within settlements, some children cycle to school;
- cycling for leisure and sport is popular; and
- mountain bikers are generally happy with the unsealed roads.

The roads around the harbour and the Summit Road are popular cycle training and touring routes. The annual 'Le Race' from Christchurch to Akaroa in March attracts some 2,000 cyclists to the area. Banks Peninsula is also a destination for long distance touring cyclists, with Akaroa being a notable destination. Cycle tourism in the harbour is likely to increase in the future, with the opening of the Little River Rail Trail bringing more cyclist into the general area. Safety on the main routes and on inter-settlement roads is a potential issue; safe cycle links will need to be considered in any areas/settlements of potential consolidation or expansion, and as part of long-term plans for destinations such as business areas and leisure attractions. Rural paper roads offer opportunities for off-road use by mountain bikers, however access and delineation is an issue.

Maritime transportation

The Council currently owns 11 wharves and jetties as well as seven slipways around the harbour basin area. Maintenance of these structures is undertaken by the Council, but revenue is also obtained from wharf users. These are subject to the Banks Peninsula District Council Marine Facilities Control Bylaw 2002, which governs the use of these facilities. There is no information on cross-harbour movements for transportation and no public transportation services are offered at present.

Transport and tourism

Tourist transport in the study areas represents a significant element of transport activities. Tourists use all of the modes described above, as well as rental vehicles and charters.

A survey of 150 campervan users across Banks Peninsula was undertaken in March and April 2007; most of those surveyed (77%) were in Akaroa, with 7% in Duvauchelle and the remainder elsewhere on the Peninsula. Of those surveyed:

- 85% were international visitors;
- 28% freedom camped (ie camped overnight in a location where no facilities were provided); and
- campervan facilities on the Peninsula were rate highly for quality and safety (with the exception of rest stops, which recorded some poor and very poor scores).

Some of the general comments related to travel by campervan that were raised by those surveyed include:

- A number of people found the camping grounds at Akaroa and in Christchurch to be overcrowded with a pressure on facilities. There were a number of requests for more DoC camping grounds.
- Freedom camping in Akaroa – some would have preferred to freedom camp within the Akaroa Township, however this is currently prohibited.
- Difficulties with direction finding and poor quality maps – several respondents commented on the poor quality maps that were available (presumably these were from campervan hire companies).

Transportation funding

The former BPDC Annual Plan (to 30 June 2006) sets out the budget for maintenance expenditure for roading related matters in relation to the district roading network. Projects in this budget include (but are not limited to) the following ongoing works:

- seal widening and extension;
- reseals;
- pavement deterioration, management and rehabilitation;
- bridge replacement;
- kerb and channel replacement;
- culvert replacement; and
- street light replacement.

These items have been carried forward into Christchurch City Council budgets. Any maintenance or improvements to SH 75 are the primary responsibility of Transit New Zealand.

<u>Development and financial contributions</u>

Currently, Development Contributions (DCs) are not being collected to help fund transportation projects in the Akaroa Harbour Basin (according to the current Development Contributions Policy; please refer to Chapter 10 for more information on this Policy). A review of the Development Contributions Policy (DCP) will be undertaken in 2009; at this time there will be an opportunity to review the Council's position on taking DCs for transportation network purposes. If DCs are to be taken in the future, they can only be used to fund identified transportation projects where there is a direct link between new development and an increased demand for new or improved transportation infrastructure. Any new projects need to be fully scoped, costed and included in the next LTCCP.

Financial contributions can also be required under the RMA to take into account the wider impacts of a specific development, including impacts on transportation infrastructure. Financial contributions, as provided for in the District Plan, can be required for new road(s) and upgrading the existing road(s) outside the site being developed where expected traffic from the development will exceed 50% of existing vehicle movements. At the moment, financial contributions in the District Plan are not operative or enforced and will be the subject of a proposed variation to align them with the Council's approach to development and financial contributions.

Transportation and sustainability

A reliance on motor vehicles for social and economic well-being can put communities at risk from unsustainable transportation. In the future, a reliance on fossil fuels may lead to increased transportation costs due to the reduced availability of these fuels. As a result of increasing transportation costs, the communities of the Akaroa Harbour Basin may be affected, both directly and indirectly through:

- a potential reduction in the total number of international tourists visiting New Zealand due to increased aviation fuel prices and carbon offset costs;
- a reduction or levelling out of the total number of tourists visiting the harbour basin generally, although local visitor numbers may still increase as people seek a closer destination to visit;
- economic impacts on primary industries (eg agriculture, fisheries and forestry) as machinery becomes more expensive to run; and
- an increase in the price of commodities due to the increased costs of production and transportation, both for domestic and imported goods.

Reducing our reliance on the use of fossil fuels for transportation will help to lessen the impacts of potential fuel shortages and/or price rises in the future. Settlement patterns which promote alternative or less energy-intensive forms of transport (eg public transport) are desirable. Likewise, settlement patterns which reduce the need for travel will also contribute to a more sustainable transport system.

Note: A further discussion of peak oil and its effects on future settlement form and growth is set out in Chapter 9 (Managing Urban Change).

Akaroa transportation issues

<u>Parking</u>

A study was commissioned by the former BPDC to examine transportation issues for Akaroa. The study was completed by Opus International Limited and is titled *"Banks Peninsula District Council Urban Transportation and Parking Study – Akaroa".* The main issues identified by this study include:

- Congestion during peak visitor periods, which is usually caused by drivers searching for carparks.
- Problems for campervans, boat trailers and tourist buses finding appropriate parking locations.
- As visitor numbers increase, so does the traffic and the pressure on existing parking - it is predicted that by 2025 Akaroa will no longer be able to cater for its peak parking demand.
- A tension between vehicle parking and heritage areas (where there are narrow streets and the feeling of an intimate landscape).
- Pedestrian friendliness – pedestrian facilities and the connectivity of walking routes requires some improvement. Traffic congestion and busy footpaths create safety issues.
- Access for local residents and emergency vehicles during busy periods may be compromised.

It was also noted that parking and transportation issues are only a problem in Akaroa for a short period of the year. Area specific issues are summarised schematically on Map 13 on the next page. Parking supply for Akaroa is set out below:

***Table 22**: Number of parks in central Akaroa*

Zone		Regular Use	Special Events	TOTAL
1	Main entrance	243	74	**317**
2	North township	175	65	**240**
3	Opposite beach	51	0	**51**
4	South township	177	91	**268**
5	To lighthouse	0	65	**65**
TOTAL		**646**	**295**	**941**

A series of recommendations were made by Opus, however these have generally not been implemented due to the Council amalgamation. This Settlements Study presents an opportunity to revisit these recommendations in terms of providing a strategic planning framework for the harbour basin and identifying important future workstreams for consideration in the LTCCP.

Map 13: *Area specific parking and transportation issues in Akaroa*

Further parking surveys in Akaroa were carried out over the summers of 2005/06 and 2006/07 to assess the peak demand. The conclusions from the analysis of parking surveys over two years in Akaroa include:

- An exceptional peak (parking) day can occur at any point during the Christmas holidays up to the end of the first week in January, depending on the weather.
- The total parking capacity in both the main streets and residential areas within a 200 metre radius of the town centre is almost reached on these exceptional peak days.
- That outside of the Christmas period demand is below the 600 carpark level, which means that while the carparks in the main streets of the south part of the township and opposite the beach can run at or close to full, the residential areas are not generally getting more than 30% full.
- That the parameters used in the Opus study models predicting when Akaroa could run out of parking are still valid, but there has been no detectable growth between the 2005/06 and 2006/07 summer periods.
- That there are no major parking issues with other types of vehicles such as motorcycles, trucks or buses, however it is noted that bus parking is limited in the southern township and the bus park could be better sign-posted to prevent being used by other types of vehicles.
- Some further parking signage may be needed to indicate areas unsuitable for large campervans.

<u>Walking</u>

Most walking activity within the settlements occurs in Akaroa and the form of this settlement can pose problems for some pedestrians. Firstly, Akaroa is long and thin in form and is not an easy distance to walk, particularly for the disabled. Secondly, there is only one main road (Rue Lavaud, which separates into Beach Road and Rue Jollie towards the Township's southern end). This means there is no scope for formal traffic restrictions such as permanent road closures to protect pedestrian activities.

Footpaths are narrow and in many in places are too narrow for people who require disability aids, such as mobility scooters or wheelchairs. At present, Rue Lavaud is bounded by steep drainage channels which are potentially hazardous to walkers. Advertising and stalls on or adjacent to footpaths may at times hinder pedestrian movements, an issue which the Banks Peninsula District Council Public Places and Signs Bylaw 2004 seeks to address. During festivals, holiday periods and summer weekends, problems associated with pedestrians and cars sharing the same confined space can become intense.

Information requirements for transport and roading infrastructure

- Identification and assessment of future cycle and pedestrian facilities.
- Council's intentions regarding future development/financial contributions policies for covering the cost of upgrading the transport network as a result of development.
- Review of Banks Peninsula District Council Urban Transportation and Parking Study – applicability of recommendations for Akaroa

Issues associated with transport and roading infrastructure:

Urban planning factor	*Issues*	*Flow-on effects*
Integration of transportation and land use planning	Land use activities need to be compatible with the function and performance of the adjacent road network. Intensive new developments may be inappropriate if located close to strategic routes (eg SH 75) or where significant road upgrades are required (eg long gravel feeder roads).	• Costly to upgrade road networks to a standard required for any new development. • Adverse effects on the function and performance of strategic roads. • Environmental effects associated with increased traffic on existing routes.
Road safety	The number and pattern of road accidents is spread unevenly throughout the year and around the harbour basin, and is likely linked to: • SH75 severing some settlements (particularly Takamatua), which creates difficulties in supporting a more consolidated community; and • an influx of visitors in summer months, which results in pressure on infrastructure and emergency services.	• Dislocated communities. • Difficulty in supporting community well-being in relation to health and safety where accident rates are higher. • Potential for slower emergency response times.

Urban planning factor	*Issues*	*Flow-on effects*
Reliance on the motor vehicle	An increasing reliance on the motor vehicle, together with a dependence on fossil fuels for transportation (associated with the tourist industry, primary production industries and freighting of goods transport) is unlikely to be sustainable in the longer term, particularly given the existing poor pedestrian and cycling linkages between settlements and limited public transport options.	Reduced quality of life in the future resulting from a decline in economic and social well-being due to • goods and services becoming more expensive; • a potential reduction or levelling in tourism activity; • higher production costs associated with energy-intensive industries (eg primary production); and • a decreased ability to access education, employment, services and recreational opportunities.
Parking	The historic character and narrow streets of Akaroa create difficulties in providing both on and off-street parking in the town centre during peak periods; this creates risks to pedestrian safety and adversely impacts on the visual amenity or 'ambiance' of the town centre.	• Reduction of 'walkability' in the town centre deters visitors, pedestrian and cycling activities. • Difficulties for campervans and boat trailers to manoeuvre and park. • Cost of providing additional parking when predicted parking capacity is reached (2025).
Pedestrian facilities and linkages	Footpaths in the settlements are: • often absent, reinforcing the rural nature of the areas but restricting access for the less mobile; • in places, bordered by steep drainage channels which pose a hazard to less mobile pedestrians; and • narrow, which creates safety issues at peak times when road and footpath congestion increases, particularly for those using wheelchairs or pushing strollers and when pavement space is further limited by advertising signage.	• Reliance on the motor vehicle, with associated environmental effects • Safety issues
	There are few pedestrian linkages and walkways between settlements other than the State Highway, which limits walking as a viable mode of travel for residents and visitors (eg tourists).	• Reliance on the motor vehicle, with associated environmental effects • Limited potential for health gains • Fewer tourist activities may result in lost economic opportunities
Commuter cycling	The harbour basin is not well serviced by dedicated cycle routes, resulting in limited commuter cycling and safety issues for cyclists at more congested times of the year.	• reliance on motor vehicle, with environmental effects and limiting potential for health gains • safety issues
Leisure cycling	Long distance cycle touring and mountain biking are both popular activities, although these are constrained by safety concerns on main routes and inter-settlement roads.	• Fewer tourist activities may result in lost economic opportunities
Public transport	A lack of public transport facilities (including bus and ferry) for travel between settlements limits modal options for commuters. This is further exacerbated by limited bus parking in Akaroa south, which restricts access to public transport by potential users.	• Settlements less accessible to those without access to a motor vehicle • Increased use of private motor vehicles

Wastewater

Cost effective and sustainable effluent disposal is fundamental in providing for residential development. A key infrastructural requirement for smaller allotments within residential areas is the provision of a reticulated sewer scheme and wastewater treatment facilities. Within Small Settlement Zones, new development is required to provide larger lot sizes which are able to accommodate on-site septic tank systems. Despite this, existing settlement density in the Small Settlement Zones can be closer to the allotment sizes that might be expected in Residential Zones and this can, theoretically, create issues in managing wastewater treatment and disposal. In providing a strategic framework to manage any future growth in the basin, the identification of wastewater management issues is critically important.

When managing wastewater infrastructure, it is important to note that Maori are deeply offended by the discharge of human wastes to natural waters and it is considered that pollution degrades water's *mauri* (life force). For the mauri to be restored and harmful elements removed from water, it must pass through the earth for cleansing before going into the sea. These concerns are now shared by many others in the community, which presents challenges for wastewater engineers. Environment Canterbury notes wastewater outfall mixing zones as a constraint to other activity in the harbour. Visioning documents produced by the former BPDC note community concerns about sewage discharge as an issue. Some settlements now dispose (or propose to dispose) wastewater to vegetated land.

Each settlement's existing (and in some cases proposed) wastewater schemes are explained below, including identification of potential additional capacity where this information is known and readily available.

Existing situation

***Table 23**: Wastewater systems in the study areas*

Settlement	Existing reticulated treatment and disposal?	Catchment area	Disposal	Spare capacity (see below)	Discharge consent expires	Wastewater Constraints / Issues? (see below)	Replacement system / treatment planned (see below)
Wainui	Yes	YMCA camp;	Septic tank outfall to land	No	Private scheme	Yes	Yes: Residential & Small settlement Zones + YMCA
		part Residential Zone only	To harbour	No	2009		
Tikao Bay	Yes	36 connections, possibly services Small Settlement Zone only	To land across Wainui Main Road	No	Nov 2010	Yes	No
French Farm	No						
Barrys Bay	No						
Duvauchelle	Yes	180 connected properties, possibly services all Residential Zones	To harbour	Yes	2010	Yes	No
Robinsons Bay	Yes	Ngaio Grove only	Part of Duvauchelle system; outfall to harbour. See above				
Takamatua	No						
Akaroa	Yes	Residential Zone, Akaroa Hill Slopes Zone	To harbour	No	June 2007. 5 year extension applied for.	Yes	Plan to look at disposal options and location of treatment plant.

Wainui

Existing spare capacity

The existing Council owned plant is not yet fully utilised. However, the remaining capacity is allocated to the lots in Seaview Lane not yet built upon.

Existing constraints/issues

Current systems involve discharge of treated effluent to Akaroa Harbour, which has strong opposition from iwi, harbour users, and the local and wider community of the basin. The harbour can therefore become unsuitable for swimming, shellfish gathering and other recreational activities. Discharges may also impact upon the natural ecosystems of the harbour.

Replacement system/treatment planned

- The Council is currently proposing to replace existing systems with a new reticulated system, chosen for its suitability for small communities with seasonal population peaks (currently used in Bay of Islands, Whangaparoa, Lake Taupo and Waihi Beach).
- The proposed scheme boundary includes areas zoned Small Settlement and Residential, the YMCA camp, and other existing dwellings that can easily be connected. Connections will also be laid to the boundary of existing lots not yet built on where appropriate.
- The proposed site for the treatment plant is to the west of the Warnerville Road Small Settlement Zone and it is proposed to dispose of the treated effluent to land on a site immediately west of the treatment plant;
- Application for land use consent and discharge permits is currently being prepared.
- The scheme is likely to be staged to allow costs of works to be spread over several financial years, with the existing Residential Zone likely to be the first area to be connected.
- The system has been designed to cater for a 40 year projection of wastewater flows and loads, and there is potential for additional connections over time. There is therefore capacity to further increase the number of dwellings in Wainui by 40%.
- The District Plan requires a 300 metre buffer between Residential and Small Settlement Zones, and any package wastewater treatment plants (**WWTP**s). This will provide a constraint to any future residential development in the near vicinity of the WWTP and irrigation area.

Tikao Bay

Spare capacity

None. The existing plant struggles to meet consent conditions. Additional loading would exacerbate the situation.

Existing constraints/issues

The disposal field is working satisfactorily. The constraint arises from the capacity of the treatment plant.

Replacement system/treatment planned

None.

Duvauchelle

Spare capacity

The plant has a design capacity of 900 person equivalents. Current population served varies widely between 250 and 600, so at peak occupancy approximately 50% more dwellings could be accommodated in theory, or about 90 properties. This estimate should be treated with caution, as while the current plant operates satisfactorily, the variable flow caused by fluctuating population does cause some difficulties, which could mean a much lower actual treatment peak flow could be achieved.

Existing constraints/issues

Current systems involve discharge of treated effluent to Akaroa Harbour, which has strong opposition from iwi, harbour users, and the local and wider community of the basin. The harbour can therefore become unsuitable for swimming, shellfish gathering and other recreational activities. Discharges may also impact upon the natural ecosystems of the harbour.

Replacement system/treatment planned

None.

Akaroa

Spare capacity

Very little. The existing plant generally meets consent conditions now that some upgrade work has been carried out. However, the plant is old and nearing the end of its design life. The District Plan notes that the boundaries of the residential areas of Akaroa are, in part, defined by the extent of the reticulated systems servicing those areas.

Existing constraints/issues

Current systems involve discharge of treated effluent to Akaroa Harbour, which has strong opposition from iwi, harbour users, and the local and wider community of the basin. The harbour can therefore become unsuitable for swimming, shellfish gathering and other recreational activities. Discharges may also impact upon the natural ecosystems of the harbour. In addition, the site of the plant (Takapuneke) is culturally sensitive and there are some who would like to see the plant moved. Stormwater infiltration is a particular issue and has been known to increase usual flows by up to 23 times. This can overload the treatment plant, but also can affect capacity of the pipes themselves, resulting in sewage-contaminated water in streams and running down roads during rain events when the system is full.

Replacement system/treatment planned

The Council is working on an integrated '3 waters strategy' for Akaroa which will examine water supply, wastewater and stormwater systems and the potential for linking together the solutions to the problems which exist with the respective infrastructures. The wastewater solutions will be problematic as finding both suitable alternative land for a treatment plant, and land that is flat enough for wastewater disposal without pumping a considerable distance will be difficult. Finding an alternative to discharge of wastewater into Akaroa Harbour obtained the highest rating in a Community Survey in 2005.

Note: Please refer to the Relevant Legislation and Guiding Documents Chapter (Chapter 10) for information on the Development Contributions Policy and its relevance for wastewater infrastructure.

Duvauchelle WWTP, located in an old quarry beside State Highway 75, between Pawsons Valley Road and Pipers Valley Road (Photo source: BPDC Activity Management Plan)

Issues associated with wastewater infrastructure

Urban planning factor	*Issues*	*Flow-on effects*
Wastewater planning	There is potential for ecosystem degradation and/or cultural offence from disposal via: • septic tank from existing clusters of allotments within Small Settlement Zone sites • treatment systems which outfall directly to the harbour.	Costs to upgrade.
	There is potential for spare capacity within existing or new reticulated wastewater schemes to give rise to development pressures which may not be appropriate to the locality.	• Increases in resource consent and plan change applications. • Transport, landscape and settlement character, urban form and other related implications.
	System efficiency is currently compromised where stormwater infiltration occurs, resulting in high costs associated with identifying and rectifying this problem.	Costs to upgrade.
	Older reticulated systems have more difficulty managing variable flows caused by fluctuating populations, so any population increases for such settlements may require infrastructure upgrades.	Costs to upgrade.
	The Waste Water Treatment Plant for Akaroa is at Takapuneke which has significant cultural and historical importance. It is considered by many people to be inappropriately sited and there is some pressure for an alternative location to be identified.	• Difficulty in finding an alternative site which is flat enough and will enable efficient pumping systems to be established. • Costs to upgrade. • Ongoing community issue if WWTP remains on current site.
	Ad hoc urban development may limit the efficiency of reticulated wastewater services.	Increased costs for developers and the Council in establishing and maintaining the systems.

Information requirements for wastewater infrastructure

- Mapped information confirming existing connections relative to zoning.
- Whether sewer lines are overloaded during severe storm conditions; if so, how often does this occur, where are the impacts received and how long do impacts last?
- For any identified potential future growth areas, technical papers addressing wastewater implications.

Akaroa Waste Water Treatment Plant: Greens Point

Water Supply

Water is used for a variety of purposes, including drinking, washing, watering gardens, filling swimming pools, by businesses, to wash boats and cars, for public toilets and for fire-fighting. The National Environmental Standard (**NES**) for Human Drinking Water Sources for New Zealand is the national standard for the quality of drinking water. This Standard is currently not mandatory but is likely to become mandatory in the future; a bill proposing more stringent standards has been debated recently in Parliament.

There are limited fresh water resources on the Peninsula. The District Plan notes that groundwater aquifers do exist but their potential is little known. Much of the water supply for the harbour basin settlements is from rain-fed streams, although some settlements do also rely upon groundwater where limited supplies are available within the valleys. In contrast with Christchurch City's subsurface aquifers, the supply for the harbour basin settlements is generally variable and times of low supply often correspond with times of peak demand during the summer tourist season. The capital cost of water supply infrastructure is largely determined by peak flow requirements.

With the uncertainty of global warming and climate change, the communities will be even more dependent upon rainwater of a sufficient quality and quantity. Scientists predict that there may be fewer, more concentrated storm events in the future, which may require a response in terms of the adequacy of storage. Rain tanks that hold back rainwater and provide supplementary water supply may become more important. There are currently issues associated with the long-term adequacy, reliability and security of some supplies. The current state of the infrastructure is sub-standard in some cases, with water loss from leaking pipes leading to inefficiencies in supply. Water quality is also an issue and treatment methods will need upgrading if the water is to meet proposed drinking water standards. Without additional water, reliability of supply is likely to be a limiting factor for growth in some settlements of the harbour basin, and options that may need to be considered would include increasing storage volumes and transporting water from further away.

The Council's proposed Water Supply Strategy is currently being developed and aims to establish a strategic direction for the Council's management of water supplies for the next 30 years. Visioning documents produced by the former BPDC note access to a high quality water supply as an issue.

Water restrictions – water supply is a major issue for Akaroa

Existing situation

The water supply situation for each settlement is described below. It is notable that existing areas serviced by a reticulated supply include areas of rural zoning, while some land zoned Residential or Small Settlement is currently unserviced.

Wainui

Supply

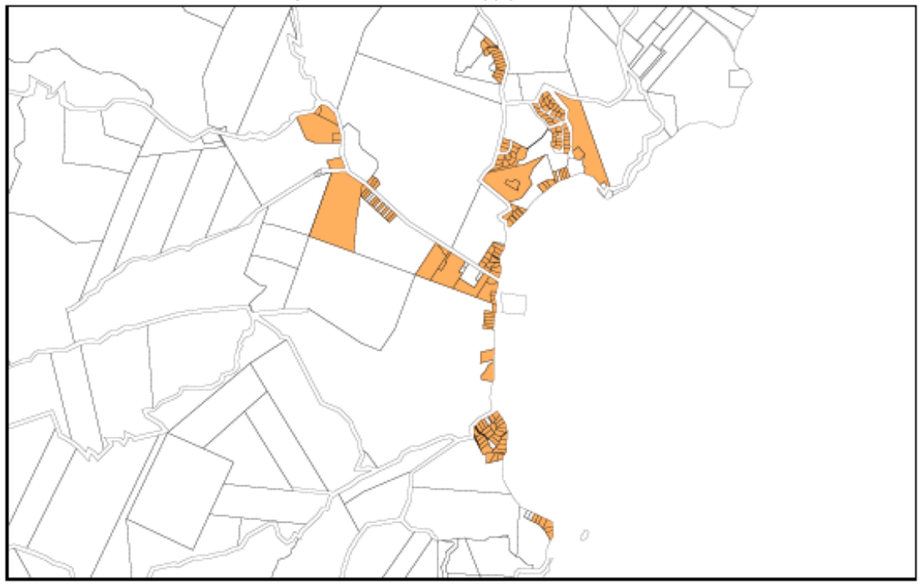
***Table 24**: Wainui water supply*

Sources	Water is supplied from a groundwater bore (on Wainui Valley Rd), which has a consented take of 3.5l/s. There have been no problems with aquifer yields to date.
Network	The water scheme was constructed in 1998 and supplies largely gravity driven water to 165 properties. A booster pump (currently seized) located in Cemetery Rd, is designed to pump water to a second small storage tank at times of high demand.
Quality	If the water extracted from the bore is poor then chlorination is available. The water quality is usually fully compliant with drinking water standards.
Storage	Total storage in the network is 110m^3. All properties have on-site storage.
Fire-fighting capability	Limited fire-fighting capability from three fire hydrants.
Restrictions	All households have a restricted water supply[5] that allows a water take of 1m^3 per day.

Demand

- Based on the maximum resource consent water take of 302m^3 per day the system capacity is 302 connections
- Design population: The system was designed for a population of 875, and is anticipated to meet the 2020 population estimate of 500 fulltime residents.
- The aquifer will require monitoring as demand increases.

***Map 14**: Wainui water supply area of benefit*



Tikao Bay (private scheme – limited information available)

Supply

***Table 25:** Tikao Bay water supply*

Sources	Most of the time a spring is used to fill three tanks. At times of high demand the spring source is supplemented by stream water.
Network	Small reticulated network of unknown materials.
Quality	Thought to be of good quality but no evidence to support that.
Storage	Three 25m^3 tanks.
Fire-fighting capability	Assumed none.
Restrictions	Unknown.

[5] A 'restricted flow supply' is one where a small, continuous flow is supplied through a flow control device. Storage is provided by residents to cater for their fluctuations in demand.

Demand

The system supplies 36 properties and the public toilets.

French Farm (individual property supplies)

Supply

***Table 26:** French Farm water supply*

Sources	Springs, wells and rainwater.
Network	None.
Quality	Unknown.
Storage	Unknown.
Fire-fighting capability	Assumed none.
Restrictions	Unknown.

Demand

Unknown.

Barrys Bay (individual property supplies)

Supply

***Table 27:** Barrys Bay water supply*

Sources	Springs, wells and rainwater.
Network	None.
Quality	Unknown.
Storage	Unknown.
Fire-fighting capability	Assumed none.
Restrictions	Unknown.

Demand

Unknown

Duvauchelle and Robinsons Bay

Supply

***Table 28**: Duvauchelle/Robinsons Bay water supply*

Sources	Pipers Stream, which has current resource consents for an intake structure and water take. There is no formal agreement with the landowner on which the water intake is located, which may present a risk for the long-term viability of the water supply.
Network	The scheme was constructed in 1989 and most of the assets are in reasonable condition. Water is gravity fed to Robinsons Bay and Pawsons Valley, but is pumped to the Ngaio Grove subdivision. The former BPDC planned to extend the scheme in the future to Barrys Bay, although no funding was budgeted to permit this to happen.
Quality	Water quality does not comply with aspects of the drinking water standards during rain events. Pipers Stream is not a secure source and water is treated to improve water quality. A turbidity meter at Pipers Stream has been installed that allows the intake to be turned off automatically when the stream is in a dirty condition, but the system is not completely effective.
Storage	A 450m^3 reservoir was built at the treatment site at 29 Okains Bay Rd in 1990 and there is approximately 500m^3 storage in the network. Not all properties have on-site storage.
Fire-fighting capability	11 fire hydrants provide limited fire-fighting capability.
Restrictions	Restricted supply, although not all properties have consistently sized restrictors. Some residents have historical agreements that allow them to draw down up to 10m^3 daily, while most newer connections are only allowed 1m^3 per day.

Demand

- Designed to meet a population of 860 and the present population served is between 230 – 600 permanent residents, so the present system is likely to meet the 2020 demand. Therefore, if the population increases by 50% the scheme is still expected to operate within capacity unless water use changes dramatically or there is a severe drought.

Remainder of Robinsons Bay (individual property supplies)

Supply

Table 29: *Robinsons Bay water supply*

Sources	Springs, wells and rainwater likely.
Network	None.
Quality	Unknown.
Storage	Unknown.
Fire-fighting capability	Assumed none.
Restrictions	Unknown.

Demand

Unknown

Map 15*: Duvauchelle water supply - area of benefit (includes most of Robinsons Bay)*

Takamatua

Supply

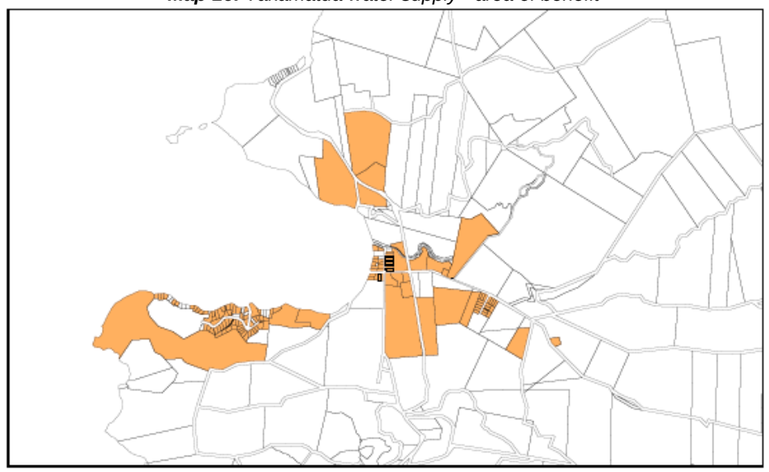
Table 30*: Takamatua water supply*

Sources	Takamatua Stream (current resource consents for intake structure and water take).
Network	The water supply scheme was built in the 1990s and supplies unrestricted water to 117 properties. Water is supplied by gravity to farms and residential properties. There is no formal agreement with the landowner on which the water intake is located, which may present a risk for the long-term viability of the water supply.
Quality	The stream is not a secure source and water is treated to improve its quality. The headworks include a treatment plant. The water quality does not comply with certain aspects of the drinking water standards during rain events. There is little storage in the network so an automatic turnoff when the stream is in dirty condition would result in supply restrictions.
Storage	There are three 22m^3 and one 11m^3 storage reservoirs in the network. Not all properties have on-site storage. Ideally, storage would be 500 – 1000m^3
Fire-fighting capability	The scheme provides limited fire-fighting capability, particularly at the extremities of the scheme. There is poor water pressure at Kingfisher Drive, although the reticulation in this area will be upgraded through the subdivision process of the CDA at the end of Kingfisher Drive.
Restrictions	There are no physical or voluntary restrictions at present.

Demand

- Existing system will probably meet 2020 demand estimate of 250 residents (there are currently 70 – 200 permanent residents served by the system) and was designed to supply a population of 1500 people. However, the capacity may be exceeded by 2020 on peak days when there are large numbers of day visitors.
- If growth increases beyond expectation or unrestricted water use increases, a new water source will be required prior to 2020 and capacity may therefore become an issue within the next 10 – 15 years.
- The system would be more appropriately managed as a restricted supply, which would provide more reliability, and greater flexibility for future growth should it occur. Retro fitting of restrictors would need the understanding and acceptance of the community.

Map 16: *Takamatua water supply - area of benefit*



Akaroa

Supply

Table 31: *Akaroa water supply*

Sources	• Grehan Stream (35 year consent granted 2005). • Balguerie Valley Stream (35 year consent granted 2005). • Aylmers Valley Stream (35 year consent granted 2005). • Settlers Hill Groundwater Bore (35 year consent granted 2005). • Aylmers Valley Bore (consent application lodged 2007).
Network	The oldest components of the scheme date back to 1900. Many assets require upgrade. The L'Aube Hill treatment plant and reservoir is the main supply. The Aylmers Valley treatment and reservoir is only used when L'Aube Hill is unable to meet demand. Both water supplies are from rain-fed surface water streams with variable flows. Some sections of the reticulation experience low pressure. Poor water pressure near L'Aube Hill limits opportunities to build in higher areas. Properties in the higher levels of the town utilise a combination of private booster pumps, small Council pump stations or receive a reduced service due to low pressures during periods of high demand. Pipe leakages have also been found to affect supply. Universal water metering was installed to all properties in 2003; these are read annually for usage monitoring purposes.
Quality	The water quality at both treatment plants is an issue, as it does not comply with certain sections of the drinking water standards, particularly during and after rainfall events. The source is not secure and is subject to contamination. Treatment with chlorine has been known to result in taste and odour issues.
Storage	L'Aube Hill (2,300m^3), Aylmers Valley (505m^3) and two other reservoirs (45m^3 and 22m^3) which service high level zones. An 8m difference in elevations between the two larger reservoirs causes operational difficulties.
Fire-fighting capability	115 fire hydrants. Some areas do not provide full fire-fighting capability because the pipe capacity is inadequate.
Restrictions	Historically, lots within the ill-defined "urban supply area" have had access to an unrestricted supply. However, some properties on the fringe of the township only have a restricted supply. Given the shortage of water at peak demand periods, levels of service for future subdivision (for example the Akaroa Hill Slopes Zone) will need to be clarified through the Water Strategy and LTCCP processes.

Demand

- There is inadequate flow from existing intakes and inadequate treatment capacity to meet the water demand throughout the year. Severe water restrictions are sometimes required during peak summer periods and L'Aube Hill treatment plant at times has had to operate at up to 150% of its design capacity.
- With increasing tourism, water shortages have become increasingly frequent and severe. A study earlier this decade of water and waste issues in Akaroa and the demand on these services by the tourism industry (including holiday homes) identified that tourist demand on Akaroa's water supply could be as high as 60% of the total daily peak water use. It has been found that boat washing is likely to place a relatively small, but significant, demand on water use in Akaroa and that garden and lawn watering places a more significant demand on the system. This is exacerbated by the unacceptably high reticulation leakage.
- The existing system is not anticipated to reliably meet projected future demands.
- A survey in 2004 showed that 48% of Akaroa residents are unhappy with their water supply.
- The Banks Peninsula Strategic Economic Development Plan includes as a strategic objective: 'Ensure that water supplies are safe, efficient, reliable and cost effective to supply main population centres' and a key action point includes upgrading reliability of water supply in Akaroa.
- A system review to outline issues and options for the future development of the water supply scheme is underway. This review will include assessing alternative water sources (eg groundwater, or a dam on a local stream) and examining opportunities to improve delivery. The ridges behind Akaroa currently receive a relatively high median annual rainfall (over 1500mm/yr) and a future challenge may be the ability to capture this water without affecting stream flows. Solutions suggested to Council to date include a dam and the installation of water tanks on houses.
- Additional investigations include the potential for a high level supply zone which would improve the level of service by providing a more even water pressure distribution throughout the township for domestic use and fire fighting purposes. Further engineering investigations are required for the high-level zone; in addition, the tensions between improving infrastructure and the potential for increased development pressure will need to be considered.
- Other investigations associated with the review of Akaroa's water supply issues include:
    - A privately funded groundwater investigation was commenced in 2005. The former BPDC had an agreement in place to purchase new well sources subject to meeting minimum water quality and quantity criteria. A consent application has been lodged for a well adjacent to the Aylmers Valley headworks plant, which appears capable of providing some peak demand relief, and drilling is currently underway at a second location.
    - Supplementary stream sources investigated at the north branch of the Takamatua stream, which will provide data over time to consider the feasibility of supplementing the Akaroa water supply with stream water sources in neighbouring catchments.

Map 17: *Akaroa water supply - area of benefit*

Water catchment areas

Water catchment areas are described in the Banks Peninsula Water Supply Bylaw 1998 and there are restrictions governing the type of activities that may occur in the vicinity of stream intakes and shallow wells. When considering options for long-term urban development, it will be important to acknowledge any intake areas that fall within or near the settlement study areas.

Water conservation

The Bylaw also recognises the need for various types of water conservation measures and encourages the installation of water-saving devices, such as drip irrigation systems for gardens and dual flush toilet cisterns.

Note: Please refer to the Relevant Legislation and Guiding Documents Chapter (Chapter 10) for information on the Development Contributions Policy and its relevance for water supply.

Issues associated with water supply infrastructure

Urban planning factor	*Issues*	*Flow-on effects*
Water supply (See also 'Availability of surface water resources')	A combination of: • a reliance on rain-fed streams in steep catchments with limited vegetation to prevent quick run-off; • water loss from leaking pipes; • limited storage capacity; • peak demands during the tourist season; and • uncertainties associated with global warming results in problems regarding adequacy, reliability and efficiency of water supply for existing and future populations.	• Costs to investigate options and upgrade storage, treatment and transporting systems. • Limitations to growth potential, with implications for tourism economy. • Health issues. • Potential effects on supply for fire-fighting.
	Communities relying on groundwater supplies may not meet anticipated drinking water standards and may have inadequate supply for existing and future populations.	
	Ad hoc urban development may limit the efficiency of water supply services.	Increased costs for developers and the Council in establishing and maintaining the systems.

Information requirements for water supply infrastructure

- For any identified potential future growth areas, technical reports addressing water supply implications.

Stormwater Management

Stormwater effects

Akaroa Harbour has higher rainfall than the Christchurch Urban Area, with readings showing an annual average of around 1000mm and a maximum average of approximately 1800mm on the skyline. Stormwater is the runoff following rainfall from surfaces such as roofs, roads, driveways, footpaths, gardens and pasture. Rain that falls within the catchment of each settlement will run across land, percolate downward through soils, enter streams and eventually flow to the harbour. The distance between the inland hills and the coastal environment of the harbour basin is very short and steep. Increased runoff is created through the clearance of vegetation and an increase in hard surfaces. Infiltration has little chance to occur in any short duration, high intensity storms; this situation may exacerbate under potential climate change conditions.

Erosion and increased sediment loadings

Typically in rainstorm conditions there is a natural occurrence of sedimentation in and around the foreshore. This comes from existing gully runoff and also, depending on the tide level, from disturbed sea bed material. However, development can increase sediment load in waterways as topsoils are disturbed and removed. This gives rise to the potential for rill and gully erosion of soils, as the loess soils of the harbour basin erode quickly where they are exposed (such as during subdivision development) and preferential flow paths develop. Sediment deposition occurs where the water velocity in the stream is reduced. This may result in the filling in of wetlands and lowland waterways.

Ponding

For flat areas of the settlements, there is the potential for areas of ponding in low-lying land, particularly if these occur in association with inundation from the harbour during a storm surge. There is very little information currently available regarding flooding on Banks Peninsula.

Contaminants

Urban runoff volumes are not only more concentrated than rural, but also contain contaminants harmful to aquatic biota including heavy metals, synthetic hydrocarbons, silts and occasional chemical spillages. Stormwater typically contains four types of pollutants: suspended solids, nutrients, toxicants and general rubbish. In large urban areas, these pollutants can exceed recommended toxicity levels for aquatic invertebrates, and consequently impact on stream communities. It is essential that both streams and inshore coastal waters are not polluted by contaminants carried to the sea by stormwater.

Stormwater in urban areas

Stormwater pipes collect the runoff and carry it, generally untreated, to the nearest waterway, such as a stream, beach or the harbour. Once runoff is discharged into a waterbody, it is considered to be surface water. The Council has no statutory obligation to provide disposal for private stormwater runoff. Property owners must have either a drainage system that collects stormwater from their property and feeds into the public stormwater network or drainage channel, or the means to dispose of stormwater on-site, such as soakage pits or rain tanks. However, the runoff from Council owned roads requires the construction and maintenance of some form of reticulation system or drainage network, which becomes the logical receiving network for private stormwater disposal.

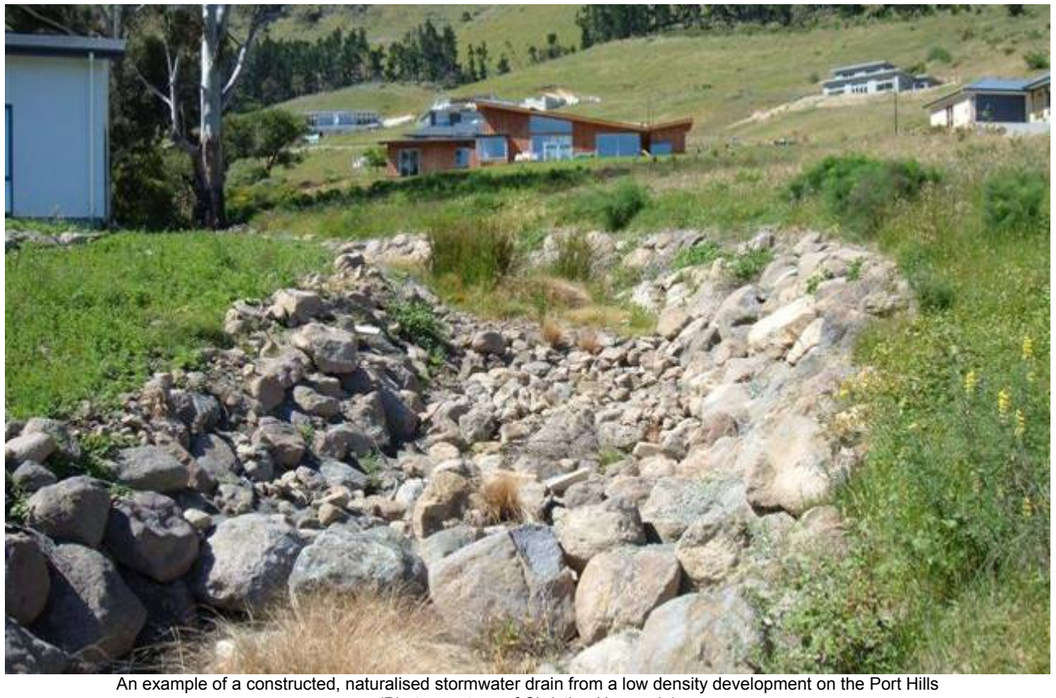
Regulatory framework

Environment Canterbury's NRRP sets out specific requirements regarding stormwater. One of the rules requires the City Council to prepare an integrated catchment management plan to manage current and future stormwater discharges in any stormwater catchment area where more than 30% of the land area of the catchment is used or proposed for use for industrial, commercial or residential activities. Given the large catchments of the harbour basin and the relatively small area of settlements, even modest expansion of a settlement is unlikely to trigger the 30% threshold. Nevertheless, integrated management of catchments would need further investigation for any areas which are considered logical for long-term growth. In addition, the NRRP requires measures to be undertaken to ensure that the quality and quantity of water discharging into surface waters is acceptable and avoids negative effects on cultural values.

Stormwater system design

Significant urban development is likely to trigger the need for stormwater discharge consents. The opportunity may exist in the future to create and enhance natural ponding to mitigate the impact on waterways of quality and quantity effects associated with stormwater runoff, particularly with any larger scale urban development proposals. With sensitive, imaginative design, restored waterways and ponding can become an environmental asset in form as well as function. Stormwater disposal can make use of a system of swales and landscaped open drain networks through reserves and along roadsides. A system of grassed swales is a currently accepted method of providing an efficient means of primary treatment of urban-style runoff and also has advantages of providing a partial retention effect for the flows. Detention swales or ponds reduce peak flows, improve stormwater quality and redirect stormwater to groundwater recharge. On-site stormwater tanks can also be used to reduce downstream effects and provide water reuse for greywater.

In the harbour basin environment, low impact design is more likely to be within character than hard surface measures. However, retrofitting the existing systems will probably only occur where significant existing stormwater issues have been identified. In addition, the original gutters which form part of the stormwater system in Akaroa pose a tension between heritage features and safety for pedestrians at peak tourist season. Individual characteristics of a locality would determine the type of stormwater disposal management system necessary for any new urban areas of the basin.



An example of a constructed, naturalised stormwater drain from a low density development on the Port Hills
(Photo courtesy of Christine Heremaia)

Localised stormwater issues

A 2005 report by the former BPDC acknowledged that the Council does not have a detailed appreciation of the localised stormwater problems and therefore does not have full knowledge of the current demand for stormwater services. Current council-owned stormwater assets within the harbour basin are located within Duvauchelle, Akaroa and Wainui, the majority of which were installed during the 1980s and 1990s (with some earlier reticulation in place from the 1930s in Akaroa). The following settlements are known to have experienced specific stormwater issues but additional information for all settlements of the basin is needed:

- Takamatua: However, in Takamatua, a 2005 Community Survey identified that pollution of seawater through poorly managed stormwater outlets needed addressing. This is likely to relate to extensive soil disturbance associated with major subdivisions, with the issue being wider than the stormwater outlets and including landcover. A subdivision underway in the CDA has experienced problems with managing sediment loads and is implementing measures to reduce silt discharge to the drains and the coastal outfall at Takamatua Bay during the construction phase for the subdivision. From experience of this development, more care will be needed in managing potential erosion in future subdivisions on such slopes.

- Akaroa: Limited temporary flooding of shops in central Akaroa has been known to take place when high tide occurs simultaneously with heavy rainfall. This is due to low gradient and small diameter of stormwater discharge pipes. Irregular flushing of streams, together with the accumulation of debris behind illegal structures, has in the past caused severe flooding during storm events. Increased development, unless adequately mitigated, could result in additional flooding problems.

Akaroa gutters

Note: The Natural Environment Chapter (Chapter 5) addresses other aspects of water management, including groundwater, sedimentation issues and the effects of climate change.

Issues associated with stormwater management

Urban planning factor	*Issues*	*Flow-on effects*
Stormwater management	Ad hoc urban developments, including within rural-residential areas, may give rise to cumulative stormwater effects, particularly in the absence of any catchment management plans.	• Erosion on hillsides and along waterways, particularly where vegetation has been cleared. • Flooding/ponding in low-lying areas of settlements.
	Low impact design of stormwater systems is most likely to be progressed only for large areas of new urban development where costs can be recovered, which will lessen the opportunities and environmental benefits associated with more sensitive design solutions in small developments.	Existing systems are likely to retain hard surface design with reduced environmental benefit unless significant issues arise requiring retrofitting.
	Existing character areas (Akaroa town centre) may not be appropriate for retrofitting with low impact design solutions for stormwater management.	Potential environmental benefits for the town may not be realised.

Information requirements for stormwater management

- Areas within settlements that have experienced flooding in the past.
- For any identified potential future growth areas, technical reports addressing stormwater implications including hydrological modelling, identification of secondary flow paths and catchment management plans where appropriate.

Solid Waste Management

Households, tourists and businesses produce solid waste that requires disposal. Potential landfill sites are scarce and are costly to develop and operate.

Operating transfer stations

Waste from the harbour basin is no longer disposed of within the basin, but is transferred elsewhere beyond the Christchurch/Banks Peninsula area. Greenwaste is collected at Barrys Bay, shredded, composted and sold locally. The District Plan shows waste transfer station designations at Aylmers Valley (beyond the Akaroa study area) and at Barrys Bay (located within the ICPA, although the Boffa Miskell landscape character study does not identify this land as significant). In addition, a township recycling depot operates at Akaroa, whereby packaging, old newspapers, glass, plastics and cans are collected and transported to Christchurch for processing.

Waste volumes / demand

In a study on the impact of tourism on Akaroa's service infrastructure, it was found that there are strong relationships between measures of daily visitor numbers and street bin solid waste volumes. The 2005 Community Survey included comments regarding opening hours at the transfer station and volumes of waste that accumulate during the summer months. The capacity for the existing transfer station to accommodate larger volumes of waste should the population (particularly the peak population) continue to grow, is considered to be adequate.

Waste reduction

Incentives for waste reduction currently occur by way of a limited number of rubbish bags (26) being allocated to each household in the kerbside collection areas. Recycling is encouraged through the weekly kerbside recycling bin collection service in Akaroa, in addition to the operation of the Akaroa recycling centre, two recycling stations and recycling drop off at Barrys Bay, all of which are operated by the Council's refuse and recycling contractor. The study referred to above considered that low users of waste management facilities are subsidising high users due to the current annual flat rate for waste collection and disposal.

A waste reduction initiative - recycling facilities in the Akaroa town centre

Contamination

The disposal of solid wastes can adversely affect environmental quality and public health, as leachate from poorly managed landfills can contaminate surrounding water. Cultural concerns in the disposal of waste need to be considered, including the location of any old landfills and/or future transfer stations. For example, part of the Takapuneke site was used between 1979 and 1994 as the local Akaroa refuse tip; this locality is a registered waahi tapu area given its significant cultural history (refer Social Environment Chapter – Chapter 6). Future development opportunities can also be constrained, depending upon the location of waste management facilities.

Current practice is for landfill management plans to include not only daily operation, but also management of the site upon closure. There are old landfill sites in the harbour basin, including in Barrys Bay, at Takapuneke (on Onuku Road) and Wainui. The Barrys Bay and Takapuneke landfills are not considered by Council staff to be causing any significant effects and are being monitored annually. The exact site of the Wainui landfill and the extent to which it may provide a constraint to future development in its vicinity will require further investigation. The site at Takapuneke may require additional ground cover in the next few years. The Ministry for the Environment is considering developing a National Environmental Standard (NES) for the cleanup of contaminated land. The standard will say what levels of contaminants in soil are acceptable for protecting people.

Issues associated with solid waste management

Urban planning factor	*Issues*	*Flow-on effects*
Solid waste management	The location of both existing and closed waste management facilities can be culturally sensitive, impact upon environmental values and provide constraints to future development.	Long-term or permanent issues around cultural sensitivities, environmental contamination and land use opportunities.
	Removal of solid waste to distant locations, combined with the use of annual flat rates, may reduce the incentive to minimise waste production at source.	'Out of sight, out of mind' approach together with ongoing reliance on vehicle transportation of waste to distant locations, may lead to rising prices for disposal; this would be due to a potential increase in volumes of waste over time as peak populations increase, coupled with rising petrol prices.

Information requirements for solid waste management

- Mapping of old landfill sites and their potential sphere of influence in the event of contamination.
- For any identified potential future growth areas, technical reports addressing capacity issues of existing solid waste collection and disposal systems.

Waste collection service, Akaroa

Technology and Electricity Supply

The supply of both electricity and technological infrastructure (eg broadband internet) are through private companies rather than the Council.

Electricity supply

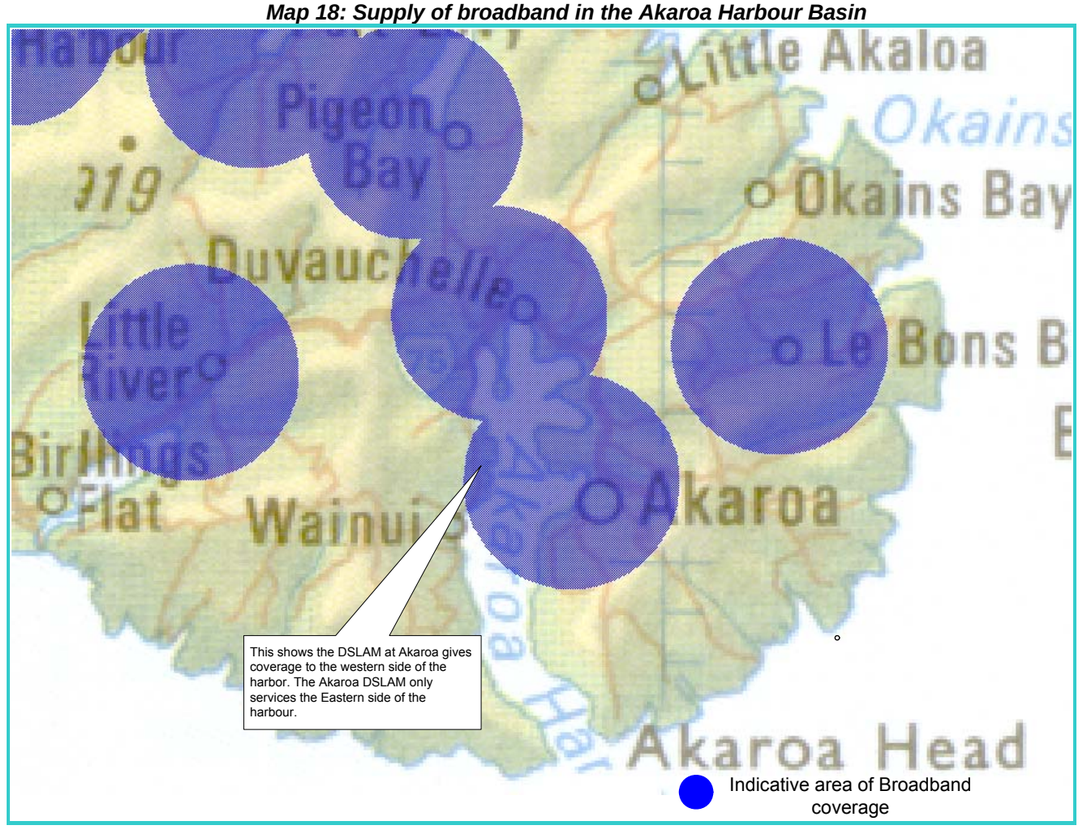
Any potential future growth areas will need to include assessment in terms of the ability to service the allotments with electrical power. The provision of electricity is usually provided following negotiation of an appropriate connection fee with the relevant provider and is unlikely to form a significant constraint; rather this cost would fall with the developer as any inefficiencies in the supply system will need to be borne by the property owner.

There may some issues in the future regarding the capacity of transmission lines and substations to meet the demand of new development. The construction of new electricity transmission infrastructure will need to take into account the effects of these structures (eg power lines) on landscape values.

High-speed (broadband) internet availability

The ability to connect to high-speed (broadband) internet is not at all critical to the ability or otherwise to develop land; however, it is a feature which enables people to undertake business from home, and this could be increasingly important in the future if the peak oil projections hold true. In a survey of Banks Peninsula businesses in 2006, the vast majority had a high-speed connection; those still on dial-up lines were all café or accommodation businesses in Akaroa.

Map 18: Supply of broadband in the Akaroa Harbour Basin



The map above shows the location of Telecom's DSLAMs (Digital Subscriber Line Access Multiplexers) which allow customers to connect to high-speed DSL (Digital Subscriber Line) internet services through the telephone network. The further a customer lives from the DSLAMs, the slower the speed of the internet connection until a point is reached where no service is available (as indicated by the extent of the blue circles). The speed and quality of the

internet connection will also be affected by the quality of the telephone cable and interferences such as electric fences. Based on Telecom's map, several of the settlements (Wainui, parts of French Farm and parts of Takamatua) appear to be outside of the coverage area. As the supply of broadband internet is primarily driven by market demand, it is likely that areas that cannot currently access DSL broadband internet will be progressively 'hooked up' if residential development increases in the future.

Options for residents and business owners who want to access high-speed internet but are located outside the DSL service areas include satellite internet service providers (eg Orcon) or mobile broadband services provided by Telecom and Vodafone. Currently there are no cable or wireless internet providers servicing the harbour basin, although regional wireless internet provider 'Wireless Web' has expressed interest in providing a repeater for this area in the near future, provided they can access a suitable site.

The availability and speed of mobile broadband depends on where the customer is located. Dedicated mobile broadband networks that are available in major cities can not be accessed in rural areas such as the harbour basin, where mobile internet users will have their connection transferred to the standard cell phone network. On this network, download speeds are likely to be similar or only slightly faster than dial-up (eg 40-80 kbps) and will vary depending on the signal strength. Broadband internet via satellite is available anywhere the Western sky can be viewed. Relative to other types of broadband internet, satellite broadband is more widely available and generally very fast, but also very expensive with high set-up and/or monthly costs.

Issues associated with technology and electricity supply

Urban planning factor	*Issues*	*Flow-on effects*
Electricity supply	Ad hoc urban development may limit the efficiency of electricity supply.	Costs of development.
	The current electricity transmission network may not be able to meet the electricity demands of new development.	Potential costs arising form the upgrade or construction of new electricity transmission infrastructure (eg substations, power lines). New infrastructure, such as power transmission lines, may impact on the landscape character of the settlements and/or the rural hinterland.
High-speed internet supply	Any limitations to the provision of broadband services may have consequential implications for potential land use activities within settlements.	Ability to establish business activities / work from home may be constrained if broadband not supplied.

Information requirements for technology and electricity supply

- For any identified potential future growth areas, technical reports addressing servicing ability for electricity and technology.

8. ECONOMIC ENVIRONMENT

Pastoral farming has been a key feature of the harbour basin's visual and economic landscape since large areas of timber were felled early last century. Since the 1920s and '30s, the most noteworthy changes in the harbour basin's economic structure have been related to: the marked expansion of the town's residential areas and in particular the substantial rise in the number of holiday homes; the growth and subsequent decline of the fishing industry; and a renewed growth in tourism, which has become an increasingly important part of the economy. Commercial activity is concentrated within Akaroa Township and there is no dedicated industrial zoning. The increase in demand for housing in Akaroa has had the effect of significantly increasing property values. There are issues associated with the various components of the area's economic framework and these are discussed in more detail within this chapter.

Economy of the Harbour Basin

The LTCCP includes a 'community outcome' of a Prosperous City: "We have a strong economy that is based on a range of successful and innovative businesses. We value sustainable wealth creation, invest in ourselves and in our future". This community outcome applies to Banks Peninsula and the harbour basin just as much as to the Christchurch urban area. Much of the diverse range of economic initiatives in the basin (eg agriculture, wineries, lavender farming and marine aquaculture) occurs outside the settlement study areas, but the majority of businesses in the harbour basin are serviced or otherwise supported to a degree by commercial activities within the settlements, particularly Akaroa. Note that current or likely future changes in the rural economy, for example in response to climate change, global economic pricing changes, technological developments and land pricing, are outside the scope of this study.

Key statistics

The 2006 Census gives us a series of relevant employment figures for the harbour basin.

Table 32: *Census 2006 general labour force and industry statistics*

Percentage of population (15 years +) employed	62% employed (Christchurch & New Zealand: 63%)	1% unemployed	35% 'not in labour force'	
Labour force increase	Between 1996 and 2006, total labour force increased by 12% (from 657 to 738 people)			
Full-time vs. part-time	70% full-time	26% part-time		
Residents' workplace	Majority work within the basin		14% commute elsewhere, beyond the harbour basin.	
Dominant occupations (from most dominant)	Service & sales workers	Legislators / administrators / managers	Agriculture and fishery workers	Elementary occupations[6]
Dominant industries (from most dominant)	Accommodation, cafes and restaurants	Retail trade	Agriculture, forestry and fishing (although has decreased by 10% between 1996 and 2006)	

Most businesses that are located in Akaroa operate only on the Peninsula and nearly 70% of business owners live in the Banks Peninsula area.

Business performance and growth

A survey of Banks Peninsula businesses was undertaken in 2006 and this found that while distance from Christchurch can pose difficulties with access to goods and services, Akaroa businesses are more prepared to accept delays and expect to pay higher freight charges. The survey discovered that the largest businesses in Akaroa have a turnover in the $2 – 5 million category, compared with Lyttelton where seven businesses turn over more than $5 million. The survey of businesses also found that revenue levels have been increasing, and further growth is forecast: 78% of businesses stated that they were currently expanding and a number of businesses stated a growth aspiration to expand during the low season. Peninsula-based businesses have been experiencing a growth rate well above that of the national economy. This is in accordance with the 2004 Berl report finding, showing that the Peninsula had the highest growth in Gross Domestic Production (GDP) in the country.

A key threat identified by businesses surveyed was that growth may be too rapid and endanger the community and the environment. Only 62% of respondents in Akaroa thought that more businesses should be encouraged to move to the area. For those who did want to see more business, entertainment and tourist attractions topped the list. As noted in the 'tourism' section of this chapter, the economy of the settlements is already largely structured around the tourism industry. Indeed, the undiversified nature of the Akaroa economy provides only limited servicing support for the tourism business in the town. A continued focus on the tourism industry has potential to further grow the economy, but also has potential for the economy to be vulnerable to global events; communities that become increasingly dependent on tourism activity are at risk from tourism volatility. Low wages, seasonality of jobs and difficulty providing housing for workers suggests that business diversification may need to be sought alongside any growth in the tourism industry if the economy is to be sustainable and robust into the future. This is discussed further in the following sections of this chapter.

Workforce and recruitment

<u>Size, location and composition of workforce</u>

- The size of the workforce has increased over the last couple of years:
  - Akaroa's growth in full-time jobs was 14% over the two years leading up to the 2006 survey; and
  - part-time and seasonal jobs grew even more, by 32% and 44% respectively.
- The largest employer has 11 full-time employees and the average number of full-time employees is six, although it is noted that the survey did not cover many of the small businesses (eg trades-people and rural farms).
- The majority of employees live locally; there is little commuting between Akaroa and Christchurch.

As the population of the harbour basin is ageing, so too is the workforce. The median age in Akaroa is between 44 and 59 (the number varies as the town covers more than one meshblock). In comparison, the median age is 36 in Christchurch and 35.9 in New Zealand (2006 figures). Residential households are small (averaging 1.9 people per household in Akaroa and 2.2 in the harbour basin area unit in 2006) in comparison with Christchurch (average 2.5) and New Zealand (2.7). A smaller workforce with limited numbers of families may affect both the servicing capability and the social cohesion of the area.

<u>Access to labour market</u>

Nearly 70% of Akaroa respondents cited access to the labour market as a negative aspect of being located on the Peninsula. Respondents were overwhelmingly in favour of more people being encouraged to live in the area in order to halt the decline in the working population and re-populate the school, as well as stimulate the economy. For example, it has been suggested that there is a lack of trades-people in the town.

With its relative geographic isolation, the settlement relies on the small local population for its workforce. Most businesses surveyed employ seasonal workers; only 45% of jobs in Akaroa are full-time. The shortfall in seasonal workers is particularly evident in March, when it is still high season but some seasonal workers, such as students, have left. Seasonal jobs are not suitable for permanent families and accommodation problems are worst during the summer when property owners are using their holiday homes. (This is covered in more detail in the 'Housing Affordability' section of this chapter.)

Vacancies prove much harder to fill in Akaroa than in Lyttelton and 84% of businesses state that they have trouble recruiting staff. Cleaners, for example, have to pay high wages to keep staff; their wages are 30% higher on the Peninsula than in the City. Businesses predict their labour shortage problems to get worse, with the vacancy level in Akaroa predicted to rise from 11% to 15% in high season.

The Council's Visitor Strategy (which supersedes the Banks Peninsula Tourism and Economic Development Plan) notes that the labour market is likely to remain highly competitive and all New Zealand industries will face a tight labour supply. The tourism sector is no exception and will face increasing competition from other industries in the New Zealand labour market. Those industries that succeed in lifting the value of their products or services will be able to pay more, and will become increasingly attractive to employees. Therefore, it is likely that the tourism sector will have trouble retaining its current employees, let alone attracting new people into the industry.

[6] Elementary occupations are defined as including those where the main tasks involve the use of hand held tools and physical effort, and the knowledge and experience to perform elementary and routine tasks.

Economic development

Two new regional funds have recently been established by the Ministry of Economic Development as part of a new Regional Economic policy framework. There may be opportunities in the future to access funding. For example, niche industry development is identified in the Banks Peninsula Strategic Economic Development Plan as a key business to develop in coming years. Much of this form of development is likely to occur in rural areas, but there may be opportunities around the settlements to further develop a network of cottage industries to diversify the tourist economy.

The mechanism through which central government disburses funds for economic development projects has changed considerably and aligns with the shift from the Regional Partnership Programme (and the associated Major Regional Initiatives – MRI) to the Regional Strategy Fund (RSF). Based on the dramatic budget limitations, envisaged scale of the projects and the Canterbury-wide focus, it is unlikely that a significant sum of financial assistance will be made available to local projects. Therefore any economic development initiatives and interventions which are designed for the local areas should encourage organic business growth and the broadening of the business base through focusing on building niche industries servicing both the local and tourism markets.

Land pricing

While the rural hinterland is outside the scope of this study, it is noted that some consider escalating land prices to be impacting on returns from pastoral farming on marginal land. The quality and diversity of use of the rural land around the settlements becomes important when considering opportunities and constraints to settlement consolidation. People need somewhere to live, but if this is at the expense of limited areas of flat higher quality soils and other versatile productive land, then the economic and social merits of each land use must be assessed. The value of residential land can be difficult to quantify when compared directly with agricultural or horticultural use and expert advice would need to be taken if this situation arises.

Issues associated with the harbour basin economy

Urban planning factor	*Issues*	*Flow-on effects*
Business growth	Continued business growth is anticipated, yet if growth is too rapid it may put pressure on the environment, physical infrastructure and community services.	• The very features which attract visitors may be at risk. • Community may struggle to accommodate and service the growth.
Labour market	Growing businesses experience difficulty in accessing a nationally competitive labour market, particularly when recruiting seasonal workers. Further increases in job vacancy levels are predicted.	• Difficulty for businesses in retaining and recruiting employees. • Decline in the working population with implications for social cohesion and community identity. • Effects across the community if business and community needs are unable to be serviced.
	An ageing workforce with fewer families may impact upon the servicing capabilities of the local economy.	

Information requirements for the harbour basin economy

- The economics of alternative land uses need to be assessed to determine the most economically beneficial solution overall (ie to the landowners and to the city). Economic analysis will therefore be needed for any area/s identified for potential long-term growth.

Business Activity

Business activity includes commercial (both offices and retail) and industrial activity. Some business activity occurs within zones identified in the District Plan specifically for that purpose. Other business activity may occur beyond those zone boundaries, either for historical reasons, or because the activity has been approved through resource consent procedures. Farming is also a business, and although the scope of this study does not extend to this activity it is acknowledged that the agricultural sector (and other non-urban industries) provide an important contribution to the harbour basin economy.

The PBPDP does not include objectives and policies relating to the general distribution of business activities across settlements, their size/role/function, or criteria for assessing proposals to expand or develop any new commercial centres. As with residential zoning, the current zone boundaries are used to determine the anticipated extent of business zones. Any proposals to expand the zone or create a new business centre or activity elsewhere would be assessed against the provisions of the new locality. Provided there is not strong demand or strategic benefit to expand or develop new centres, the provisions of the District Plan are probably sufficient. However, there may be scope for better articulating the general intentions for distribution of business activity in future reviews of the District Plan.

Business zones

Akaroa is the only settlement with business zoning in the harbour basin. The zone is a Town Centre Zone, which intends to allow for a range of business and commercial activities, within a framework which maintains the character and amenity of the areas. Particular activities may occur as of right, provided that certain standards are met. These activities are:

- retail premises;
- offices;
- visitor facilities;
- community facilities;
- dwellings;
- places of assembly; and
- home enterprises.

New development is required to be in accordance with the existing scale and intensity of buildings, to ensure that new buildings do not dominate the streetscape or reduce the amenity of public open space.

Industrial activities are provided for within the Town Centre Zone, but these are categorised ‘discretionary activities’. As such, a formal resource consent process is required and proposed industrial activities may be approved or declined depending upon the extent to which the proposal meets the objectives and policies of the zone.

Commercial Strategy

The Council is currently drafting a Commercial Strategy which will provide a long-term framework for regulatory and non-regulatory initiatives across the Christchurch/Banks Peninsula Area. Information collected towards this Strategy shows that Akaroa Township is centred on a strong tourist/niche role, and that although the centre has a high level of amenity compared with other district centres within the Christchurch/Banks Peninsula Area, its retail diversity is poor given its low resident population. The centre is described as being split into two nodes, giving rise to integration issues, and the issue of parking supply in proximity to the centre during peak season is noted (as identified in the Physical Environment Chapter – Chapter 7). The total retail floor-space (excluding offices and commercial services, such as real estate agents, banks etc) is estimated to be approximately 4200sqm of gross floor area. This is a similar sized centre as the Parklands, Avonhead and Edgeware district centres in the Christchurch Urban Area, although its role will be slightly different.

Other settlements

Duvauchelle is the only other settlement with a significant cluster of non-residential activity at its centre, including some retail activity. A study on population and visitor projections for serviced settlements of the Peninsula comments as follows upon commercial activity within Wainui, Duvauchelle and Takamatua.

Wainui:
While Wainui offers significant life-style opportunities, the likelihood these will be realised in significant numbers is reduced by the lack of community and commercial facilities. Development that may be proposed in the future could include supporting infrastructure, such as a small commercial centre, particularly for summer months.

Duvauchelle
Duvauchelle offers significant life-style opportunities. The likelihood these will be realised in significant numbers is increased by the existence of community and commercial facilities.

Takamatua
While Takamatua offers significant life-style opportunities, the likelihood these will be realised in significant numbers is reduced by the lack of community and commercial facilities. However it is noted that the store at Takamatua has developed over time and there may be further proposals to extend the range of goods and opening hours in the future if the population can support this.

In addition, as noted further below, the cheese factory at Barrys Bay includes a retail store within the premises.

There has been no land use survey undertaken to identify the extent of commercial activity undertaken outside of Akaroa's Town Centre Zone, or the customary opening hours (for example, whether each shop is open year-round or chooses to concentrate on peak tourist season).

Barrys Bay Cheese factory

Future business land requirements

Information prepared for the draft Commercial Strategy includes a comment that with limited population growth predicted for Akaroa, demand for additional and more diversified retailing activity is unlikely. The benefit associated with this conclusion is that there may be little commercial pressure upon the existing character and fabric of the town centre's heritage buildings and the integrity of the AHA. However, any long-term planning for the basin will need to consider the potential for the current population trends to alter and for other factors to influence commercial activity locations. In particular, there is a possible scenario for the future which may see:

- predicted slow growth of the permanent residential population in the basin;
- peak populations occurring more frequently as marketing and promotions concentrate on winter months;
- settlements other than Akaroa becoming popular destinations due to infrastructure provision (eg Wainui);
- residential intensification and limited expansion opportunities in the UDS area potentially driving an increase in development beyond the UDS area; and
- peak oil, which may result in the need for more self-sufficient settlement structures. Only 7% of households within 400m of Akaroa's Town Centre Zone currently have no vehicle[7]; this situation may change in the future.

[7] This figure compares with households near the Christchurch district centres or outlying towns of Parklands, Rolleston, Redcliffs, Wairakei/Greers Rd, Fendalton, Halswell and Rolleston in which 0-9% of households have no vehicle. In contrast, between 20 and 28% of households in the vicinity of district centres at Sydenham, Richmond, New Brighton, Worcester/Stanmore, Addington and Church Corner have no vehicle. For the reader's interest, 12% of households within 400m of Lyttelton's town centre zone have no vehicle.

The combination of these factors may give rise to a need to consider additional small-scale, local commercial centres establishing as part of any long-term significant growth of any of the settlements. If there is insufficient business land in the harbour basin, more services will need to be sourced from beyond the area, the economy will have reduced ability to develop a wider base and, over time, this may reduce the diversity of the community. It is noted that Akaroa Town Centre contains a large vacant site (known as the 'BP Meats' site) which is in Council ownership and may be suitable for a future mixed use development.

In addition, any demand for industrial land is unknown but may be necessary in the future. The cheese factory in Barrys Bay, which has been operating since 1893, is an example of an industrial activity with a strong retail component. This business is currently zoned rural.

Issues associated with business activities

Urban planning factor	*Issues*	*Flow-on effects*
Distribution of commercial activity	The District Plan is silent on any preference for the distribution of commercial activity; this can result in reactive rather than proactive planning for new business land.	New proposals have no framework for assessment, with potential (albeit limited) for distributional effects on other centres.
	There is currently no planning framework for creating more self-sufficient settlements (which may need a small business zone). The need for more self-sustaining settlements may arise due to: • long-term population growth; • more regular peak populations; • new infrastructure provision in settlements beyond Akaroa; • development preferences outside of the UDS area; and • peak oil.	• Continued pressure upon Akaroa to provide all the year-round business requirements for the harbour basin, with potential for difficulty in retaining the town's current character and amenity. • Difficulty for harbour basin residents to access Akaroa if transport costs become very high.
Industrial land supply	There is no industrially-zoned land within the harbour basin, requiring any proposals for industrial activity to either locate elsewhere (eg Lyttelton or Christchurch) or apply for a resource consent/plan change.	Limited economic diversification opportunities and consequently fewer opportunities for permanent workers and their families.
Integration of Akaroa Township	The township is split into two nodes, which generates traffic management issues and creating problems for integrating the two areas.	• Potential pressure to develop the land between the nodes for business activity. • Refer Transport section regarding associated connectivity issues. • Potential (minor) challenges to overcome the split focus to market the township as one destination.

Information requirements regarding business activity

- Land use survey identifying commercial premises beyond the Town Centre Zone, and their usual operating hours (ie year-round or peak season only).
- For any identified potential future growth areas, technical reports addressing any need for long-term provision for business zoning, including its location, size, role and function.
- Commercial and industrial land supply needs.

Housing Affordability

The stunning setting of the Akaroa Harbour Basin has been an attraction for residents and holiday-makers for many years. The settlements, particularly in and near Akaroa, have been undergoing a period of significant growth in residential development. Prices reflect demand and this appears to have resulted in an affordability issue for current and potential residents, as discussed in this section.

Property market

House prices in New Zealand continue a general trend of increasing over time, even with the inclusion of periods during which prices ease, as is currently occurring. Local housing markets are influenced by national and international drivers which are numerous and complex. The major factors affecting the New Zealand residential property market since 1994 include population growth (driven by migration), lower interest rates (until more recently) and greater investment in real estate by foreigners and ex-patriot New Zealanders. There have also been two general economic recoveries from 1994 to 1996 and since 2000.

Property prices exhibit cycles, which are generally caused by a mismatch in supply and demand for property. The supply of property is slow to react to changes in demand because of the time it takes to supply new buildings. Prices rise when demand exceeds supply. However, the current evidence appears inconclusive as to the extent to which the supply of residentially zoned land is a problem or a significant driver in the cost of housing. The availability of land for new housing development is often restricted due to the actions of landowners, with practices such as 'land banking' by speculators or investors, or by the need to connect to infrastructure prior to development.

Affordable housing is essential for a community that is strong and diverse. Today the new housing market in New Zealand does not generally provide cheaper housing for lower incomes, despite the trend in more urban locations over the past decade for new developments to offer smaller sections. While anecdotal evidence suggests that the nation-wide issue of affordable housing applies to the harbour basin settlements at least as much as to cities, further research would need to be done if this situation was to be quantified in any way. The growing lack of affordable housing in the harbour basin for the average income-earner appears to be driven by:

- strong growth in land and house prices, partly driven by a strong investor and holiday home market;
- the strength of the visitor accommodation market. Developments that could be aimed at providing an affordable product for permanent residents are instead directed at the tourism market;
- rising incomes and the availability of credit; and
- a growing gap between incomes and rental and housing costs, making it increasingly difficult for median and low income residents to find suitable accommodation in the area. The service-based nature of the local economy tends to see relatively low rates of income growth, compounding the problem.

New house being built in Wainui

Affordability

The Centre for Housing Research Aotearoa New Zealand (**CHRANZ**) has identified that affordability typically becomes a concern when the housing costs of households in the lower 40% of the household income distribution exceed more than 30% of their gross income, whether renting, buying or existing homeowners. As noted above, there has been a growing gap between incomes and people's rental and mortgage costs. This affects not only those on very low incomes, but also affects a range of occupations from workers to managers, technical staff, trades people and professionals.

The CHRANZ identifies several interrelated factors that contribute to the affordability of housing, in addition to income and house prices:

- financial factors (cost and availability of credit);
- demographic factors (household formation rate and migration inflows);
- employment and labour market conditions (ability to participate); and
- supply factors (zoning, labour and resource availability and costs).

Affordable housing is becoming more problematic. Parties who currently provide affordable housing include Housing New Zealand (**HNZ**), Councils, community housing trusts and retirement housing providers, although the focus of the former three is often upon providing housing for people on low, rather than average, incomes. The Christchurch City Council made a submission to the recent Commerce Select Committee's Inquiry into Affordable Housing, and noted that encouraging and increasing the provision and supply of affordable housing is a desirable outcome for the future. A challenge is to encourage affordable housing generally – that is, attending to the intermediate housing market and not just addressing social housing (ie subsidised community housing as discussed further below).

Permanent accommodation needs

Impact of holiday homes

Much of the demand for housing has been driven by residents from beyond the Banks Peninsula Area wishing to build holiday homes. Holiday homes have the potential to become permanently occupied and so add to the existing development potential of the basin. Yet, depending on the economic climate, these homes may or may not be used for permanent residential accommodation.

As an indication of the numbers of holiday homes in the harbour basin, at the 2006 Census 64% of all dwellings in the Akaroa area unit and 56% in the Akaroa Harbour area unit were unoccupied. This is far larger than Christchurch (6%) and New Zealand (10%). In line with this figure, Response Planning Consultants (2005) considers holiday homes to make up 60% of all dwellings in Wainui, Takamatua and Akaroa, and 50% of dwellings in Duvauchelle settlement. Their projections for each settlement are as follows:

Table 33: *Number of holiday homes*

Settlement	Actual	Projected		
	2004	2006	2016	2026
Wainui	100	100	110	120
Duvauchelle	130	130	160	180
Takamatua	50	50	70	80
Akaroa	570	580	640	690

Further research would be needed to comment on whether these projections provide a useful guide to future numbers of holiday homes, however they would give an indication as to expectations, *assuming* the status quo continues for infrastructure and zoning.

The number of holiday homes is certainly increasing. Subsequent data tells us that between 1996 and 2006 the number of unoccupied dwellings in the Akaroa area unit and Akaroa Harbour area unit increased by 32% and 25% respectively. This increase predominantly occurred between 1996 and 2001. Between 1996 and 2006 the number of unoccupied dwellings in the Akaroa area unit increased by 10%. This is larger than the increase for the Akaroa Harbour Basin area unit (4%), Christchurch (1%) and New Zealand (2%).

In the UK, the development of new houses in National Parks, Areas of Outstanding Natural Beauty and rural areas under development pressure, is only allowed when accommodating locals and key workers. Such a restriction may be more difficult to implement in New Zealand in areas dominated by holiday homes, given the differing legislation that applies in each country.

Rental accommodation
Although there are very many more houses in the harbour basin than there are permanent residents, few of these holiday homes are available for long-term rent. The rate of return from short term holiday lets, and the convenience of this to the holiday home owner, mean that the supply of long-term rental accommodation has decreased. Of the permanent residents in the basin, 69% own their own home, a slightly higher figure than Christchurch (64%) and New Zealand (63%), which again suggests that long-term rental accommodation may not be as readily available.

Seasonal accommodation needs

Seasonal workers need temporary summer accommodation. These workers tend to be single with no dependents and their accommodation requirement is generally for rooms or flats. A shortfall in such accommodation is acknowledged in the Council's 'Visitor Strategy' (adopted earlier this year), which includes an objective "2.3 Support the development of the tourism workforce". A specific action under this objective is: "Address issue of workforce accommodation shortage in Akaroa". This action is programmed for implementation as a high priority. However, the problem needs to be quantified in order to determine anticipated demand for seasonal accommodation and the predicted shortfall.

Impacts of housing affordability issues

Sense of community
Housing is a significant constituent in building strong communities. Home ownership in particular leads to more involvement and participation in communities, helping to foster connectedness and social cohesion. With an influx of new buyers, those who would most likely be welcomed by existing permanent residents are those who will live in and become involved in the community, particularly families. However, a lack of affordable housing sees fewer families move into the area. Many buyers will buy homes for rental, or as holiday homes that are used less frequently. Although the tourism focus of holiday homes can be very good for the local economy, low levels of residency by house owners can work against a sense of community. It would be understandable if there were a sense of resentment from some local residents who might view development by absentee owners as driving up property prices out of the reach of long-term residents, placing undue strain on the town's water supply (although infrastructure concerns are related to the development itself rather than its association with tourism) and failing to support a sense of community. A recent study at Otago University into the impact of rising property prices on coastal settlement communities found that while communities may be supportive of limited growth, there can be concern over impacts of major developments, subdivisions and the 'swamping' of the community by incomers and 'urban' attitudes. A related concern is that absentee landowners who infrequently use local services could hasten their demise.

Working population
Increases in property prices may have put housing in Akaroa, whether rented or purchased, out of the reach of working families and this is exacerbated because the type of jobs in Akaroa are mainly lower waged. Akaroa's current population is dominated by part-time holiday home owners and includes many retired people. These groups do not form part of the working population but do contribute to the high house prices, which may make it difficult for working people to move to the town. A comment arising in the 2006 survey of Banks Peninsula Businesses was that promoting the district as a lifestyle choice would not assist with attracting the type of people who will provide labour to local businesses when property prices and rents are well beyond what they can afford and no other housing options are available. In contrast, this study also found that the high school in Akaroa had no problem with recruitment, most likely because it had Ministry of Education houses to offer incoming teachers.

Local economy
The development of a high quality visitor-based economy, as well as the diversification of the economy, will require a stable, skilled labour force. Access to affordable housing will be important to this transition. Beyond the tourism industry, communities that cannot provide affordable homes for teachers, nurses, police officers and other essential workers are at a competitive disadvantage in attracting and retaining workers for these positions. Similarly, employers will be less likely to stay in or relocate to communities that cannot provide an adequate supply of homes that are affordable to their workers. A 2005 survey of 612 Nelson, Tasman and Marlborough households identified that problems with housing affordability posed a significant restraint on economic development and productivity in these regions. There is no requirement for employers to supply housing for their workers and few employers are large enough to develop housing solutions. A key issue, therefore, is the sustainability of the local economy should high housing costs dissuade people from wanting to shift to the area. The CHRANZ also notes that innovation drivers can be undermined if young, creative workers are alienated at the beginning of their careers because the struggle to access affordable housing in the local market is too great.

Future responses

This document is principally aimed at discussing and identifying issues that are arising in the harbour basin. A future part of the wider study will identify and evaluate options for addressing these issues. However, it may be useful at this time to note a number of different approaches that are being taken around the country in relation to affordability of housing.

There is no one 'silver bullet' to respond to affordable housing issues. There are many interrelated drivers affecting housing affordability, so solutions may also need to take more than one form. Attempts to address affordability difficulties largely fall into:

- demand side interventions – to increase the ability of people to rent or purchase affordable housing; and
- supply side interventions – to reduce the cost of housing and/or directly or indirectly increase the supply of affordable housing.

Central government has signalled that it is looking at a range of techniques and tools to improve housing affordability. Any schemes for the Akaroa Harbour Basin will need to strengthen the local economy by helping to retain and attract skilled workers on average incomes, not just low income households.

Local government strategies
Local government acknowledges that it has a role to play in considering the drivers of, and responses to, housing affordability, although it generally has little ability to influence the demand side of housing affordability. Queenstown Lakes District Council has recently developed a strategy for addressing housing affordability which includes the promotion of a range of housing types which are spread across the urban areas of the district and are well integrated with existing communities. The Christchurch City Council adopted a Social Housing Strategy earlier this year which is aimed at providing for low income households, but council staff are also looking at progressing a study of housing affordability options which would address broader issues. As a general principle, it is not considered to be appropriate for the ratepayer to solely subsidise affordable housing. If this were the case, there could be a significant impact on households (including low income households) who would effectively be subsidising housing for other low to medium income residents.

Social housing
Christchurch City Council has been providing rental accommodation, under the name 'City Housing', for many years. This housing is targeted toward people who have a genuine need for housing and the Council has built up a social housing portfolio second only in size to HNZ. City Housing primarily looks after singles, the elderly and couples while HNZ looks after families. City Housing is self-sufficient and does not use ratepayers' funds to operate. The rents charged are significantly lower than current market rates.

Currently in Akaroa, City Housing has a total of six social housing flats: three are located in Bruce Terrace and a further three in Rue Viard. As part of the implementation of the Social Housing Strategy, the Council will be looking at the Akaroa area to see what the need is and developing a plan from there. This will include exploring any need for emergency accommodation and housing for youth.

Housing assistance
Whereas the provision of public housing in the harbour basin provides long-term rental accommodation for permanent resident families on low incomes, other forms of housing assistance such as 'rent to buy' or mortgage assistance may be useful to explore to attract more permanent resident families to augment the Akaroa workforce. Queenstown Lakes District Council is in the process of setting up a Community Housing Trust to provide a range of affordable houses (rental and ownership) for residents. Applicant eligibility criteria will be used based on those who are employed in the district, as well as household income and assets. Being explicit about who any affordable housing should be provided for will be important in any future initiatives (eg this could be linked to specific employment skills shortages).

Site acquisition
A proactive approach to affordable housing could include future land banking or site acquisition by either the Council or another public funded agency to strategically acquire land for affordable housing. This would involve identifying sites which could be suitable for future affordable housing development and purchasing these if necessary. Pilot projects may also be a possibility. Publicly funded housing can help demonstrate good urban design. A risk is that even when affordable land and houses are developed there are limited mechanisms available to councils to maintain their affordability in the long-term (and 'affordability' is lost after properties are on-sold). This would need to be addressed and retention mechanisms incorporated into any rental or sale.

Incentives for developers (Incentives Policy)
While councils are able to take contributions from developers to provide for infrastructure required as a result of new developments, the LGA does not enable contributions to be used for social housing. Because DCs ca not be taken for housing, a form of remission mechanism outside of the Policy would be needed. For example in Queenstown, negotiations with developers of Jacks Point have resulted in an agreement to provide a contribution for affordable housing of 5% of the value of the development.

An Incentives Policy which would incentivise specific types of development that would benefit the community generally is currently being developed by the Council and is likely to create incentives for the provision of affordable housing. However, most developers in the harbour basin do not undertake a complete and comprehensive development; it is more common to subdivide the land and on-sell to individuals for site development. This point is also relevant to the options identified below.

Planning regulation
Planning regulation through the District Plan can include several mechanisms for promoting more affordable housing. While providing a variety of choice in residential environments is a useful start, it only assists those who can afford the choice unless specific steps are taken to incorporate lower cost housing. These mechanisms may include:

- Introducing the issue of affordable housing into objectives and policies of the District Plan so that it becomes a relevant matter when plan changes/variations are proposed or when resource consent applications are considered. This is proposed in Queenstown so that the positive and negative impacts of planning changes on affordability can be addressed.
- 'Inclusionary' zoning, where there is either a requirement or an incentive for developers to include a modest proportion of new housing that is to be set-aside for lower income households.
- Reform of requirements and regulations to eliminate 'exclusionary' provisions. For example, this could include identifying any unnecessary constraints in the District Plan on non-traditional housing forms in locations that are otherwise appropriate for seasonal workers' housing, and, if so identified, work towards their removal.
- Higher density zoning (zoning which allows greater intensity of development). Intensification creates the opportunity to provide for more potentially less-expensive housing around activity centres that give access to community facilities and services. Good quality affordable housing can assist with more compact forms of urban development where this can be supported by the character restrictions of the settlement, thus reducing the need for urban sprawl. For example, accessory dwellings – smaller homes that are built next to or as part of a principal home – can be an excellent way to provide affordable homes for parents or caretakers of the principal residents or to provide opportunities to expand the supply of rental homes while generating income for the owners.
- Distinguishing visitor accommodation areas from residential areas. It is understood that this is being investigated in Queenstown with the aim of providing more affordable housing for permanent residents and separating these areas through zoning in the Plan. This is discussed further under the 'pros and cons' of Tourism, in next section of this chapter. The Queenstown Lakes District Council is also understood to be promulgating a change to its district plan to require resource consents for holiday homes that are rented for under 28 days of the year and is considering applying a 'mixed use' rating to these properties.

In relation to the third bullet point above, the PBPDP provides for additional, detached, self-contained household units (of a lesser size and scale than the principal dwelling) in Residential Zones and Small Settlement Zones. The only specification related to who may occupy the dwelling comes within its title as a 'family flat'. It is noted that a similar provision in the Queenstown Lakes District Plan simply entitles these units 'residential flats' and while they must be in the same ownership as the principal dwelling, there is no restriction regarding family relationships for the occupiers. Any potential expansion of this provision in the future to enable a greater level of affordable housing to establish in parts of the harbour basin would require a study of the effects of additional intensification.

Increasing supply of residentially zoned land
Research being undertaken in Queenstown suggests that land markets become very inefficient at about 80% capacity and that a restricted supply of opportunities for housing means that land values start to rise very quickly. However, while there is still quite a large amount of residentially-zoned undeveloped or underdeveloped land in the Akaroa Harbour Basin, land values appear to be continuing to increase. As noted above, there is no demonstrable evidence that links the supply of zoned Greenfield land with house price increases over the past ten years. This is generally because it is up to developers to subdivide and make that land available for sale. Developers tend to invest in land at an early stage and then control the release of sections on to the market. Large residential developers can be prepared to hold land for extended periods to achieve maximum returns. This means that zoning more land does not necessarily equate to increased land availability and therefore is unlikely to have any immediate effect on the market or exert an influence on the price individuals will pay for a house.

Integration
It is not just a matter of increasing the supply of affordable housing; it also needs to be of good quality, well-maintained and integrated into the community. The Queenstown Lakes District Council's strategy states that such integration refers to:

- the suitability of the location, enabling the household to access employment, shops, schools and community facilities without long trips by car; and
- all suburbs and settlements having some affordable housing, avoiding an over-concentration of affordable housing in some areas.

The Social Housing Strategy seeks to locate social housing near community hubs where practical to provide opportunities for community integration and allow access to services by the residents. Small-scale clusters of social housing are preferred and good design outcomes are essential.

Employer provision
Employers in some resort communities provide housing as part of their wider benefits programme to help attract and retain employees who would otherwise face affordability issues in the intermediate housing market. As noted above, few employers in the harbour basin are large enough to progress this independently, but there may be scope for promoting joint housing funding schemes between interested businesses.

Other initiatives
There may be opportunities arising, particularly in light of possible changes in legislation, to undertake a variety of other initiatives that focus on incentives and/or increased regulation to support ongoing increases in supply of housing that is more affordable for average income earners.

Issues associated with housing affordability

Urban planning factor	*Issues*	*Flow-on effects*
Housing affordability	A combination of: • strong growth in land and house prices; • slower rates of income growth; and • a very high proportion of holiday homes create housing affordability problems for current and potential permanent residents and seasonal workers. This can make it difficult for families to move to the area and for businesses to retain and attract staff.	• Difficulty sourcing labour for local businesses, with implications for a falling level of service to visitors and limitations to economic growth. • Proportionally lower levels of permanent residents works against the fostering of social cohesion and a sense of community. • Absentee landowners who infrequently use local services could hasten their demise.

Information requirements regarding housing affordability

- Research to quantify the issue of affordable housing shortfall and monitoring through the use of a housing affordability index.
- Anticipated demand and predicted shortfall of seasonal accommodation.
- Research to determine the extent to which factors other than housing affordability may deter people from living and working in the area (eg cost of living, lifestyle costs etc).

Tourism

Akaroa, with its distinctive character and historic buildings, attracts 30% of all visitors to Christchurch. Akaroa's close proximity to Christchurch (a key international gateway) makes the town an attractive and accessible destination for both day-trippers and overnight visitors.

Visitors

New Zealand tourism

International visitor numbers to New Zealand have grown by 85% in the last 10 years and in 2004 the industry was worth $16.5 billion to the New Zealand economy.

Banks Peninsula

Both Christchurch/Banks Peninsula, and Akaroa in particular, are experiencing a period of sustained growth in tourism activity which is forecast to continue well into the future. The Commercial Accommodation Monitor records data for Banks Peninsula as a whole, but indications are that Akaroa receives 37% of all overnight visitors to this area. The Statistics New Zealand Accommodation Survey shows that total guest nights have increased for Banks Peninsula as a whole between 1997 and 2005 for both the high (March quarter) and low (September quarter) seasons:

- *March quarter:* the total guest nights increased by 85% from 45,935 to 85,046, whereas Christchurch had a smaller percentage increase of 50%.
- *September quarter:* the total guest nights increased by 91% from 10,025 to 19,100. Again, Christchurch had a significantly smaller percentage increase (52%).

As tourism and hospitality is a growth sector, it is important that it be managed carefully to ensure that the host communities and environment are not negatively affected.

Akaroa provides a range of tourism-based activities

Role of the City Council

The public sector promotes tourism development while mitigating the adverse impacts that the development brings. Differing interests and conflicts need to be balanced, while seeking the best overall direction of tourism development locally. The Council does this in a couple of ways:

- Christchurch and Canterbury Marketing Ltd (**CCM**) was formed in 1999. It is one of New Zealand's largest Regional Tourism Organisations and is responsible for the marketing of Christchurch and Canterbury as a visitor destination.
- Tourism accommodation is provided for in Akaroa through the District Plan, which includes 'visitor facilities' as permitted activities in the Town Centre Zone (provided they are established within an existing building). Other councils identify particular zones specific to tourism activities: for example Rotorua has a 'Resort Zone' and MacKenzie District Council a 'Tourist Zone'.
- 'Visitor facilities' are required to meet certain standards that aim to ensure that the local environment is not adversely affected by these facilities. The local character, heritage and outstanding natural landscapes which the tourism industry relies upon are also protected from inappropriate development.
- The Council has developed a 'Visitor Strategy' to provide a strategic framework around management of the visitor industry in order to achieve long-term benefits and reduce impacts on communities.

Marketing

Akaroa has its own business association, Akaroa District Promotions, which is a business network promoting tourism in Akaroa. Its main focus has been the operation of the Information Centre in Akaroa. Of businesses surveyed in Akaroa, 54% collaborate on marketing and promotion.

Smoothing out the impact of the high summer season and low winter season has been recognised as an important initiative. This is identified in the Visitor Strategy and summer marketing is being discouraged in favour of concentrating upon shoulder and low-season advertising.

Seasonality

The busiest season is the summer, but public holidays and weekends throughout the year are popular. The winter season is much quieter, with most businesses running well below capacity and many closing for 1-2 days per week. While growth in harbour-based nature tourism has been marked over the past few years, there is little for visitors to do in winter or during poor weather. Consequently, there is a widening gap between the most and least popular months to visit. If this trend continues over time, it will accentuate the 'seasonality' issue, which impacts upon:

- the viability of investing in tourism developments and infrastructure;
- the viability of tourism businesses; and
- the ability to attract/retain experienced and qualified staff.

Smoothing out the seasonal peaks and troughs will be important long-term for the settlement. Suggestions as to how this could be achieved, other than by changing marketing practices as identified above, have included labour sharing with other seasonal areas (eg the ski industry) and providing Akaroa with more winter activities to attract visitors during the off-season.

Economic dependence

Employment

While employment levels are not low, there is a heavy reliance on the tourism sector. Akaroa residents are more likely to be employed in tourism and to have members of their household or family employed in tourism than their Christchurch counterparts. 57% of Akaroa's workforce is employed in a tourism-related job and of these employees, 47% are employed full-time. This is indicative of the relative importance of the tourism industry to Akaroa's economic well-being.

It is understood that there is demand for employees at peak times, although seasonal workers may meet that demand (figures are not available to confirm this). Further information on seasonal workers and the existing capacity of businesses would be beneficial. There may be a need for a diversification of work opportunities for families.

Risks

Akaroa's very high level of economic dependence on tourism when compared with the Christchurch Urban Area makes the basin vulnerable to changes in the tourism economy as a whole. Indeed, the Tourism Industry Association of New Zealand acknowledges that tourism is not a single economic cure for communities. A 2003 paper discussing tourism in Christchurch and Akaroa identifies two sets of risks in over-dependence on tourism:

- Tourism is a "luxury good" and fluctuates with the availability of personal disposable income and perceptions of economic stability and growth. Communities which have tourism as a significant factor in the local economy are vulnerable to a downturn in tourism and associated economic activity.
- The environmental capacity to absorb tourism is finite. Over-expansion or poorly managed development can degrade the key qualities that visitors seek or that local communities value.

'The Giant's House' mosaic garden in Akaroa – a popular attraction for visitors.

The pros and cons of tourism

Benefits of tourism

A Lincoln University study identified various benefits of tourism. These include:

- cultural interaction;
- employment opportunities;
- the creation and maintenance of improved facilities and amenities for locals; and
- increased economic activity.

Tourism acts as a significant catalyst for economic growth and employment. Total direct spending by tourists in Akaroa is estimated to have been $17.3 million in the 2002 year. Akaroa District Promotions noted in 2001 that the average international visitor spends $166 per day or $2,994 per visit;

Issues stemming from tourism

Problems and concerns include those relating to both supply and demand:

Supply issues:

- *Increased congestion*.
- *Strain on infrastructure* - particularly Akaroa's water supply and wastewater system. Tourism is dependent upon utilities and infrastructure, both within the settlements and within the wider Christchurch/Banks Peninsula Area (including roads, lighting, signs, water and sewerage, public transport, airports and ports). Infrastructure supply issues extend to quite specific matters, such as waste disposal stations for campervans. The harbour basin has two privately managed stations located in Akaroa and Duvauchelle. If these were to change hands or no longer be offered, then there would be a significant consequence for these tourists and the host community.
- *Cultural 'clash'* - tourism causes greater social impacts than other economic sectors as it depends on an influx of outsiders into the host community. The high level of contact is a consequence of both the numbers of tourists relative to residents and the large proportion of the town centre that is focused on tourism. 23% of Akaroa residents have often changed their shopping times to avoid tourists, compared with 1% in the Christchurch Urban Area. Economic benefits of tourism should not be sought at the expense of threatening residents' lifestyles. There can be a conflict of interest or value clash between objectives for tourism growth and the inevitable 'change' to communities. The Council's Visitor Strategy includes and objective (objective 3.2) to "manage any potential adverse effects of tourism on communities". Actions associated with this objective include: "monitor[ing] visitor impacts on communities, in particular the smaller communities of Banks Peninsula";
- *Impacts on the natural environment.* A 2001 workshop at Lincoln noted public feedback on Banks Peninsula: "by all means bring prosperity to the area by sensitive development of the tourist industry – accommodation, cafes etc but don't touch our water and our coastlines!".
- *Impacts on unique character of Akaroa - t*he potential for Akaroa's village character and ambience to be lost.

Demand issues:

- *Waning tourist demand in the future.* In the past, the threat of SARS and terrorist activities have had a global impact on tourism.
- *Seasonality* - the seasonal nature of tourism could be exacerbated.
- *Climate change* may pose a direct risk to the natural features on which some of the local tourism industry is based.

A particular matter which may require further investigation is whether the use of a dwelling in a Residential Zone for short-term rental (ie holiday homes), and which is therefore run predominantly as a business, should be subject to any particular measures. While these activities contribute to the local economy, they do not contribute to any sense of community identity or service provision, as identified in the 'housing affordability' section above.

Campervans parking in Akaroa

Potential growth

Growth in tourism is the main vision for businesses surveyed in Akaroa, although this is qualified by the need to sort out both accommodation issues and infrastructure (including parking and transport planning, water supply and sewerage issues). The type of tourism growth sought is that which:

- is sensitive to the environment and contributing to a sustainable economy;
- maintains Akaroa's character and supports heritage tourism; and
- develops and brands the area as a cultural/eco-tourist destination, including the development of walking and biking routes.

There is potential for further diversification of the industry. For example:

- Feedback in the survey of businesses included a suggestion that Akaroa needed a hotel, although views varied as to whether this ought to be a large hotel or a boutique hotel. The Queenstown and Wanaka Growth Management Options Study notes that accommodation for tourism in that district is increasingly in the form of 'rentable' apartments and industry commentators suggest that there may be only one large hotel in the future.

Akaroa District Promotions noted in 2001 that Akaroa can offer conference facilities for groups of up to 100 people; a larger conference facility might benefit the shoulder and low season economy if sensitively located and appropriately managed.

- The two harbours have potential for improved linkage via the rural hinterlands. For example, the road from Port Levy to Pigeon Bay could be promoted as a circular tourist driving route from the Lyttelton Harbour Basin to Akaroa. The development of more walking and biking routes linking the basins would also support this opportunity.
- Eco-cultural tourism has been identified in a Lincoln University study as an option that can satisfy the dual aims of local community involvement in tourism, with the supply of products that appeal to the broadest possible range of tourists. Despite a wealth of Maori history in the harbour basin, there is little in the way of a Maori cultural tourism industry, although the study acknowledges that focusing on the 'eco' part of eco-cultural tourism products and experiences may be a prudent first step to industry development. The geology, birdlife and strong commitment to promoting native biodiversity could be developed into major draw cards for nature-based tourism. It is also noted that in contrast to the established cultural tourism experiences in Rotorua, there is an opportunity for incorporating a more contemporary definition of culture in the development of any eco-cultural tourism ventures.
- Events and festivals that are growing in popularity include 'Le Race' and the French Festival. Promoting and developing existing and new festivals is identified in the Council's Visitor Strategy as a means of developing a seasonal spread of tourist interest.

Issues associated with tourism

Urban planning factor	*Issues*	*Flow-on effects*
Employment in tourism for future populations	Economic dependence on tourism makes the harbour basin vulnerable to changes in the tourism economy, including downturns in response to global events or a changing host environment (eg due to climate change).	Downturn in tourism likely to have significant economic consequences for the harbour basin residents.
Effects of tourism	Over-expansion or poorly managed tourism development can degrade the key qualities that visitors seek and that local communities value.	• Reduced environmental amenity. • Residents disheartened and potentially moving away. • Tourism industry suffers. • Economy affected.
	There can be a conflict of interest or value clash between objectives for tourism growth and community identity.	
	A large percentage of the houses that are suitable for permanent residential occupation are used as holiday homes. These contribute to the local tourism industry but reduce community identity and the provision of services.	• Intentions for strong communities difficult to achieve. • Difficulty in providing affordable housing for workers.
Seasonality of tourism	There is a widening gap between the least and most popular months to visit which accentuates issues of seasonality, impacting upon: • the viability of tourism businesses and investment opportunities; • the ability to attract and retain experienced and qualified staff; and • pressures on infrastructure.	• Businesses not meeting their potential. • Staff vacancies harder to fill. • Infrastructure costs.

Information requirements for tourism

- Visitor number projections specific to the harbour basin.
- Seasonal employment requirements of businesses.

The heritage character of Akaroa is a strong drawcard for tourists

9. MANAGING URBAN CHANGE

The Akaroa Harbour Basin is a popular area, offering stunning scenery and a rich cultural and built heritage. However, as people visit and move into the area, increasing pressure is placed on the sensitive local ecosystems, water and wastewater infrastructure, transport and roading systems, stormwater services and solid waste management. Rather than reacting to change as it occurs, the affected communities are better served by proactive planning. Understanding current trends is the first step. This section of the document: summarises these trends; identifies where existing residential capacity lies; discusses the nature of growth pressures in New Zealand towns that serve as holiday destinations; identifies alternative growth management approaches; addresses known community aspirations; and summarises the current regulatory planning framework.

Population and Dwelling Trends

'Household' numbers rather than population numbers are usually used as the mechanism for regulating the density of people and buildings in settlements. This is because urban change is usually related to household size and composition rather than the number of individuals. 'Households' is also the measurable unit used by Statistics New Zealand in Census data gathering. Two documents have been drawn upon to determine existing trends in population and dwelling numbers in the Akaroa Harbour Basin. However, these will not give a complete picture for several reasons. Firstly, the population projections produced by Statistics New Zealand following the 2006 Census are not available until the end of 2007. In addition, meshblock boundaries (which divide the land area and provide the basis for results to be aggregated) do not correspond well to the settlements of the harbour basin; in some cases one meshblock may cover two to three settlements and in other cases one settlement may be divided into one or more meshblock areas. Finally, the projections that are available from the 2001 Census data and the determination of percentage changes over time both rely on very low base numbers, meaning that small changes can appear to result in significant trends when this is not necessarily the case. Therefore, only very clear trends are identified here.

Population

Past trends:

Past Census data tells us that between 1996 and 2006, the Akaroa Harbour Basin has had a slower rate of growth in population, households and dwellings than in the Christchurch Urban Area or New Zealand. The harbour basin's population grew at a slower rate than the number of occupied dwellings and households, perhaps reflecting smaller household numbers and the high numbers of holiday homes in the area. While the overall harbour basin 'usually resident' population (ie all people who usually live in the area and are present in New Zealand on Census night) has only increased by 1% (compared with 10% in Christchurch City), the Duvauchelle/Barrys Bay area increased by 19% (15 people), and the French Farm/Tikao Bay/Wainui area increased by 18% (21 people). Akaroa's usually resident population showed an overall decline over the same time period (1996-2006), although the decline in fact occurred between 1996 and 2001. Although the population has increased since 2001, it has not reached the level of 1996. Over 50% of the harbour basin's population, households and dwellings are located in Akaroa, however this percentage has been decreasing over the last ten years as other settlements have grown.

Population projections

Predicting population changes is a very uncertain science as it is very responsive to changes in the external environment (eg the economy or world events). The following information for several of the Basin's settlements has been drawn from a technical document prepared in 2005 which reviewed population and visitor projections for the serviced settlements of the Peninsula. The threshold level of a '*high*' population gives the maximum high season population, calculated to occur 45 days during the year (occurring at Christmas, January, Easter and Labour Weekend).

Akaroa: population projections for both visitors and usually resident population:

- The usually resident population in 2001 was between 650 and 690, and in 2006 was 699; this is projected to increase to between 750 and 850 for 2026.
- High population for 2026: projected to be anywhere between 6500 – 11000.
- There were three population projections used, which each provided different results. Tourist numbers are expected to increase, leading to more tourism-related enterprises and employment. Within Akaroa there is a full range of community and commercial facilities. People are attracted to the area for the lifestyle opportunities provided, including its coastal values. Accordingly, it is more likely that the decline in usually resident population that Akaroa is currently experiencing will be reversed. (*Note: This appears to be the case when viewing the latest Census data*)

Takamatua: population projections for both visitors and usually resident population:

- High population for 2026: between 300 – 320.
- The usually resident population in 2001 was 60. This is projected to increase to 70 – 80 for 2026.
- While Takamatua offers significant life-style opportunities, the likelihood these will be realised in significant numbers is reduced by the lack of community and commercial facilities. Day visitor numbers are likely to be low.

Duvauchelle: population projections for both visitors and usually resident population:

- High population for 2026: between 1100 – 1200.
- The usually resident population in 2001 was 220. This is projected to increase to between 260 and 330 for 2026.
- During the high season, visitors considerably outnumber the usually resident population.

Wainui: population projections for both visitors and usually resident population:

- High population for 2026: between 600 – 650.
- The usually resident population in 2001 was 80 – 90. This is projected to increase only a small amount to 110 - 120 for 2006.
- A possibility exists that if development constraints occur in Akaroa there may be a diversion of development to Wainui. Wainui may prove a popular choice for 'spill-over' development due to its coastal location and availability of flat land for development.

Visitors and holiday homes

Holiday homes make up a very large percentage of dwellings in the Akaroa Harbour Basin. The information below was drawn from the same document as the above data.

Akaroa:

- Holiday homes are considered to make up 60% of all dwellings in Akaroa. This trend is expected to continue. The number of holiday homes in 2004 was 570. This is projected to increase to 690 by 2026.
- While the Tourism Research Council anticipates an annual tourism growth rate of 3.4%, data from the Commercial Accommodation Monitor suggests that a 7.7% growth rate could be used, being the average increase in overnight visits on Banks Peninsula between 1993 and 2004.
- Overnight visitors per day staying in commercial accommodation are expected to increase in the high season from 530 – 550 in 2004 to 1200 – 3500 in 2026.
- Overnight visitors per day staying with family and friends are expected to increase in the high season from 50 in 2004 to 130 in 2026.
- The number of day visitors from Canterbury (90% of day visitors) is expected to grow at a rate of 1.4% per year. International day visitors are projected to grow 6.1% per year.

Wainui:

- Holiday homes are considered to make up 60% of all dwellings in Wainui. This trend is expected to continue. Number holiday homes 2004: 100, projected to increase to 120 by 2026.
- There is only one commercial accommodation provider, being the YMCA facility. The site currently has a capacity to accommodate 100 guests.
- Wainui has an attractive beach area which would encourage day visitors. It is estimated that there could be between 30 – 60 day visitors in high season.

Duvauchelle:

- Holiday homes make up 50% of all dwellings in Duvauchelle. This trend is expected to continue. The number of holiday homes in 2004 was 130. This is projected to increase by 2026 to 180.
- The largest accommodation provider is the Duvauchelle holiday park. Overnight visitors per day are expected to increase in the high season from 110 in 2004 to 280 in 2026.

Takamatua

- Holiday homes are considered to make up 60% of all dwellings in Takamatua. The number of holiday homes in 2004 was 50; this is projected to increase to 80 by 2026.

Population, household and dwelling trends

- The Harbour Basin's resident population has been ageing over the last ten years, with the median age increasing for all areas except Robinsons Bay. The percentage of the harbour basin's population aged under 15 years was 10% at 2006, compared with 19% for Christchurch and 22% for New Zealand. Age composition data shows that the harbour basin as a whole has an older population than Christchurch/New Zealand. Both the Takamatua and the French Farm/Tikao Bay/Wainui meshblocks show a notable increase in the numbers of people aged 65 and over in recent years.
- The majority of the resident workforce works within the basin, although 18% of those who work within the harbour basin live elsewhere.
- The number of households in the harbour basin increased by 5% at the 2006 Census, which is a smaller increase than Christchurch (13%) and New Zealand (15%). '*Households*' are either one person who usually resides alone, or two or more people who usually reside together and share facilities in a private dwelling.
- The total number of privately occupied dwellings within the harbour basin increased by only 4% between 1996 and 2006, compared with 13% in ChCh and 15% in New Zealand. However, Duvauchelle/Barrys Bay, French Farm/Tikao Bay/Wainui, and Takamatua, all showed significant increases, of 30%, 22% and 33% respectively. Unoccupied dwelling counts are not currently available from Statistics New Zealand.

Kingfisher Point subdivision - Takamatua Bay

Existing Capacity

District plans zone land for certain purposes. Land which is zoned for residential activity provides for subdivision to occur and dwellings to be established. The potential for zoned land to be developed can be constrained by certain factors, including land stability and connection to infrastructure services. As indicated above, there may be some capacity thresholds reached for Akaroa which means that projected growth cannot occur within Akaroa itself. In this situation either the growth will not occur, or at least a proportion of it is likely to 'spill over' into other areas, including other settlements within existing Rural Zones. Various calculations of vacant residential land within several settlements were undertaken by Council planning staff in 2006. These calculations included deferred zones (that is land that has been zoned for residential activity but requires connection to infrastructure before the land can be taken up for residential use) and assume:

(a) no topographical or access constraints; and
(b) that roading requirements reduce the potential area for subdivision by 20%.

The findings of this study are summarised in Table 34 below, and assume that development occurs at the densities provided for by the District Plan's minimum lot sizes (400sqm Residential Zones, 1000sqm Small Settlement Zone and 5000sqm Akaroa Hill Slopes Zone).

Table 34: *Allotment capacity in current zones*

Settlement	Zone	Vacant land (hectares)	Equivalent number of potential lots	Total potential new allotments for settlement
Akaroa	Residential	17.27	354	**416**
	Hill Slopes	27.39	44	
	Residential Conservation	0.58	18	
Takamatua	Small Settlement	6.34	51	**51**
Duvauchelle/Robinsons Bay	Residential	16.93	330	**340**
	Small Settlement	1.31	10	
Wainui	Residential	8.21	164	**164**
			Total potential number of lots:	**971**

Note: the Akaroa figure includes Council-owned land at Takapuneke, which is not available for residential purposes. Assuming this land is taken out of consideration, the Residential Zone capacity reduces to 264 allotments, meaning the total number of allotments available for settlement in Akaroa reduces to 326.

The population figures given in the section above include both day visitors and those staying in commercial accommodation or with friends and relatives. If these figures are taken out of the equation and only the usually resident and holiday home populations are considered, then a comparison between the above vacant land capacities and the 2001 projections of population growth to 2026 shows that each of the settlements above has ample capacity within existing zoned areas to provide for anticipated population increases.

Despite the initial indication that there is unlikely to be significant growth pressure on Residential land within the Basin, it is important to note that:

- the assessment assumes no topographical or servicing constraints (which may limit potential development within areas zoned for housing);
- this does not take account of the relative returns from rural and urban land use and subdivision. High residential land prices drive the pressure for development beyond Residential Zone boundaries and the planning system must deal with this pressure reactively; and
- 2026 is only 19 years from now whereas this study has a longer planning period of 25 – 30 years. Therefore it may not be appropriate to rely on uptake of zoned areas when managing long-term urban change.

In order to provide certainty for the community, any future areas of development are best identified in advance rather than being created through the Council responding to proposals on their merits. If we assume that the population and dwelling numbers of the Basin are likely to continue to grow, even at a relatively slow rate, it would be appropriate to consider long-term proactive planning and management of any urban growth around these settlements. A 'sieve mapping' study to identify constraints and opportunities for long-term future growth is an appropriate mechanism in this regard. This would assist in determining the environmental and service capacities available to absorb growth in different parts of the harbour basin and would assist in determining whether the existing vacant residential land can be reasonably expected to be taken up for housing in the medium to long term.

Addressing Pressure for Urban Change

As noted above, the existence of capacity within existing Residential or Small Settlement Zones does not reduce pressure for residential development outside of those zones, nor does it absolve the Council of its responsibility to undertake proactive strategic planning for the long-term future of the Basin's settlements. In addressing pressure for urban change, it is helpful to look to other resort communities around New Zealand who have experienced similar issues.

Queenstown Lakes District Council has developed a growth management study, and in doing so has identified several key factors that are relevant to planning in the Akaroa Harbour Basin:

- It is important to ensure that the special qualities of the area are protected and to ensure that any future growth makes the area a better place to live.
- Expansion of the urban area will put at risk the natural landscape features of the area, undermining the sustainable development of the economy, which relies upon the pristine environment, while the visitor experience offered by the urban area may be diminished if the quality of development is poor.
- If an area has many more visitors than residents, it may make the place feel as though it no longer has a community; this affects the sense of identity and belonging of people living in an area.
- Accommodation for visitors is increasingly in the form of 'rentable apartments' (apartments rented for short-term stays); there may in the future be only one large hotel in Queenstown.
- The diversity of the community will be reduced if constraints on land supply mean that land prices escalate even further, reducing opportunities for affordable housing.
- Growth caps could raise house prices. Over time the businesses struggle to attract and retain staff and as a result the service offered to visitors falls.
- Insufficient business land will harm the economy and peoples' living standards. Economic growth may be slowed by a lack of land for services and light industrial activities, thereby stifling economic diversity.
- Restricting supply of land for services may not significantly slow growth in the number of visitors, as they are likely to be able to afford higher prices. It is likely to be the resident population that suffers most from such a strategy.
- 'Slow growth' policies will not solve the underlying problems. The current capacity will still be reached at some point, while growth pressures still remain.
- The community needs to anticipate these constraints and plan for them now, otherwise the quality of life in the area, and its value as a tourist destination, will probably suffer in the future.

Waiheke Island has completed a 'village and rural communities strategy' to manage the effects of future growth in a way that retains Waiheke's special character and environment. Through consultation, several general 'principles' were developed:

- Principles of environmental protection – identify the areas which are inappropriate for development because of environmental or amenity constraints;
- Principles of economic development and employment - recognise the need to provide for local employment and business opportunities that are complementary to the character and lifestyle opportunities the area provides;
- Principles of strong communities - identify opportunities to create a sense of place, a sense of belonging and a community that supports innovation, creativity and productivity;
- Principles to protect and enhance the area's character - recognise the importance of maintaining the unique character of the area, particularly by protecting the open character of rural areas of the island; and
- Principles of location - guide the location and form of future growth-related development.

The strategy notes that demographic and economic characteristics change over time, which may increase demand and expectation for infrastructure, community services and amenity features. The strategy is a tool to recognise constraints and opportunities for development of these features. When the existing stock of residential land on Waiheke is 90% developed, the Council will consider promoting a change to the District Plan to 're-zone' the land for residential purposes. The intent is to reflect the village-scale approach to growth.

The strategy promotes a framework for assessing the location and characteristics of future development as and when the basin comes under pressure to provide more land for residential purposes. This includes:

- retaining the concept of discrete villages bounded by rural land as the preferred land use pattern for residential development;
- maintaining the open space, low density character;
- identifying areas of ecological, environmental, historical and cultural significance and avoiding development in these areas; and
- identifying areas subject to natural hazards which impose safety risks and avoiding development in these areas.

The legislation in New Zealand allows individuals to apply for resource consent for particular developments and these will be assessed against the District Plan. In addition, once the Banks Peninsula District Plan becomes operative, individuals may apply for 'plan changes' to rezone areas of land. The status of a strategy such as the one for Waiheke would need to be clear and would work best as an overarching guide to both regulatory and non-regulatory measures which will need to be implemented.

Whangamata is similar to the Akaroa Harbour Basin in that large seasonal fluctuations in population place significant pressure on the local infrastructure. In Whangamata, the concern is that this can affect the health of ecosystems and the community, and the physical form of the surrounding catchment and Whangamata harbour. The area's natural attractions encourage people to visit and encourage ongoing property development. This can result in the loss of the values that made the location popular in the first place. A community plan was developed, although this experienced issues of implementation, as it wasn't aligned with the provisions of the District Plan. The LGA and the RMA have no specific mechanism for implementation of community plans. It is therefore intended to use the Whangamata Community Plan to identify key inputs into the LTCCP which will in turn inform the future development of Council District Plans and will indicate where Council resources are to be directed.

The **Parliamentary Commissioner for the Environment** has produced a report on 'managing change in paradise', which looks at issues associated with development in 'peri-urban' areas. The report included a section on Banks Peninsula, which increases its value as a source document for addressing the Akaroa Harbour Basin settlements. The following comments were particularly relevant:

<u>General</u>

- Most peri-urban areas are not pristine and have undergone some form of modification. However they are more natural than the adjacent urban area which is why they are often valued highly by people and communities. The effects of development in peri-urban areas vary, but can include disruption of ecosystem processes, loss of biodiversity, fragmentation of landscapes, loss of open space and visual impacts with land-use change.
- If landscape values are degraded, then often the 'sense of place' that people feel about an area can be lost.
- The types of issues that need to be addressed in peri-urban areas include:
    - the stability of the land;
    - the carrying capacity of the local catchments for stormwater and the influence of subdivision on the stormwater load and consequent impacts on land stability and stream ecology;
    - wastewater management; and
    - capacity and impacts on native vegetation, faunal habitat and outstanding landscapes.

  A baseline can be established by assessing the carrying capacity of an area and setting appropriate limits.
- No single policy tool or mechanism is likely to provide for the sustainable development of peri-urban areas. A package of tools, statutory and non-statutory, chosen as the best means of implementing a carefully defined strategic vision, is likely to produce the best result for these complex and sensitive areas.

<u>Akaroa area</u>

- Changing land-use patterns and increasing tourism, afforestation, marine farming, and a visible increase in lifestyle and residential development illustrate the need to actively manage the values associated with the Banks Peninsula landscape and the ecology, history and lifestyles embodied within it. In Akaroa, provision for holiday accommodation has not always been designed with the villagers' values in mind.
- The 1990s visioning exercise carried out with the communities of Banks Peninsula revealed the strong values associated with community and family, tranquility, regeneration of native bush and bird habitat, the eradication of gorse and possums and being able to achieve multiple uses of the coastal and marine areas in a compatible way. Examples of the outcomes the community sought from local government planning included that "the Peninsula maintains its clustered communities". The community listed required actions to support these outcomes, such as monitoring the effectiveness of the plans in safeguarding ridgelines and maintaining the distinction between rural and urban environments.
- Providing infrastructure to deal with development is a major concern to the community, especially in relation to roads, and water supply and wastewater disposal. Locals often expressed resentment at having to pay for the impact of tourists and holidaymakers on existing infrastructure. It is important that these limitations are dealt with strategically and in a coordinated manner, taking into account the possible consequences. For example, installing a reticulated system for wastewater and sewage to meet current requirements will also open the door to a new wave of residential development.

Alternative Approaches to Managing Settlement Growth

The UDS and the Christchurch City Plan contain policies for managing the future growth of Christchurch. However, the UDS boundaries do not include the Akaroa Harbour Basin and the PBPDP does not include a section which specifically outlines the preferred approach to growth issues. The opportunity now exists for communities to consider and decide upon preferred approaches to settlement growth into the future.

Components of growth

Growth has several components, each one with its own driving force trends:

- population growth;
- household growth (which has links with lifestyle preferences);
- economic growth: as markets change, so do the patterns of investment with consequential impacts on property values and site requirements. It should be noted that while prices increase if land supply is restricted, the release of land onto the market is controlled by the land owner, who is likely to withhold land from the market until an acceptable price can be obtained. Therefore zoning more land does not necessarily equate to increased land availability. Housing and section prices are just as likely to be affected by demand factors such as interest rates, costs of materials and real wages; and
- social growth: urban growth and decline results in costs and benefits to different social groups. Social changes affect people's incomes, employment and consequently housing.

The demand for facilities to provide for transport, recreation, residential, business and numerous other needs is an outcome of the interaction of these factors.

There are very significant costs in servicing large, disconnected areas of Greenfield land (that is, land in rural use beyond the existing areas zoned for urban activities). A well planned, staged growth pattern is the most economic and effective way to provide quality cost effective infrastructure to the community. Unplanned ad hoc growth also makes it difficult to supply convenient social and community services that help establish a sense of community.

The first step is to anticipate the range of development or growth pressures that could face the area over the planning period. In the Akaroa Harbour Basin area, housing development pressure appears to result from high prices obtained from subdivision and development of residential housing, combined with potential income from holiday home rentals. Given the trend and projections for increasing tourism (as covered in Chapter 8 of this report), these growth pressures are unlikely to abate in the foreseeable future. Our ability to establish housing in steeper and more remote locations also works against efforts to encourage more clustered housing on the lower slopes.

Growth strategies are usually based on issues such as: the protection of natural resources and important landscapes; efficient use of existing infrastructure; and the relationship between land use and transport systems. The way that subdivision is managed can affect the density of development, provision of infrastructure, pedestrian and open space linkages, and the extent to which important factors such as land stability, landscape values, vegetation, and cultural or heritage sites can be accommodated. It is also important to align subdivision with land management and catchment management issues, such as providing for ecological corridors and managing surface and ground water.

Options

There are six principal ways of distributing urban growth, each with its own set of advantages and disadvantages. A large number of matters need to be considered in terms of long-term growth options, including transport, landscape character, stormwater disposal and so on. While the focus of this section is upon urban growth, it is acknowledged that rural-residential development is a further option that is likely to require investigation and close management in the future.

1. Unrestrained growth

This option assumes no restrictions by zoning and enables subdivision and development to occur anywhere.

Table 35: *Advantages and disadvantages of unrestrained growth*

Advantages include:	Economic advantage for developers and incoming residents
	Potential increase in housing affordability if supply vastly increased
Disadvantages include:	A characterless and confused pattern of development
	Virtually impossible to co-ordinate services
	Conflict with existing rural activities
	Loss of rural character
	Loss of landscape values

2. Consolidation and minor peripheral development

Urban consolidation means increasing the number of people and dwellings that can be accommodated within the existing zoned boundary of the settlement, or developing a more compact urban form. This can be combined with small areas of urban expansion adjacent to the existing urban edge. Therefore, while the method does not necessarily entail containing the settlements within present boundaries, it also does not give rise to isolated and dispersed patterns of urban growth. The method takes a restrictive approach to subdivision outside of urban boundaries, and a more flexible approach allowing for higher densities within urban boundaries. Emphasis is placed upon tracts of vacant land within the settlement, land which for various physical reasons has been 'leap-frogged' for development (as has occurred in some settlements of the harbour basin), or land which is no longer required for its original use. Fringe development can occur by incremental expansion of existing boundaries. These may be programmed sequentially to make best use of existing sunk investment in arterial services – roads, water, sewage, etc. Consideration needs to be given to whether or not the boundary needs to be fixed for all time, or simply for the medium term.

Table 36*: Advantages and disadvantages of consolidation*

Advantages include:	Better use made of existing infrastructure and servicing (although the specific demographic characteristics of the incoming population will determine the demand for particular physical and social infrastructure)
	Public transport potential and shortening private car trips
	Energy efficiency
	Choice of development sites
Disadvantages include:	Loss of privacy and amenity through potentially higher densities of housing, with a resulting change in the character of neighbourhoods
	More traffic where there is less modal choice
	Restrictive in housing choice (and therefore affordability) and activities needing larger sites
	Potential pressures on drainage systems
	Increasing housing costs if zoned land isn't released to the market
	Increased traffic congestion effects of non-residential activities on living environment

This is the method articulated in the UDS, the Christchurch City Plan for the Christchurch urban area, and is also reflected in the deferred residential and hill slope zoning around Akaroa in the PBPDP.

A subset of this method is that of ***intensification***, or 'infill', where encouragement is given to intensifying subdivision opportunities within existing residential areas, with the prospect of moderately high residential densities being encouraged in appropriate areas. While this would achieve greater benefits associated with use of existing infrastructure and limited affects on landscape character, it may have greater disadvantages in terms of loss of residential amenity and heritage character (depending upon the settlement).

3. Divert growth to other centres (outside the harbour basin)

This option is, in effect, a 'no growth' option for the harbour basin and implies a high degree of intervention. While this option may appear to offer environmental or social advantages, it would need to be clearly justified to avoid severe challenge under the RMA. The consequences could include pressure on surrounding rural settlements and increased pressure for rural-residential development.

Table 37: *Advantages and disadvantages of diverting growth outside the harbour basin*

Advantages include:	Consolidation of existing urban area will continue
	Retention of rural character and landscape
	Retains choice development locations
	Slows down rate at which service capacities & traffic capacities will be used up
Disadvantages include:	Choice of development sites in main centre (Akaroa) limited
	Any economic effects of increased population foregone
	Potential for increase in commuter traffic, depending upon location and function of other centre
	Potential continuation of housing affordability issues

4. Edge of settlement expansion

Table 38: Advantages and disadvantages of edge of settlement expansion

Advantages include:	provides a diverse range of locations and options for new development
	opportunities to create pleasant living environment
Disadvantages include:	potential conflicts with rural resource values depending on the scale and location
	could be more costly than consolidation in terms of service provision
	for Akaroa, potential adverse effects given surrounding ridgelines and culturally important sites
	likely to limit transport options

The Council would need to carefully identify suitable areas and/or criteria for managing effects. Not a long-term option if wanting to pursue reasonably compact settlements.

5. Single growth area

Table 39: Advantages and disadvantages of a single growth area

Advantages include:	enables comprehensive plan to be prepared
	economies of scale obtained by concentrating services
	impact on rural area concentrated – leaves remainder unaltered
Disadvantages include:	same as for fringe growth
	may reduce level of housing choice or diversity

If wanting to take the pressure off Akaroa, there is the potential for one or more growth areas to be identified in the Basin, ideally located so as to consolidate existing settlements. The District Plan would need to specify the situations under which the growth area would become available for development. It will also be important to consider how to keep development from 'leap-frogging' into areas beyond the targeted area.

6. Do nothing

Table 40: Advantages and disadvantages of the do-nothing option

Advantages include:	no changes needed to planning documents
Disadvantages include:	existing areas of rural land continue to come under pressure for residential development
	limited ability to consolidate existing ad hoc pattern of urban zones within each settlement
	continuation of housing affordability issues

There are many more issues that will need to be explored in conjunction with each of these options, as identified in the earlier chapters covering the natural, physical, social and economic environment within the harbour basin. However, it is also highly relevant to identify and reflect the current regulatory framework and the aspirations of the community; these are summarised in the next section.

Current Regulatory Planning Approach

The District Plan is not yet fully operative. Appeals to its provisions are still outstanding and several rural appeals are still proceeding through the Environment Court. However, all urban appeals have been settled, providing some certainty as to the current regulatory planning approach. The summary below indicates several of the principal points of relevance to this study. For more detail, the reader is strongly advised to refer directly to the PBPDP.

Approach to urban growth

The District Plan contains two main urban zones:

- the Residential Zone, which is found in Akaroa, Duvauchelle (and Robinsons Bay at Ngaio Grove) and part of Wainui; and
- the Small Settlement Zone, in Wainui, Tikao Bay, French Farm, Barrys Bay, Robinsons Bay and Takamatua.

The District Plan notes that development pressure comes largely from the expansion of the existing settlements in the district and from an increasing demand for a range of lifestyle opportunities in rural and coastal areas.

Certain effects of this development pressure are observed:

- Increasing urbanisation is considered to pose an increasing risk to water quality. Greater run-off is created through the clearance of vegetation and an increase in hard surfaces. Where on-site systems of effluent disposal such as septic tanks are used there is the potential for contamination of ground, surface and coastal waters.
- There is concern noted that valued environmental and amenity standards are being compromised by poorly managed development.

The District Plan notes, as an issue, that unmanaged development may compromise natural and physical resources and the wider environment, and also states that demand for residential living opportunities is expected to increase across the district in the future. However, reliance appears to be principally placed upon the use of zone boundaries to indicate the current urban settlement pattern, and the implementation of zone objectives and policies to limit urban development elsewhere. There are no objectives and policies such as those contained within the Christchurch City Plan outlining a preferred approach or direction for any longer term change in the urban settlement pattern. It is interesting to note that the 1988 District Scheme encouraged major growth only at Duvauchelle and Wainui, and any rezoning at Takamatua would only occur after Duvauchelle and Wainui were fully developed. Consolidation around existing development was encouraged. This approach was not carried forward to the current District Plan, possibly in reflection of the planning philosophy at the time the Plan was adopted.

Residential Zones

Sites within Residential Zones are required to be serviced by a reticulated sewage system and water supply. The anticipated density as reflected in the zone rules is for 1 dwelling per 400sqm site.

<u>Akaroa</u>
The District Plan describes the importance of Akaroa's place in history as the first planned township in the South Island, with the South Island's first post office, police force, magistrate and customs house. Akaroa has developed as a popular visitor destination, with a high proportion of holiday homes and absentee owners.

Opportunities for future expansion of Akaroa beyond those areas currently zoned residential are considered tin the District Plan to be limited by physical constraints such as slope, stability, and the ability to service sites with potable water and reticulated effluent disposal. Potential adverse effects of expansion can include:

- the risk of natural hazards;
- impacts of development on natural features and ecosystems; and
- the potential to adversely affect essential infrastructure such as the district's transport network.

The District Plan also states that the desire of the community to retain the distinctive form and character of Akaroa is an additional constraint on outward expansion.

These matters are reflected in the stated 'Issue', that "uncontrolled expansion of residential areas at the outer edge of the Akaroa residential area could detract from the distinctive landscape and rural character and compromise the existing compact form and character of the settlement". An associated policy states that: "the edge of residential areas will be precisely defined and identified in order to maintain the form of settlements". This policy exemplifies the comment above and indicates that reliance is placed upon zone boundaries, with a long-term focus being the

maintenance of existing settlement edges. The intent of this policy is to ensure that the rural-urban boundaries are not blurred by unconsolidated residential expansion.

There is a 'method' included within the District Plan which states that the physical extent of areas zoned for residential use in Akaroa will not be enlarged. However, the ability for individuals to apply for consent to develop residential activity beyond the existing urban edge is not limited by a 'prohibited activity' status or a strong policy in this regard so the ability to give effect to this method appears to be principally upon Rural Zone provisions.

Other settlements with residential zoning

The District Plan is silent on the partially developed residential land at Wainui and at Duvauchelle/Robinsons Bay, other than in relation to the matters noted above. It can be observed however that the proposed reticulated wastewater system for Wainui has the potential to increase pressure for residential zoning within the settlement.

Undeveloped, residentially-zoned land in Wainui

Small Settlement Zones

The Small Settlements are different in scale and character from areas in the Residential Zone and were formerly zoned Rural 2. In the past, many of these areas were characterised by farming, market gardening and orcharding. The number of dwellings which are used as holiday homes only is a distinctive feature of the zone. With the exception of Tikao Bay, there is limited general urban infrastructure in the Small Settlement areas.

Small Settlement areas are distinct from other residential areas in that they have lower density of development (one dwelling per 1000sqm site area) and few non-residential activities have been established. They are also distinguished from Residential Zones in that they generally have some form of reticulated service (sewerage or water supply) but not both.

Future development

The District Plan acknowledges that there is capacity to sustain further residential development within the areas zoned for development in the smaller settlements. However, it cautions that any such development should not place unsustainable demands on local infrastructure or compromise sensitive areas of high environmental value. This comment suggests that existing zoning does not necessarily reflect actual capacity, if servicing of that zone is not possible or planned. Indeed, the document observes that the future development of the small settlements will be influenced by the services available, and improvements on sewage disposal systems, both reticulated or on site.

When providing for future development, the District Plan states that it will be necessary to:

- protect the valued environmental and amenity standards and character of the settlement areas and their surrounds, including potential impact on natural landscapes; and
- accommodate the effects of on-site sewage: the 'plume of influence' (the area affected by seepage from a septic tank) must be retained on the property.

Takamatua and Robinsons Bay settlements include 'Comprehensive Development Sites', whose amenity is based on a low intensity and scale of buildings and a general absence of non-residential activity. The minimum subdivision size at Takamatua is 1500sqm, compared with 1000sqm in other Small Settlement Zones.

Residential activity in other zones

Akaroa also has an 'Akaroa Hill Slopes Zone' and a 'Residential Conservation Zone'. Residential activity is also provided for in other zones in the harbour basin, such as the Town Centre Zone, and naturally a very low level of residential activity is anticipated within Rural Zones. There is also an increasing demand for residential opportunities in rural areas. The District Plan makes some provision for this through the use of a 'floating' Rural-Residential Zone; that is, it may be applied to various areas following rigorous assessment of an application lodged with the Council.

Akaroa Hill Slopes

The land surrounding Akaroa is characterised by steep spurs which extend towards the town from the elevated hills in the south east. Many of these spurs are clad in regenerating native bush. The Akaroa Hill Slopes Zone applies to the hill slopes around Akaroa. These slopes are important in defining the landscape character of Akaroa Township and its surroundings. They physically contain the town and provide it with a distinct 'edge'.

The District Plan acknowledges that there is increasing pressure for residential development on the Akaroa Hill Slopes. The highly visible nature of the zone makes it important that buildings do not dominate the natural landscape qualities. In addition, the land in the zone is generally prone to soil and slope instability. This can result in slips and adverse effects on water bodies.

An 'issue' noted in that Plan is that an increase in the density of buildings on the hill slopes above Akaroa Township may compromise landscape values. For this reason, the erection of dwellings is not permitted as of right, but is categorised as a 'restricted discretionary activity' and therefore subject to scrutiny through the resource consent process. Site density requirements specify that there is to be no more than 1 dwelling per 5000sqm.

The hill slopes behind Akaroa Township (Photo courtesy of Boffa Miskell Ltd)

Community Aspirations

All communities are comprised of a number of groups and individuals, each with viewpoints about the way their neighbourhood looks and functions. These views are not always consistent with one another and some people may be more experienced at articulating their views than others. In developing various plans, a Council is charged with consulting its communities and developing plans that reflect the general aspirations of the public while recognising that, in some instances, not all individual members of that community will agree. Several plans developed by the former BPDC give an indication of the 'on balance' views of the community and the direction that the council wished to take for managing change into the future.

Direction indicated by various plans

A Place of your Own: A vision for the future of Banks Peninsula District

This document was prepared ten years ago, and was developed with the intent to serve as a guide to all plan creation and decision-making. It noted shifting trends in land use, which has seen the break-up of some of the large landholdings, an increase in production forestry and an interest in small scale horticulture, viticulture and other intensive land uses catering for specialist markets. It also notes that there are fears that population increase, obtrusive tourism and loss of community will affect some areas, while population decline and loss of income and employment opportunities will affect others. The management of the impacts of tourism and development and the provision of basic services for health, education and general household needs are ongoing issues.

The plan articulates the community's 'vision' for various settlements, indicating how residents would like to see those settlements in the future.

The Vision for Akaroa for 2030 includes:

- a predominantly pedestrian centre;
- a renowned education and learning centre;
- a village atmosphere; and
- a town that merges with the rural surroundings.

The Vision for Duvauchelle in 2030 involves:

- it being one of the small clustered communities;
- low structures and low density development;
- the settlement being largely independent of public services;
- affordable living for families and workers;
- education and recreation services here and in Akaroa attract young people to the community;
- accommodation for visitors ranges from resort hotels to lodges, retreats and farm stays;
- an increased population and more work; and
- a rural community.

Actions developed by the Plan include encouraging appropriate growth of permanent populations to support essential services, including schools and district medical facilities. A highly relevant goal for this study is Goal 3B: "The Peninsula maintains its clustered communities". Actions associated with this include:

- recognising that ribbon development is not an acceptable settlement process for the Peninsula; and
- ensuring the provisions of the District Plan maintain the distinction of rural and urban environments, allowing for controlled growth in small settlement areas, and maintaining the basic geographic size of the larger settlement areas of Lyttelton and Akaroa.

Goal 3C is more specific and aims for development to be "in sympathy with the character of the area and the surroundings".

Strategic Plan 2002 – 2012

This plan applies to all of the Banks Peninsula area and includes a section entitled 'Residential Property Development Strategies', which includes a goal of "… increasing the number of properties (especially in the …, Duvauchelle and Takamatua areas) within the areas already available for residential development". Specific actions and intended outcomes include the following:

Akaroa:

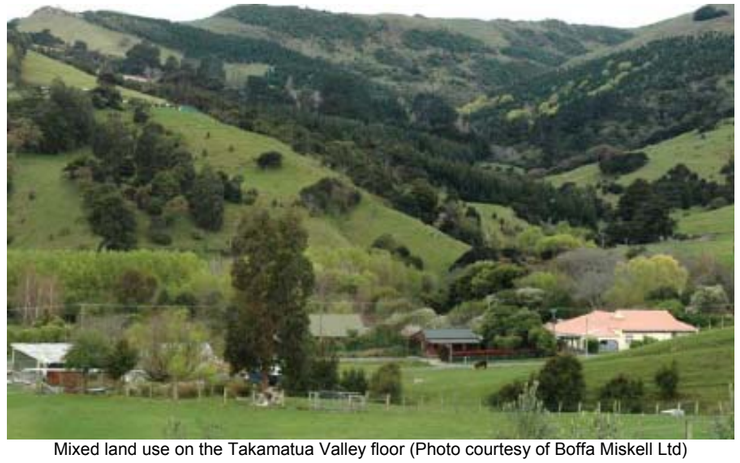
- ensure the area is attractive to retired people; and
- implement a sustainable water availability solution.

Duvauchelle:

- attract property investments and economic activity in the area; and
- promote Duvauchelle.

Takamatua:

- attract property investments and economic activity in the area; and
- promote Takamatua.



Mixed land use on the Takamatua Valley floor (Photo courtesy of Boffa Miskell Ltd)

Strategic Economic Development Plan 2005 - 2015

This plan notes that of the approx 7,850 people living in Banks Peninsula, only about 600 live in Akaroa, which receives by far Banks Peninsula's largest tourist numbers. Akaroa visitor numbers are expected to grow by 50% in the next five years. An important issue identified in the plan was that of land utilisation. The plan states that as a strategic objective: "develop clusters of residential development according to the objectives and policies to support vibrant communities on the Peninsula." This indicates that urban growth options of 'unrestrained growth' and 'do nothing' are not considered appropriate.

Feedback from individuals

As noted above, plans which are developed via consultation often give the best agreed direction to settlement development. However, it is also relevant to consider feedback from individuals to various processes. The following comments have been sourced:

Annual plan submissions

The submissions to the last annual plan for the area prior to amalgamation with Christchurch City identified only a couple of matters relevant to urban growth management:

- Submission supporting limitations on section sizes in Wainui to ensure they can sustain their own sewage systems; and
- A submission opposing the provision of policies that promote population growth.

Ecological engineering workshop

In 2001, a workshop was held at Lincoln which addressed 'ecological engineering' potential for Banks Peninsula communities. This identified key issues as including the burden of irregular and segregated settlements and its structure.

Issues associated with managing urban change

Urban planning factor	*Issues*	*Flow-on effects*
Population and dwelling trends	The resident population is stable overall, while dwelling and visitor numbers are increasing. A continuation of this trend potentially results in: • a reduced ability to service the high season population in terms of business facilities, health services, etc; • a reduced sense of community identity for residents if the majority of houses are holiday homes; • infrastructure issues at peak population times; and • pressure to develop housing in inappropriate or sensitive locations.	• Adverse effects on tourism industry. • Negative community outcomes. • Infrastructure (and potential environmental) costs. • Deterioration in landscape, vegetation, heritage and cultural qualities (with associated negative outcomes for the environment and the economy); and costs associated with development in unstable or hazard-prone areas.
Capacity for urban growth	The existing undeveloped or underdeveloped areas zoned for residential activity may not be located in an area of actual/potential demand, or be capable of servicing with infrastructure.	Land remains vacant while pressure continues to be applied elsewhere.
Preferred settlement pattern	Many of the settlements are comprised of 'pockets' of urban zoning interspersed with rural land. A continuation of this trend would give rise to an ad hoc and scattered urban settlement pattern.	A scattered settlement pattern may be inefficient to service, has greater potential to fragment landscapes, and would not meet community aspirations to maintain clustered communities.
	The District Plan does not articulate a preferred settlement pattern to manage long-term urban change, relying instead on the existing zone boundaries and their associated provisions; this: • can result in reactive rather than proactive planning; and • opens up potentially inappropriate development options.	Potentially inappropriate settlement patterns may result, with effects upon character, amenity, biodiversity, infrastructure, landscape, etc.
	The 'floating' nature of the Rural-Residential Zone provides for its potential application to rural portions of settlement study areas between pockets of urban zoning. This may or may not be the most efficient use of land.	• Potential subsequent pressure for rezoning to residential; • Subdivision pattern may foreclose options for more efficient residential use; • Impacts upon adjoining residential areas (eg transport, stormwater) if not carefully managed.

Information requirements for managing urban change

- Statistical data and analysis of inward migration, latest population projections; unoccupied dwellings; holiday homes.
- Stability and servicing of existing vacant urban zoned land.
- Market information of current and anticipated residential demand.
- Sieve mapping exercise to determine long term opportunities and constraints for various urban growth management options.
- Analysis of growth options in light of sieve mapping exercise.

Changing land use and development - land being developed at Ngaio Point as part of a new subdivision.

10. RELEVANT LEGISLATION AND GUIDING DOCUMENTS

The former BPDC, the Christchurch City Council and Environment Canterbury have a number of strategies, policies and plans which will impact on the current and future development of settlements within the Akaroa Harbour Basin. Some policies are very high level, strategic documents and others will relate better to the more detailed, site-specific issues that may arise following completion of the strategic study. Other statutory authorities also have policy documents that may be relevant to the settlements.

This chapter is divided in two parts. The first part examines the role of the Local Government Act 2002 (LGA) and the Resource Management Act 1991 (RMA) in requiring local authorities to prepare planning documents in order to promote sustainability through environmental and community well-being. The second part of this chapter looks at other Council and non-Council strategies, policies and plans that will also affect how the resources of the Akaroa harbour settlements are managed.

Relevant Legislation and Related Documents

Local Government Act 2002 (LGA)

This Act requires local authorities to play a broad role in promoting the social, economic, environmental and cultural well-being of their communities, taking a sustainable development approach. It includes a requirement for local authorities to facilitate a process with their communities to identify Community Outcomes for the intermediate and long-term future of the district or region.

Community outcomes

Identifying Community Outcomes is designed to promote better co-ordination and application of community resources, and inform and guide priorities for activities undertaken by local authorities and other organisations. The Banks Peninsula Community Outcomes (2006-2012) were reviewed in preparation of the Community Outcomes for the Christchurch City Council 'Our Community Plan 2006 – 2016' (including Banks Peninsula), which are outlined below:

A safe city **-** We live free from crime, violence, abuse and injury. We are safe at home and in the community. Risks from hazards are managed and mitigated.

A city of people who value and protect the natural environment **-** Our lifestyles reflect our commitment to guardianship of the natural environment in and around Christchurch. We actively work to protect, enhance and restore our environment for future generations.

A city of inclusive and diverse communities **-** Our diversity is seen, heard, valued and celebrated. All people feel a sense of belonging and participate in the community.

A well-governed city **-** Our values and ideas are reflected in the actions of our decision-makers. Our decision-makers manage public funds responsibly, respond to current needs and plan for the future.

A prosperous city **-** We have a strong economy that is based on a range of successful and innovative businesses. We value sustainable wealth creation, invest in ourselves and our future.

A healthy city **-** We live long, healthy and happy lives

A city for recreation, fun and creativity **-** We value leisure time and recognise that the arts, sports and other recreational activities contribute to our economy, identity, health and well-being.

A city of lifelong learning **-** Our learning opportunities help us to participate in the community and the economy. Quality education is available for people of all ages.

An attractive and well-designed city **-** Christchurch has a vibrant centre, attractive neighbourhoods and well-designed transport networks. Our lifestyles and heritage are enhanced by our urban environment.

Christchurch City Council's Long-Term Council Community Plan (LTCCP)

The LGA also requires the Christchurch City Council to prepare a ten-year LTCCP which describes the community outcomes and priorities and the activities the local authority will undertake to contribute to these outcomes. Christchurch City Council's LTCCP 2006-2016 provides information on the Council's key policies and describes linkages between activities and how they are funded. Any decisions/actions/activities arising out of this strategic study must be in line with the direction provided by Christchurch's Community Outcomes and the LTCCP

Development Contributions Policy (DCP)

In June, a Development Contributions Policy detailing the process for collecting development contributions (DCs) was adopted by the Council as part of the 2007 amendments to the LTCCP 2006-16. Development contributions are contributions from developers of cash and/or land to fund the additional demand for community facilities created as a result of growth. DCs may be required in relation to a development if it requires new or additional assets of increased capacity and the Council incurs capital expenditure to provide reserves, network infrastructure (eg water supply, wastewater collection and treatment, surface water management and transport), and community infrastructure (eg leisure facilities).

Under the DCP, the unit of demand used to calculate DCs in respect of both residential and non-residential development is the 'household unit equivalent' (HUE). Funding from DCs is then distributed across the City and Peninsula according to 'catchments'. A single, city-wide growth catchment has been adopted for each of the activities of reserves, water supply, wastewater collection and treatment, and transport. This effectively means that any growth-related development in Banks Peninsula settlements will be subsidised to varying degrees by DCs obtained from elsewhere in the City. DCs for surface water management and leisure facilities have local rather than city-wide catchments, with the study area lying within the 'Akaroa' and 'Akaroa-Wairewa' growth catchments respectively.

Development contributions in Banks Peninsula:

DCs required for any developments on Banks Peninsula are calculated as follows:

- Reserves: $13,806.00 incl. GST per HUE;
- Network infrastructure:
  - Water supply $2,579.05 incl. GST per HUE
  - Wastewater collection $2,714.00 incl. GST per HUE
  - Wastewater treatment and disposal $4,982.66 incl. GST per HUE
  - Surface water management $0.00 (whilst the catchments have been identified, the DCs for these will be imposed in future reviews of the DCP); and
- Community infrastructure:
  - Leisure facilities $0.00 (whilst the catchments have been identified, the DCs for these will be imposed in future reviews of the DCP)

Transitional discounts apply on the proposed increase to DCs for network and community infrastructure of 57% in 07/08 and 28% in 08/09. Some exceptions to these charges are provided for in the policy, for example an alternative negotiated payment between the developer and the Council in specified circumstances.

Activities for which development contributions will be used:

Development contributions for *reserves* will be used for:

- The expansion of the reserves assets portfolio, through the continued purchase and vesting of new reserves through subdivision; and
- The development of reserves and levels of service provided to meet new needs.

Development contributions for *network infrastructure* will be used for:

- Water supply:
  - The ongoing city-wide upgrade in capacity of the network of water supply pipes and pumping stations.
  - Capital works to provide additional reservoir and pump station capacity.
- Wastewater collection, treatment and disposal:
  - The ongoing city-wide upgrade in capacity of the network of pipes and pumps.
  - The ongoing upgrade in capacity of WWTPs.

- Transport:
  - The ongoing city-wide upgrades of roads, public transport facilities, cycle ways and pedestrian walkways to facilitate growth. Currently there are no projects in the Akaroa Harbour Basin for which DCs will be allocated. This may change when the DCP is reviewed in 2009.

Please note that both the LTCCP and DCP define 'city-wide' as including both Christchurch City and Banks Peninsula.

It is intended that the DCP will be reviewed every three years, with the next review being 2009 in line with the review of the LTCCP. These reviews may provide DCs for the following additional activities which will affect developments in Akaroa Harbour Basin:

- *network infrastructure:*
  - other transport infrastructure, including additional cycle ways and safety improvement works; and
- *community infrastructure:*
  - other infrastructure on reserves;
  - sporting facilities;
  - swimming pools;
  - community halls; and
  - libraries.

Development contributions and financial contributions under the RMA:
Development contributions are distinct from, and in addition to, financial contributions (cash, land or a combination of these) for works and services required under the RMA. Financial contributions are contributions that can be imposed under the RMA where provided for by the district plan and included as a condition of a resource consent. The Council cannot collect development and financial contributions for the same purpose. The financial contributions in the PBPDP are not operative or enforced and will be the subject of a proposed variation to align them with the Council's approach to development and financial contributions.

Resource Management Act 1991 (RMA)

The purpose of the RMA is the sustainable management of natural and physical resources. 'Sustainable management' is to be interpreted as *"managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –*

a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
c) avoiding, remedying, or mitigating any adverse effects of activities on the environment".

Local authorities put the purpose and principles of the Act into action by producing district/city plans and regional plans and policy statements which identify resource management issues and the objectives, policies and methods for managing these issues. Rules in district and regional plans determine whether a resource consent is necessary for activities that will affect natural and physical resources such as land, air, water and the coastal environment. Below are the relevant RMA planning documents that affect land use activities in the harbour basin. These plans, policy statements and standards are presented in a hierarchy form, going from the district to the regional and eventually the national level. Plans or policy statements at a 'lower' level (eg district or regional) can not be inconsistent with the higher level planning documents (eg regional or national level). For example, the objectives, policies and rules in the PBPDP must be consistent with, and enforce, the regional and national level planning documents (eg – the NZCPS).

Proposed Banks Peninsula District Plan (PBPDP)
The PBPDP was developed by the former BPDC in order to achieve integrated management related to the effects of use, development or protection of land and the associated natural and physical resources of the District. This plan includes objectives, policies and/or rules dealing with:

- the coastal environment on the landward side of the MHWS;
- outstanding natural features and landscapes;
- areas of significant indigenous vegetation;
- cultural heritage;
- notable trees;
- land use zoning (eg residential, rural, industrial etc.); and
- subdivision.

Parts of the District Plan are subject to appeal. This includes appeals relating to: coastal land forms; the identification of outstanding natural features and landscapes; and the protection of significant indigenous vegetation, wildlife habitats and ecosystems.

Regional Coastal Environment Plan (Environment Canterbury)
This plan promotes the sustainable and integrated management of natural and physical resources of the coastal environment. It sets out issues relating to the protection and enhancement of the coast, water quality, controls on activities and structures and coastal hazards.

Proposed Natural Resources Regional Plan (Environment Canterbury)
The Proposed NRRP assists ECan to carry out several of the functions set out in section 30 of the RMA. These relate to: the integrated management of the region's natural and physical resources; effects of the use of land; soil conservation; water quality and quantity; air quality; natural hazards; and hazardous substances.

Canterbury Regional Policy Statement (Environment Canterbury)
Environment Canterbury's CRPS (1998) provides an overview of the resource management issues of Canterbury. It sets out how natural and physical resources are to be managed in an integrated way with the aim of sustainable management. Now almost ten years old, the CRPS is under review to take into account climate change issues, the implementation of the UDS and relevant court decisions and legislation changes.

New Zealand Coastal Policy Statement (Department of Conservation)
DoC is responsible for NZCPS, which is the only mandatory National Policy Statement under the RMA. The NZCPS sets out policies regarding the management of natural and physical resources in the coastal environment. Local authorities are required by the RMA to give effect to the NZCPS through their plans and policy statements. The DoC is currently reviewing the NZCPS as part of the statutory requirement under the RMA.

National Environmental Standards (Ministry for the Environment)
The RMA provides a process for developing National Environmental Standards (NES) for certain purposes prescribed in the Act. These are developed by the Ministry for the Environment and are enforced as regulations. The only NES in force at the moment is an Air Quality Standard, however NESs that are currently in development include standards for:

- *Human drinking water sources.* This standard is intended to reduce the risk of contaminating drinking water sources. It will do this by requiring regional councils to consider the effects of activities on drinking water sources in their decision making.
- *Telecommunications devices*. These standards will be explicit or quantitative standards related to radio-frequency fields and telecommunications facilities, such as street side cabinets, that may otherwise require resource consent from some local councils.
- *Electricity transmission.* This standard would provide for the efficient use, maintenance and upgrading of the existing transmission network by specifying that certain activities can be undertaken without resource consent and specifying resource consent categories for other activities.

Other NESs which are being scoped for development include standards for cleaning up *contaminated land* and for the inspection and management of *on-site wastewater systems*.

Other Relevant Strategic Documents

Aside from planning documents required under the LGA and RMA, there are a number of other strategies, policies and plans that are relevant to this study. Most of these documents have been referred to, where relevant, within the chapters of this report. Other strategies are in development or at a proposed stage and may have more relevance at a later date.

Christchurch City Council

Memorandum of Understanding (MOU) between the former Banks Peninsula District Council and Christchurch City Council
A MOU between the former BPDC and Christchurch City Council (October 2006) captures the general principles concerning service commitments to Banks Peninsula residents which were not covered by the scheme put forward by the Local Government Commission. The MOU also recognises the unique environmental, cultural and heritage

values of Banks Peninsula and promises that special regard will be paid to Peninsula community aspirations, as expressed in the Banks Peninsula District Council 2004-2014 Community Plan.

In terms of service delivery, the Councils agreed that levels of service on Banks Peninsula would be ring-fenced for five years following the reorganisation. In the interests of consistency and efficiency, the MOU states that the City Council will gradually align services with those it provides for city residents. Where the exact mirroring of existing city services may be impractical or inefficient, it is recognised that the City Council will work with Peninsula communities to develop mutually acceptable and practical outcomes.

Current strategies, policies and plans

***Table 41**: Existing Christchurch City Council policy documents*

Policy document	Purpose/relevance
Strengthening Communities Strategy	The framework to guide Council's contribution, as a strategic partner, for developing strong communities.
Visitor Strategy	A strategic framework around management of the visitor industry to achieve long-term benefits and reduce impacts on communities.
Social Housing Strategy	Planning the Council's future roles and priorities in the social housing area for the next 10 years.
Greater Christchurch Urban Development Strategy (UDS)	This strategy, developed collaboratively by the Christchurch City Council, Waimakariri District Council, Selwyn District Council, ECan and Transit New Zealand, provides a clear strategic direction of how greater Christchurch will develop over the next 35 years. The implementation of this strategy may indirectly affect future land development and other activities in the Akaroa Harbour Basin.
CCC/BPDC reserve management plans	These plans, managed by Reserve Management committees, will now be developed into action plans to direct and prioritise the capital programme.

Strategies, policies and plans in development

***Table 42:** Christchurch City Council policy documents – draft or underway*

Policy document	Purpose/relevance
Sustainable Energy Strategy	A strategic framework for sustainable energy in Christchurch. This includes increasing awareness and building partnerships on energy issues, developing city-wide energy programmes and providing leadership on energy efficiency and renewable energy.
Surface Water Strategy	A strategy to assist in achieving the sustainable management of surface water resources. This includes springs, rivers, streams, creeks and stormwater.
Open Space Strategy	A strategy to provide a strategic planning framework for meeting future open space needs and ensuring its sustainable management.
Biodiversity Strategy – Christchurch and Banks Peninsula	A strategic framework to guide planning, implementation and management of Banks Peninsula and Christchurch's indigenous biodiversity.
Sustainability Policy	The sustainability policy will bring the environmental, social and economic elements of sustainability together in an over-arching policy framework for the Council.
Water Supply Strategy	A strategy for ensuring a reliable, high quality water supply for Christchurch/Banks Peninsula Area and providing safe and secure supplies for rural communities.
Commercial Strategy	A strategy setting the direction of future commercial growth in the Christchurch City and Banks Peninsula.
Libraries 2025	A strategy which will enable the Council to decide on appropriate developments, refurbishment and maintenance of its library network over a 20 year period.
Community Facilities Network Plan	This Plan will focus on developing a network of multi-functional facilities, distributed equitably across the city. The needs of Banks Peninsula will be considered independently as part of this Plan.

New Zealand Urban Design Protocol

The Christchurch City Council is a signatory of the *New Zealand Urban Design Protocol*, launched by the Ministry for the Environment in 2005 (further details on this Protocol can be found in Chapter 4 – Subdivision and Land Use within Settlements). The Urban Design Protocol aims to make our towns and cities more successful by using quality urban design to help them become:

- competitive places that thrive economically and facilitate creativity and innovation;
- liveable places that provide a choice of housing, work and lifestyle options;
- a healthy environment that sustains people and nature;
- inclusive places that offer opportunities for all citizens;
- distinctive places that have a strong identify and sense of place; and
- well-governed places that have a shared vision and sense of direction.

The Protocol identifies seven essential design qualities:

- *context*: seeing that buildings, places and spaces are part of the whole town or city;
- *character*: reflecting and enhancing the distinctive character, heritage and identity of our urban environment;
- *choice*: ensuring diversity and choice for people;
- *connections*: enhancing how different networks link together for people;
- *creativity*: encouraging innovative and imaginative solutions;
- *custodianship*: ensuring design is environmentally sustainable, safe and healthy; and
- *collaboration*: communicating and sharing knowledge across sectors, professions and with communities.

Banks Peninsula District Council

Strategies, policies and plans

***Table 43:** Existing BPDC policy documents*

Policy document	Purpose/relevance
Strategic Plan 2002-2012	A plan outlining how the Council will contribute to the development of a sustainable district. The focus of this plan is the development of strategies designed to stimulate, support and encourage economic growth.
Strategic Economic Development Plan 2005-2015	Plan for BPDC's role in promoting and facilitating economic development taking into account the principles of 'environment and character' and 'social and cultural inclusion'
Water Supply Activity Management Plan	The purpose of this plan is to ensure that satisfactory piped water supply is available for all residential, commercial and industrial buildings within serviced areas.
Roading Policy	A policy for achieving the District Council's objective of providing 'a safe, convenient, comfortable and cost effective roading system for the movement of people, goods and vehicles, designed, managed and maintained to specified standards'.
Draft Walkway and Cycling Strategy 2005 (proposed)	A strategy to help advance walking and cycling activities in Banks Peninsula.

Bylaws

Whilst all Banks Peninsula bylaws are relevant to the study area in some way, most are more relevant in managing day-to-day or site-specific activities (eg dog control and itinerant trading) rather than having any strategic influence. As the provision of wastewater and water supply infrastructure are strategic issues, the following bylaws will have some relevance to this study in terms of providing connections in areas suitable for development:

***Table 44:** Relevant bylaws*

Bylaw	Purpose/relevance
Banks Peninsula District Council Wastewater Drainage Bylaw 2000	This bylaw covers the discharge of domestic wastewater into Banks Peninsula sewerage systems. It also outlines the responsibilities of developers in providing connections in new subdivisions.
Banks Peninsula District Council Water Supply Bylaw 1998	This bylaw has details of water supply schemes and any special requirements (eg storage tanks), as well as information on levels of service, conservation of water and the protection of water supplies.

The Council is currently in the process of reviewing all Banks Peninsula bylaws as required by section 155 of the LGA. This Act requires that the Council is satisfied that a bylaw is necessary, or there is a justified, reasoned need for them, and there are no other legislative provisions (eg government law) in place that deal with the perceived problem or issue.

Environment Canterbury

Several of ECan's documents are referred to above. Additional documents include the following:

***Table 45**: Environment Canterbury - other documents*

Policy document	Purpose/relevance
Canterbury Regional Land Transport Strategy 2005-2015	The guiding document for the development of transport in Canterbury. It describes trends in transport, the land transport needs of the region and how those needs are met.

Department of Conservation

***Table 46**: Department of Conservation - other policy documents*

Policy document	Purpose/relevance
Canterbury Conservation Management Strategy	A 10-year regional strategy that provides an overview of conservation issues and implements policies and objectives for the integrated management of natural and historic resources, and for recreation, tourism and any other conservation purposes.

Other agencies/authorities

Various other authorities and organisations (such as the Ministry of Education and Ngai Tahu) have various policy documents which have not been traversed as part of this exercise. Where relevant, these will be considered as the settlement study progresses.

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APPENDIX A – SUBDIVISION / LAND USE WITHIN SETTLEMENTS

Chapter 9 discussed subdivision and land use patterns within the settlement study areas. Tables that provide more details on these matters are provided below.

Wainui

Zone	Locations		Key features
Residential	One large area	Focused around Cemetery Road, Seaview Lane, Whareora Tce	Only partly subdivided and developed.
	Eight small pockets	Warnerville Road, at end of formed road	Majority contain a dwelling. Allotment sizes range from approx 550sqm to 1450sqm. Most appear to be around 850sqm.
		Wainui Main Road, North of Stanbury Reserve	
		Wainui Main Road, South of Stanbury Reserve	
		Wainui Main Road, North of intersection with Wainui Valley Road	
		Wainui Main Road, South of intersection with Wainui Valley Road	
		Wainui Valley Road	
		Wainui Main Road, intersection and access from Jubilee Road	
		Bossu Road	
Reserves, other open space	Wainui Main Road	Seaward side of road	Reserve (understood some privately owned).
		Adjacent residential subdivision, including Stanbury Reserve	
	Wainui Valley Road	Adjacent tennis court, church	
	Cemetery Road	Intersection Cemetery and Warnerville Roads	Cemetery
Rural	Wainui Valley	Either side of Wainui Valley Road	Several smaller allotments (from approx 500sqm to 0.4ha.) with urban activity. Non-rural land use includes: tennis court; church; houses, (including B&B and lifestyle block); YMCA.
	Wainui	Above the valley floor	Larger allotments (ranging from around 7ha to 60+ha). Some allotment boundary adjustment currently in train, providing for building platforms on lower slopes.

Tikao Bay

Zone	Locations		Key features
Small Settlement	One pocket	Located either side of Tikao Bay Road in narrow valley.	Majority/all contain a dwelling. Some (approx 0.3ha) allotments to north of road extend back through hilly bush area. The subdivision size ranges from approximately 170sqm to 0.5ha
Rural	Tikao Valley		Rural activity or bush cover. Forest cover principally behind houses to north of settlement and along coastline. The two properties either side of Tikao Bay Road and adjacent to the urban zoning are 2.4ha and 8.3ha.

French Farm

Zone	Locations		Key features
Small Settlement	Three pockets	Northern headland	Houses on most allotments, with allotment size ranging from approx 800sqm to 1940sqm, with most being between 800-900sqm.
		Inner bay	
		Valley south	
Reserves, other open space	One small reserve	Inner bay	Within residential pocket.
Rural	Headland	North of settlement	Lifestyle housing within bush cover. Three smaller allotments ranging from approx 1400sqm to 7800sqm. Balance in medium to large rural allotments.
	Valley floor	Inner bay	Concentration of non-rural activity around urban zone, all comprising housing. Smaller allotments ranging from approx 1000sqm to 4100sqm. Balance in medium to large rural allotments.

Barrys Bay

Zone	Locations		Key features
Small Settlement	Two pockets	Intersection SH75 and Wainui Main Road	Three small allotments approx 780sqm, each with a dwelling.
		Barrys Bay Valley Road	Nine allotments, most or all with a dwelling, ranging from approx 850 to 3300sqm.
Reserves, other open space	One reserve	Intersection SH75 and Wainui Main Road	Vegetation and dwelling on part of a larger 8500sqm site.
Rural	Valley floor	Adjacent to small settlement on Barrys Bay Valley Road	A number of small allotments; only one appears to have a dwelling.
		Vicinity of Intersection SH75 and Wainui Main Road	Several smaller allotments, size ranging from approx 900sqm to 1ha (containing a cheese factory, some dwellings).
		Balance of rural area	Larger rural lots approx 16 – 20ha.

Duvauchelle

Zone	Locations		Key features
Residential	Inner bay	Intersection SH 75 and Onawe Flat Road	Several regular sized allotments (approx 1900sqm) with houses fronting Onawe Flat Road and vegetated slopes behind. Hotel at intersection (1ha approx). Business activity (petrol station) fronting SH75.
		Pawsons Valley Road	Residential activity on larger allotments (eg 4000sqm) with subdivision and development occurring down to 400sqm. Primary school, electricity designation.
	Headland	Seafield Road to Ngaio Point	More recent subdivision pattern: smallest sites between 500-600sqm, but most larger, averaging around 1000sqm. Three large unsubdivided allotments between 2 and 3 hectares each.
Reserves, other open space	Inner bay	Central Duvauchelle	Golf course (including clubrooms) / showground and the Duvauchelle Community Centre.
	Headland	Seafield Road	2.9 ha reserve
		SH75 to Bayview Cres	0.65ha reserve
		End Bayview Cres	0.25ha reserve, providing a link to the coastal walkway.
		Adjacent Ngaio Point subdivision	Cemetery
Rural	Settlement hinterland	West bay	sale yards site, refuse disposal and transfer station. Balance in larger rural allotments.
		Pipers Valley Road	A couple of lifestyle blocks.

Robinsons Bay

Zone	Locations		Key features
Residential	Headland	Ngaio Grove	The subdivision sits between Duvauchelle and Robinsons Bay, and allotments range between approx 550sqm and 1000sqm. All/most contain a dwelling.
Small Settlement	Headland	Archdalls Road	Lower slopes subdivided to between approx 1000 – 4000sqm, most with a dwelling established. A large tract of land presently undeveloped (approx 5ha) – a Comprehensive Development Area.
	Innerbay	Intersection SH75 and Robinsons Bay Valley Rd	Small pocket of seven allotments, between approx 780sqm and 910sqm, most with a dwelling.
	Clifftop south	SH75 toward Armstrongs Point	13 allotments, ranging between approx 420 and 3700sqm, but mostly being around 1000sqm. Only the larger allotments contain dwellings.
Reserves, other open space	Inner bay	Off School Road	7800sqm recreation reserve
Rural	Inner bay hinterland	School Road / Robinsons Bay Valley Road area	Several smaller rural allotments, ranging between approx 1.3 and 3 hectares.
		Balance of rural area	Medium to larger rural allotments.
	Headland	Ngaio Point	Narrow strip separating Duvauchelle from Robinsons Bay on the southeast side of the ridge – doesn't follow property boundaries and cuts through Ngaio Point allotments.

Takamatua

Zone	Locations		Key features
Small Settlement	Inner valley	Takamatua Valley Road, up Kotlowski Road	18, regular-shaped allotments, generally between approx 800 – 900sqm.
	Inner bay	Fronting Old French Road and Takamatua Beach Road	Several smaller allotments of approx 800sqm front the eastern side of Old French Road, with a 1.2ha vacant site behind. Between Old French Road and Takamatua Beach Road, the sites are a little larger, generally ranging between 800 and 1400sqm.
	Headland	Developments off Macraes Road	An extensive north-facing subdivision has developed up the hill, with the very largest sites being around 3000sqm but the vast majority being between 850 and 1000sqm. The CDA west of Kingfisher Ave is being subdivided at present into 25 allotments, between 1500sqm and 2900sqm.
Reserves, other open space	Inner bay	Stream	A recreation reserve runs along both sides of the Takamatua stream for a length north and south of SH75, with an information board for whitebaiters located at the end of Old French Road.
		SH75	8000sqm recreation reserve used as a camping ground and containing a heritage building (the former Takamatua School).
		Takamatua Beach Road	A 2800sqm recreation reserve.
Rural	Inner valley	Kotlowski Road	Residential development on 14280sqm site at end of the road.
	Inner bay	Takamatua Valley Road	A cluster of smaller rural allotments surrounds the intersection of SH75 and Takamatua Valley Road – these range from 2900sqm to 1.3ha in area.
	Settlement hinterland	Balance of rural area	Medium to large rural allotments.

Akaroa

Zone	Locations		Key features
Residential	North of town	North and south of Rue Grehan	Significant sized area with wide-ranging property sizes, from approx 500sqm to over 3000sqm.
	Settlers Hill	Pocket up hill road leading from Rue Balguerie	5 allotments, surrounded by reserve, Residential Conservation Zone, and Akaroa Hill Slopes Zone.
	Central	Generally between Rue Balguerie and Stanley Park	Several large blocks of housing. Allotments west of Watson Street are generally smaller and more regular in shape. There are a few larger allotments (1950sqm) but the majority are between 500 and 700sqm. Those east of Watson St are developed off culdesacs and have less regular shapes, most likely reflecting more recent development, and range from around 550sqm to over 1990sqm (most over 600sqm).
	Selwyn Avenue	Pocket either side of Selwyn Avenue	A number of large sections (between 5000 and 15000sqm) to the rear of smaller properties adjacent to the road (500 – 1800sqm).
	Periphery Garden of Tane	From east of Lighthouse Road to west of Cemetery	A more formal pattern of subdivision behind the hospital, comprised of smaller allotments (500–650sqm), with two larger allotments behind the Garden of Tane (up to 7440sqm). Sections less regular in shape along Onuku Road, generally sized between 600 – 700sqm.
	Akaroa South	Either side of Hempleman Drive and Stanley Place.	A couple of properties are subdivided down to 400sqm but the vast majority are irregular shaped allotments between approx 580sqm and 700sqm. There are a couple of larger sites (2590 and 3690sqm) remaining as well as the large 4ha block at Greens Point (Takapuneke) which is currently progressing through the process of vesting as reserve.
Residential Deferred	North	Woodhills Road	Two allotments: 2735sqm and 796sqm
Residential Conservation	North	Between Rue Viard and Rue Pompallier	Two quite large allotments.
	Central	Rue Balguerie to Rue Benoit	A wide strip of allotments ranging in size from 500 to over 2000sqm.
	South	Rue Jolie intersection with Selwyn Avenue	Small pocket comprising four allotments.
		Aylmers Valley Road	South of Aylmers Valley Road: hospital. Northeast of this road: three blocks with numerous allotments of a regular shape but ranging greatly in size from 330sqm to 2530sqm
Akaroa Hill Slopes	North	Between Tirohanga Tce and Woodills Road	Four main lots plus portions of other allotments, generally between 1650 and 5350sqm.
		East of L'Aube Hill	Less than 10 allotments ranging from around 685 to 2740sqm.
	Central	North of Rue Balguerie - west	Several large allotments on Settlers Hill, ranging in size from 1540 to 7940sqm.
		North of Rue Balguerie – east (Settlers Hill)	Five allotments, ranging from 1550 to 7930sqm.
		Rue Cachalot	Portions of four allotments, generally comprising areas of between 1000 and 3000sqm.
		Watson Street	9 allotments southeast of Watson Street, ranging from 830 to 4200sqm, plus a portion of a large allotment to the west of Watson Street, backing onto Stanley Park.
	South	Selwyn Avenue	A large area which does not relate purely to allotment boundaries, and incorporates one smaller allotment of under 900sqm.
		Between Selwyn Ave and Percy Street	Two blocks which do not relate purely to allotment boundaries; the northern one

			comprises approx 5000sqm and the southern is approx 11,000sqm.
Akaroa Hill Slopes Deferred	North	Woodills Road	Two allotments, one of just over 5000sqm, the other over 51000sqm.
		South of Rue Grehan	The zone does not follow allotment boundaries completely, but provides for approx 33000sqm of area over three allotments.
	South	Lighthouse Road	The zone boundary does not follow the allotment boundary; the portion of land is approx 30,000sqm in area.
Town Centre	North	Rue Lavaud north, between Rue Viard and Woodills Rd	The portion on the western side of the road comprises up to 10 allotments ranging from 290sqm to over 1500sqm. The eastern side of the road incorporates the police station designation, and otherwise comprises the western portion of several allotments averaging around 530sqm.
	Central	From north of Rue Brittan to south of Rue Balguerie	A large area comprising several blocks and portions of blocks, with many regular shaped and narrow sites of around 510sqm, but also including larger sites such as BP Meats at 2554sqm.
	South	Stanley Park to Bruce Terrace, at southern end of Beach Road	Four blocks of property either side of Rue Jolie and Church Street, ranging in size from 190sqm to over 1400sqm, although the larger lots are in multiple ownerships/tenancies.
Reserves, other open space	North	Recreation grounds	3.7ha and 0.6ha reserves separated by Rue Jolie and including a number of facilities (sports complex, skate park, etc).
		Waeckerle's Green	A small open grassy area between Woodills Road and Rue Grehan.
		L'Aube Hill	Large reserve covering the northern-most spur into Akaroa and separating the residential Grehan Valley from the Balguerie Valley. Contains French cemetery and water reservoir.
		Grehan Valley Road	Conservation Reserve – waterway and walkway within rural area.
	Central	Stanley Park	6ha reserve on the central headland above the main beach. It has an open rural feel and contains many notable trees and the town's fire siren.
		Watson Street	380sqm pocket park at a bend in the road.
		Beach Road	War memorial, childrens playground, reserve and parking for jetty.
		Settlers Hill	Reserve alongside Settlers Hill Road.
		Rue Jolie	3 allotments within Town Centre Zone adjacent to harbour .
	South	Jetty	Small triangular pocket by main wharf.
		Percy Street	1.2ha reserve running from Kowhai Grove towards Seaview Ave. Vegetated and hilly.
		Garden of Tane	Large gardens, planted with exotic trees in the late 19th century, now with extensive bush cover. Contains three gullies and ridges.
		Cemetery west	The cemetery and two adjacent reserve allotments back onto the Garden of Tane and contribute to the large block of reserve open space in this locality.
		Hempleman Drive	Two pockets north and south of central Hempleman Drive.
		Takapuneke	Britomart monument and reserve in centre of bay.
Rural	North	Childrens Bay area	The land parcels are quite fragmented, with several non-rural activities (eg campground, motel units. Some smaller parcels (790 – 4000sqm) amid larger parcels (up to 4.8ha).
		Grehan Valley Road	Larger blocks of land, up to 12ha but with a couple of smaller allotments comprising non-rural activity (up to 0.3ha).
	Central and South	Immediate hinterland around ridges	Generally medium to larger sized blocks, with the exception of several small allotments around the intersection of Rue Balguerie and Purple Peak Rd, and the intersection of Aylmers Valley Road and an unformed road.