

Let's  
**Discuss**

Let's  
**Plan**

Let's  
**Do...**

# Residential Red Zone Future Use

He Mahere mō te Whenua Rāhui

**WAIMAKARIRI**

**canvas**

LET'S PLAN FOR RED ZONE FUTURE USE  
HE MAHERE MŌ TE WHENUA RĀHUI



**WAIMAKARIRI**  
DISTRICT COUNCIL





This discussion document provides information on the future use of the residential red zones in Waimakariri. In the first part of the document you'll be provided with some background information and new information gathered since the Canvas public engagement campaign in 2014. The second part of the document identifies at a high level, broad types of land use that may potentially be suitable in different areas of the Waimakariri residential red zone and asks for your feedback moving forward.

Further investigations, including engineering feasibility, would be required before considering these options further.

You will be able to provide feedback on this discussion document in a number of ways.



**‘Let’s Discuss’ - this document – takes the process of deciding the future use of the District’s residential red zone land one step further.**

The development of the Draft Recovery Plan is the responsibility of the Waimakariri District Council as lead agency, in collaboration with CERA, Environment Canterbury and Te Rūnanga o Ngāi Tahu.

The CERA led Canvas process last year drew a widespread response from our community, including, of course those living close by and those who used to live in the red zone. To all those who took part in the Canvas exercise I’d like to say a very big thank you. The momentum of that is now carrying the future use of land in the residential red zone to this next exciting phase.

Alongside the Canvas analysis has been the ongoing collection of technical data which has been collated since the earthquakes – data with a direct bearing on the capability of the land for differing future uses. ‘Let’s Discuss’ is where what you have said you wanted meets what might be technically and logistically feasible.

One of the lessons we have all learned since the first earthquake is that the complete recovery process takes a long time. Developing and finalising this plan to the point where the actions in it can begin will take us through to mid 2016. The programme from there will be variable – some of the actions within the plan may take only a few further months to complete, others may take some years.

One thing for certain is that this process will enable us to take advantage of what has happened since 2010 and lead to Kaiapoi, Kairaki and Pines Beach areas that will be much better places.

David Ayers  
Mayor  
Waimakariri District







## Tēnā rā koutou

**Nāia te whakamiha o Te Rūnanga o Ngāi Tahu e rere nei ki te hapori whānui o Waimakariri i runga i ngā tini āhuatanga o te wā. Tēnā rā koutou katoa.**

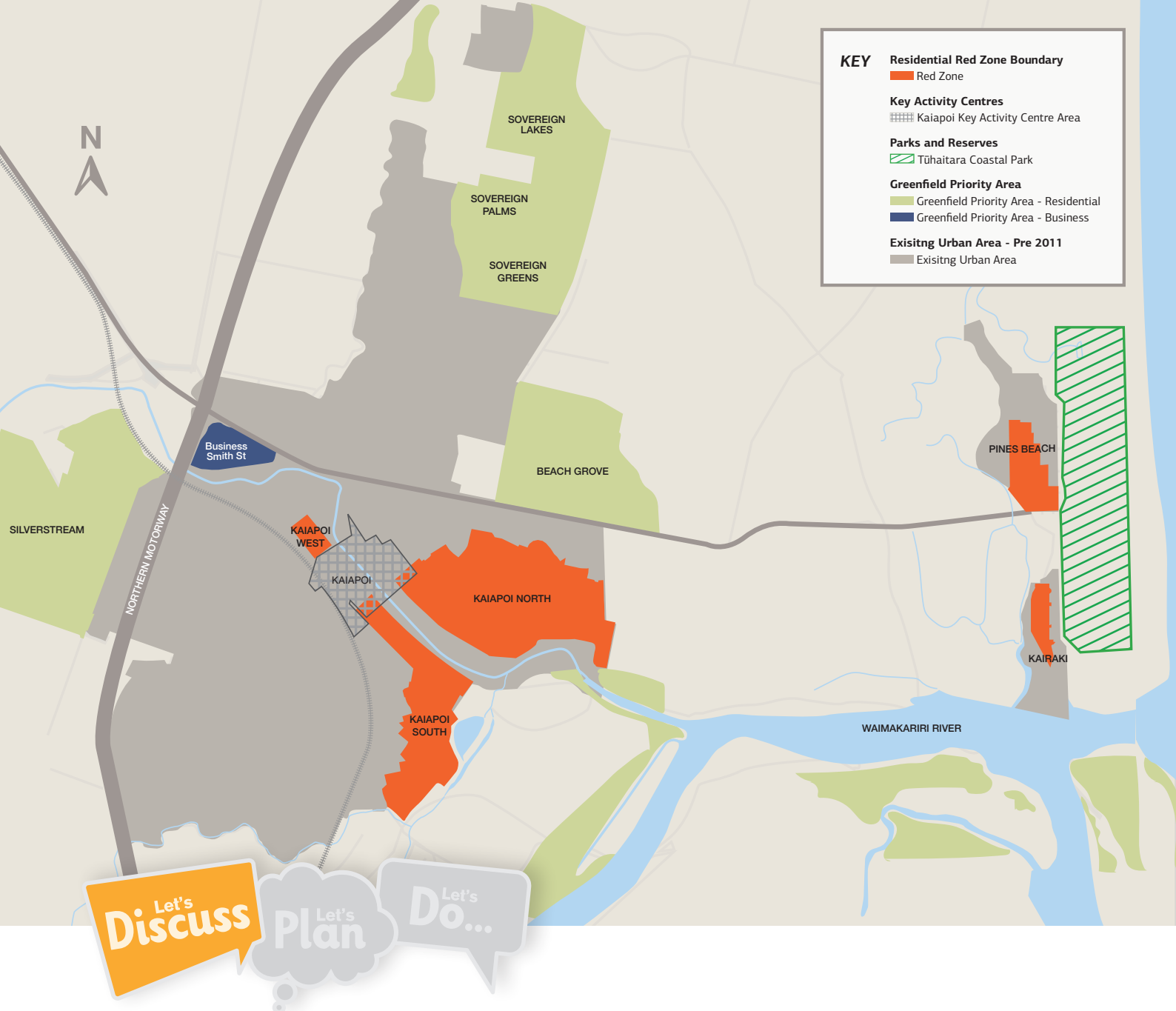
Planning for the future use of the residential red zones within the Waimakariri district represents a positive step forward for the communities affected by the earthquakes.

The 2010-11 quakes caused unprecedented and widespread damage in greater Christchurch, including Kaiapoi, Kairaki and Pines Beach, and a recovery plan for the future use of land in the residential red zone offers us the opportunity to create places that will be sustainable in the future.

Te Ngāi Tūāhuriri Rūnanga, one of the primary hapū of Ngāi Tahu, is centred in this area and we hope that the future use will recognise the importance of their ancestral lands, of the Kaiapoi Pā site - once a major capital and trading centre for Ngāi Tahu – and the importance of the Waimakariri River and traditional mahinga kai (food gathering) sites.

Te Rūnanga o Ngāi Tahu has welcomed the opportunity to work in partnership with the Waimakariri District Council, Environment Canterbury and the Canterbury Earthquake Recovery Authority, and we look forward to creating exciting new opportunities for our communities. Mō tātou, ā, mō kā uri ā muri ake nei – for us and our children after us.

Tā Mark Solomon  
Kaiwhakahaere  
Te Rūnanga o Ngāi Tahu



**‘Let’s Discuss’ provides an opportunity for you and people throughout New Zealand, to comment on the preparation of the Draft Recovery Plan for the Waimakariri residential red zone.**

You’re invited to be part of the process over the next few months to make decisions about the future use of this land in the District. We want to hear any further ideas about how the residential red zone could be used in future, how those proposals might be paid for and how the land should be managed.

Imagination is key to make Kaiapoi, Kairaki, Pines Beach and the wider area, a place to be proud of – Mō tātou, ā, mō kā uri ā muri ake nei – for us and our children after us.

The discussion document is divided into four parts:

- Information about the process to develop the Recovery Plan
- A summary of your feedback from Canvas, and updated high level technical information about the land
- An overview of five distinct areas, and some broad types of land use that may be suitable for those areas
- Land use needs for the areas.

# What is a Recovery Plan?

## He aha tēnei mea te mahere whakaraupora?

A Recovery Plan is a tool provided under the Canterbury Earthquake Recovery Act 2011 (CER Act) to co-ordinate and direct the planning, re-building and recovery of affected communities. The Waimakariri District Council, with your involvement, will develop the Draft Recovery Plan. This will be presented to the Minister for Canterbury Earthquake Recovery for public notification and written comment. The Minister may approve a recovery plan having regard to the impact, effect and funding implications of the Recovery Plan.

The Recovery Plan will identify the intended long-term uses of the Waimakariri residential red zone and the practical next steps for putting it into practice. The Plan will set out how ownership, funding and management of different areas in the residential red zone will be determined in the future.

The final Plan will help the Government to make decisions about Crown owned land – decisions which will enable work to begin on returning the land to a useful, enjoyable and attractive condition.

Since the earthquakes, recovery plans have been an important part of co-ordinating and directing recovery efforts. Recovery plans already in place include the Christchurch Central Recovery Plan, Land Use Recovery Plan, Draft Lyttelton Port Recovery Plan, and Residential Red Zone Offer Recovery Plan.

# Why have a Recovery Plan?

## He aha te take o te mahere whakaraupora?

After extensive consultation with Waimakariri District Council (the Council), along with Te Rūnanga o Ngāi Tahu and Environment Canterbury, the Minister asked the Council to take the lead on preparing a Draft Recovery Plan. The Minister's direction provides detail of the consideration in preparing the Draft Recovery Plan.

It's important to have a sense of direction, a co-ordinated approach and a level of certainty around future uses of the residential red zone.

The Recovery Plan will provide a level of certainty for:

- Residents, both within the residential red zone and adjoining the residential red zone, who need certainty about what will happen with this land in the short and long term
- The wider community who need certainty to make investment decisions and to know what Kaiapoi, Pines Beach and Kairaki might look like in the future
- Infrastructure providers who need certainty about future land use to plan for efficient spending and timing of infrastructure improvements including roads and the repair of water, wastewater and stormwater infrastructure.

## What are the objectives of the plan?

The purpose of the Recovery Plan is to identify the intended long term land use of the residential red zone in the Waimakariri District to facilitate recovery from the impacts of the Canterbury earthquakes. The Plan will recommend possible ownership, management and funding arrangements or how those will be determined in future. The Recovery Plan will pay particular attention to residents living within and around the red zone. It may make changes to the Waimakariri District Plan and other strategies and plans to enable development of activities, where these are sensible and sustainable ideas, generally in accordance with the objectives below.

There are four key objectives to consider in developing the Recovery Plan. The Minister's Direction says that the decisions that are taken on the future use of the Waimakariri residential red zone should reflect the following objectives:

- Promote the well-being of greater Christchurch communities
- Result in outcomes that are resilient and enduring
- Support economic development and growth
- Be affordable and consistent with the Government's commitment to principles of responsible fiscal management.



Together, these objectives consider the needs of the local community and the Crown as land owner. The objectives will serve as a measure against which to consider proposals and reconcile competing options and views. Proposals for land use do not have to meet every objective.

## Where does the Recovery Plan apply?

The Recovery Plan will focus on the residential red zones of Kaiapoi, Pines Beach and Kairaki. However, it will take a holistic view before determining future land uses, considering issues and effects that may occur outside of the geographic extent of the residential red zone. This will include matters relating to land uses, transport, and the social, economic, cultural and environmental well-being of surrounding communities.

## The Steps

Te hātepe





# What is the residential red zone?

## He aha te Whenua rāhui?

After the 2010 -11 Canterbury earthquakes there was an urgent need for the Government to help people in the worst affected areas, who were otherwise facing drawn-out individual negotiations with their insurers, and the prospect of living on damaged land with damaged infrastructure for a long time. A lot of the land needed area-wide land remediation that could not have occurred property by property. There was considerable uncertainty about potential time, costs, logistics and how large scale land remediation and engineering work could be undertaken from a technical perspective.

1,048 properties were included within almost 100 hectares of land that was zoned red within the Waimakariri District. This included 22% of residential properties in Kaiapoi.

For more information on the residential red zone visit [www.redzoneplan.nz](http://www.redzoneplan.nz).

### Reflection

The residential red zone process has impacted on individuals, families and communities in different ways.

Thirty seven properties are still in private ownership in the red zone, and varying individual circumstances apply to those property owners. They have a range of aspirations and desires for future land use around them. Any plan will need to consider the views of all people, including private property owners.

The residential red zone land may look like a 'blank canvas' to plan for future use. However, recognising past and present occupants is an important consideration in determining the future use of this land.



Ō koutou whakaaro

A word cloud visualization of the data from the 'What's important to you?' survey. The words are arranged in a circular pattern, with 'nature' and 'land' being the most prominent. Other significant words include 'people', 'reflect', 'trees', 'green', 'future', 'place', 'live', 'keep', 'enjoy', 'access', 'park', 'memories', 'looking', 'zone', 'family', 'beach', 'walking', 'left', 'children', 'heavy', 'city', 'well', 'town', 'time', 'residents', 'fruit', 'centre', 'important', 'peaceful', 'earthquakes', 'local', 'gardens', 'space', 'communities', and 'community'.



The responses to the second question *what would you like to see happening on this land?* the analysis categorised response into six themes:

- Recreation
- Business and Commercial
- Environment
- Infrastructure and Public Facilities
- Art, Culture Education and Heritage
- Community and People.

There were almost 2,000 ideas provided under the six themes.

Many respondents want recreation in a well-restored natural environment. Some thought that part of the land could provide an economic return and, for those, residential development was the most common suggestion. Remembering the impact of the earthquakes through a memorial and creating a legacy was important to many.

Nearly half (900 of 2,000) of the comments related to **Recreation**. Many people want the residential red zone to be a green open space in which a range of different activities could occur. Some people said they want more open recreation spaces and parks, while others identified specific activities such as dog parks and children's playgrounds. Food cultivation was also a popular option.

**Business and Commercial** was the second most common theme, being nearly one fifth of comments. Residential development was the most frequently discussed topic, though support for this was conditional on ensuring only high quality or remediated land was used. The only topic in the process that had substantial opposition was the objection raised by some participants to residential development.

Camping, markets and cafes were the most commonly suggested hospitality and retail activities.

Entertainment festivals were proposed as a way to increase tourism and attract people to the area. Other entertainment activities proposed included mini-golf, indoor entertainment, theme parks and animal attractions.

Pasture farming was the most common primary industry suggestion, followed by market gardens, orchards and forestry.

**Environmental** management and promotion were closely linked with the recreation theme. Trees were the most commonly requested natural feature. A significant number of people want nature reserves to be established, while many wanted lakes and wetlands to be developed.

**Infrastructure and public facilities** comments related to increasing car parking, with several suggestions that parking should be near the town centre or along Hilton Street. Other ideas related to water transport access, with suggestions for new boat ramps, or keeping and improving the Askeaton and Cass Street boat ramps.

**Art, culture, education and heritage** ideas under this theme were public art and ways to remember local history.

**Community and people** suggestions focused on things that should be provided for local community groups rather than specific activities. This particularly focused on spaces for families and young people and requests for good lighting, safe buildings and equipment for all of the community, including children, adolescents and older people.

Summary report of the Canvas campaign can be found at [www.redzoneplan.co.nz](http://www.redzoneplan.co.nz)



# Progress since Canvas

## Te kauneke

Since Canvas, there have been other consultations on Council led projects, such as the Kaiapoi Town Centre recovery and the Long Term Plan for the District. The Council has considered the infrastructure located in the residential red zone that is required to service properties in the red and green zone. The Council has also undertaken engagement about what you think should happen to the roads in the red zone.

### Technical Advisory Panel (TAP)

A Technical Advisory Panel (TAP) has produced a preliminary report that can help us to understand where further investigations are warranted and the physical capability, characteristics, possible uses and hazard management of the land within the Waimakariri residential red zone. The panel also evaluated existing information relating to physical land characteristics, environmental, archaeological/heritage and Mana Whenua and Ngāi Tahu values.

The panel comprised people with engineering, planning, cultural and other expertise from Waimakariri District Council, Environment Canterbury, Te Ngāi Tūāhuriri Rūnanga/Te Rūnanga o Ngāi Tahu and CERA.

The panel looked at five main constraints on future land use:

- Geotechnical
- Flood
- Contamination
- Tsunami
- Sea level rise.

Initial indications and recommendations in the report have been used to inform the area specific descriptions in the following sections of this document.

The TAP report states that further technical investigations are required before any decisions can be made about any future residential use of the land.

“The effects of the geotechnical condition of the land and flooding vulnerability are the most significant controlling factors to the opportunities for future use in Kaiapoi. Where engineering feasibility is critical for decision-making, further detailed assessment will be required”. – TAP summary

The Council has commissioned further work to determine whether or not some areas of land could support residential development without having undue adverse effects on other developed areas. This further work relates to areas north of Cass Street in Kaiapoi East and west of Courtenay Drive in Kaiapoi South. The outcome of these assessments will be included in the preliminary Draft Recovery Plan.

Additionally, an assessment is being undertaken to determine whether parts of the residential red zone land in Kaiapoi East, West, and South could be used for car parking or commercial development on the fringes of the existing Kaiapoi town centre. This work is being undertaken in parallel with an assessment of general car parking and commercial development needs for the town centre. If the land is found to be suitable, and there is a need for it, then this will be reflected in the Draft Recovery Plan.

The full TAP report is at [www.redzoneplan.nz](http://www.redzoneplan.nz)



## Mana Whenua/ Ngāi Tahu values

In order to develop a high quality Recovery Plan that reflects the views of the community, the Council must consider a number of important matters including mana whenua/Te Ngāi Tūāhuriri Rūnanga and Ngāi Tahu values.

Te Rūnanga o Ngāi Tahu is both a Treaty partner with the Crown, and a strategic partner with CERA, Environment Canterbury and the Council. The perspective and values of Ngāi Tahu for the area are important considerations in the future use of the residential red zone.

In developing the Draft Recovery Plan, the Council will work in partnership with Ngāi Tūāhuriri and Te Rūnanga o Ngāi Tahu, to ensure:

- Decision making reflects the aspirations of Ngāi Tahu
- The cultural presence of Ngāi Tahu is visible and enhanced
- Shared cultural and natural heritage is respected
- Key public spaces can be designed and named in collaboration with Ngāi Tūāhuriri.

## Mana Whenua, Te Ngāi Tūāhuriri Rūnanga and Ngāi Tahu Whānui

Te Ngāi Tūāhuriri Rūnanga are the mandated representatives of the mana whenua of this takiwā; Ngāi Tūāhuriri. Ngāi Tūāhuriri is one of the primary hapū of Ngāi Tahu. Tuahiwi is the home of Ngāi Tūāhuriri and has played a vital role in Ngāi Tahu history.

Nearby the famous Kaiapoi Pā was established by the first Ngāi Tahu ancestors when they settled Te Wai Pounamu. Kaiapoi Pā was the major capital, trading centre and point from which further penetration of the South Island occurred, so the area is a genealogical centre for all Ngāi Tahu. Kaiapoi Pā was established by Moki's elder brother Tūrākautahi who was the second son of Tūāhuriri, hence "Ngāi Tūāhuriri" is the name of the hapū of this area.

## Mahaanui Iwi Management Plan 2013

The Mahaanui Iwi Management Plan (IMP) was prepared in 2013 by the six Papatipu Rūnanga (Ngāi Tūāhuriri Rūnanga, Te Hapū o Ngāti Wheke (Rāpaki) Rūnanga, Te Rūnanga o Koukourārata, Onuku Rūnanga, Wairewa Rūnanga and Te Taumutu Rūnanga) of the Ngāi Tahu takiwā.

The IMP is a tool for tangata whenua to express their identity as mana whenua and their objectives as kaitiaki, to protect their taonga and resources, and their relationships with these. The IMP seeks to ensure that these taonga and resources are recognised and protected in the decision-making of agencies with statutory responsibilities to tangata whenua. Importantly, it is a tool that will assist with the articulation of Ngāi Tahu values, issues and policy into statutory processes.

Iwi Management Plans are afforded explicit statutory recognition under the Resource Management Act 1991. To meet this statutory criteria, the IMP is endorsed and lodged by the iwi authority, Te Rūnanga o Ngāi Tahu.

## Mahinga Kai

Mahinga Kai is a key Ngāi Tahu value which was recognised in the Ngāi Tahu Claims Settlement Act 1998.

Mahinga Kai is central to the culture and identity of mana whenua and Ngāi Tahu. It was specifically recognised and protected within Kemp's Deed in 1848 and was elevated in its own respect within Te Kerēme, the Ngāi Tahu historic treaty claim.

Mahinga Kai is the concept that exemplifies the interconnected cultural beliefs and practices of mana whenua and Ngāi Tahu in relation to Te Ao Tūroa (the environment), describing not only the natural resources gathered by them from throughout their takiwā, but also the places and practices involved in doing so. It includes the direct and indirect use of those resources for ceremonial, medicinal and sustenance purposes.

Mahinga Kai management and its associations are important to local mana whenua and Ngāi Tahu, especially those who continue to live around, protect and utilise those places and resources.

# Existing Strategies and Plans

## Ngā mahere o nāiane

### National and Regional

While there is room for all sorts of ideas and initiatives for the future use of the residential red zone, it is important to recognise that a range of plans and strategies already provide guidance for development and resource management. This includes strategies to avoid or mitigate natural hazards, such as flooding, sea level rise, tsunamis, liquefaction and other hazards.

The New Zealand Coastal Policy Statement (NZCPS) and the Canterbury Regional Policy Statement (CRPS) are clear about the need to avoid development in hazard prone areas and, only if this is not possible, then the effects of natural hazards must be managed or reduced through mitigation.

The CRPS provides guidance on avoiding areas subject to inundation, addresses earthquake hazards, the role of natural topographical or geographic features which assist in avoiding or mitigating natural hazards, land contamination, and the management of rivers and riparian zones and the coastal environment. The NZCPS and CRPS are at [www.redzoneplan.nz](http://www.redzoneplan.nz)

### Waimakariri District Council Strategies and Plans

There are a number of Council strategies and plans for land around the red zone that provide guidance for determining future land use of the residential red zone. A full list of the relevant strategies and plans is at [www.redzoneplan.nz](http://www.redzoneplan.nz). A brief summary of the more important and relevant plans includes:

#### Waimakariri District Long Term Plan 2015 – 2025

This Plan describes Community Outcomes for the district and the activities of the Council.

#### The Kaiapoi Town Centre Plan 2011

This plan builds on the Kaiapoi Town Centre Revitalisation Plan and responds to the restoration and development requirements of the town centre following the 2010 and 2011 Canterbury earthquakes.

#### The Walking and Cycling Strategy and Implementation Plan 2011

This plan provides a basis for identifying and prioritising demand for new or improved walking and cycling opportunities within the District.

#### The Waimakariri Disability Strategy 2011

This strategy outlines how the Council will contribute towards ensuring the local environment is inclusive for all people, including those with impairments.

#### The Waimakariri Local Economic Development Strategy 2012

This strategy deals with economic development within the Waimakariri District.

#### The Waimakariri District Visitor Strategy 2010-2015

This strategy has been developed by Enterprise North Canterbury with Waimakariri District Council and key stakeholders in the visitor industry to provide a vision and direction for tourism in the Waimakariri District.

#### Waimakariri District Council Community Development Strategy 2015

This strategy reflects the Council's desire to work with the community to identify community development priorities now and into the future.

#### Kaiapoi Town Centre Parking Study 2015

The purpose of the survey was to better understand the level of parking occupancy and turnover, as well as identifying any changes in demand since the 2006 and 2010 parking surveys.



### **Neighbourhood Reserves Management Plan 2015 and Sport and Recreation Reserves Management Plan 2015**

These management plans guide the day-to-day management of neighbourhood and sport and recreation reserves in order to achieve a consistent approach to their management.

### **Kaiapoi River Banks Project**

This involves eight separate projects in the town centre on the north bank of the Kaiapoi River immediately south east of the Williams Street Bridge. These are a tiered boardwalk, demolition of the old wharf, repairs to the new wharf and

wharf side site works, a walkway to the wharf, works to the Tuhoe Berth and railway platform. Possible future options include floating pontoons, changes to Murphy Park such as the relocation of the croquet club and parking and changes to the existing boat ramp, including its access.

### **Kaiapoi River Rehabilitation Project**

This project seeks to improve the water quality, navigability, flood hazard management, recreation and the look and feel of the Kaiapoi River. It is also seeking to improve habitat, mahinga kai and cultural values associated with the river.



# A Changing Place

## Te horopaki

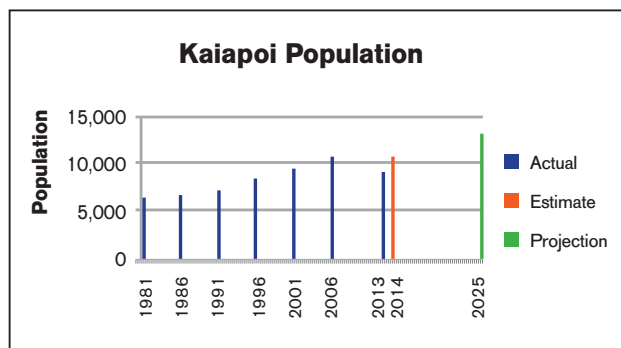
Significant disruption to individuals, families and communities in Kaiapoi, Kairaki and Pines Beach occurred after the 2010-2011 earthquakes. Considerable growth in residential development occurred throughout the District, well in excess of that anticipated.

### Urban Development

The extensive damage to land in the residential red zone and the subsequent purchase of many of these properties by the Crown initially resulted in the loss of many homes in the Kaiapoi, Kairaki and Pines Beach areas. However, additional land has been made available for residential development in new areas, particularly new subdivisions such as 'Silverstream', 'Sovereign Palms', and 'Beach Grove'. This has changed the location, type of housing and neighbourhoods in Kaiapoi.

### Population Changes

A drop in population between the 2006 and 2013 illustrates the short-term effects of the earthquakes on this area. People were leaving due to damaged homes and services. However, the estimated population in 2014 shows a quick rebound, returning to approximately 2006 levels. This is due in part to the availability of new areas for development allowing Kaiapoi, Kairaki and Pines Beach residents to relocate within the town, and new residents to establish themselves. This growth is expected to continue for some time, albeit more slowly.



Kairaki and Pines Beach also experienced significant population losses. With no new development in these areas, the population is expected to remain relatively stable.

The age distribution is changing over time, with an increase in those over 65 and reduction in the 20-39 year age group. While this change in age structure should be considered in planning the amenities and services offered in the area, there may also be opportunities through red zone future use to make it more attractive to working age people and young families. The future use of the residential red zone may present those types of creative opportunities.

### Land Use Needs

With such significant changes occurring in the wider Kaiapoi area, housing, parks and reserves, business land and infrastructure needed to service that land have also changed.

#### Housing

From 2011 several areas of Kaiapoi were rezoned to provide land for new housing to enable those red zoned to continue to live within the Kaiapoi community. This plus the demand for new homes from those relocating from Christchurch has had a very significant effect on the level of development activity in Kaiapoi in recent years. In the five years after the first earthquake around 1,250 new dwelling consents were issued for the town – more than the 1,000 homes housing lost through red zoning and more than twice the 530 consents issued in Kaiapoi in the 10 years prior to the earthquakes! While it is anticipated there would be sufficient housing land available to meet projected demand in and around Kaiapoi until at least 2025, this may need to be re-examined if growth in demand continues.

#### Parks and Reserves

Kaiapoi is currently well serviced in terms of parks and reserves. However, there may be some opportunities to further enhance these (e.g. provision of additional land at Murphy Park). For the Kairaki and Pines Beach area, it will be important to consider the long term relationship of the residential red zone with adjacent land uses such as the nearby Tūhaitara Coastal Park.



## Business Land

The Council keeps a record of vacant commercial and industrial land in Kaiapoi. Given the changes occurring in Kaiapoi post-earthquake, the Council is reviewing the need for and availability of commercial and industrial land. The Town Centre Plan identifies a potential issue in providing adequate parking close to the main business area. The Council has been monitoring car parking availability and has undertaken a demand analysis. Also to be considered is commercial and industrial land for the long term future.

## Infrastructure

Infrastructure and facilities, including roading and sewerage, stormwater and water supply are major considerations for the future of the residential red zone and the surrounding areas.

As an example, the post-earthquake changes in the location of residential neighbourhoods and roading upgrades have and decreased pressure on Williams Street and increased use of the Motorway for trips south. The roading network within the residential red zones will need to ensure adequate ongoing access to surrounding areas.

The sewer and water network in some catchments suffered significant damage in the earthquakes. These networks require upgrades to meet the 50-year growth predictions. The residential red zone may present opportunities to relocate and improve some of this infrastructure.

Existing water supply wells are expected to have sufficient capacity for predicted growth for the next 50 years, but upgrades may be required to the storage and distribution system.

Any new development is required to maintain stormwater discharge at predevelopment levels. The demand on the stormwater system will depend strongly on land use decisions in the residential red zone, but there are opportunities to positively benefit the wider system in Kaiapoi.

## Natural Hazards

The effects of the earthquakes have heightened recognition of the importance of planning for natural hazards and their consequences – not only the possible risk of future earthquakes, but also flooding, climate change, sea level rise and tsunamis. These are issues which are inter-related to varying degrees.

As evidenced during the earthquakes, the area is susceptible to land deformation from liquefaction and lateral spreading. Some areas are more susceptible than others. For example in some parts of the red zone lateral spreading has occurred within 30m of the river edge, whereas in other areas, this susceptibility extends more than 200m back from the river bank.

Some of the areas of the residential red zone are subject to frequent flooding which limits development opportunities. Mitigation measures, such as raising ground levels, can adversely affect adjacent areas.

The effects of climate change include higher temperatures, rising sea levels, rising groundwater levels, and more frequent extreme weather events including increased flooding. The accepted practice is to plan for one metre of sea level rise by 2115. Due to changes in meteorological processes from warmer sea and air temperatures, increased frequency and intensity of flooding events are expected. This may have cumulative effects on the residential red zone areas already subject to other hazard risk, as they are within low lying areas, or near the coast or waterways.

Combined with the flooding risk from tsunamis, discussed in the Technical Advisory Panel report, careful planning is required for coastal areas.

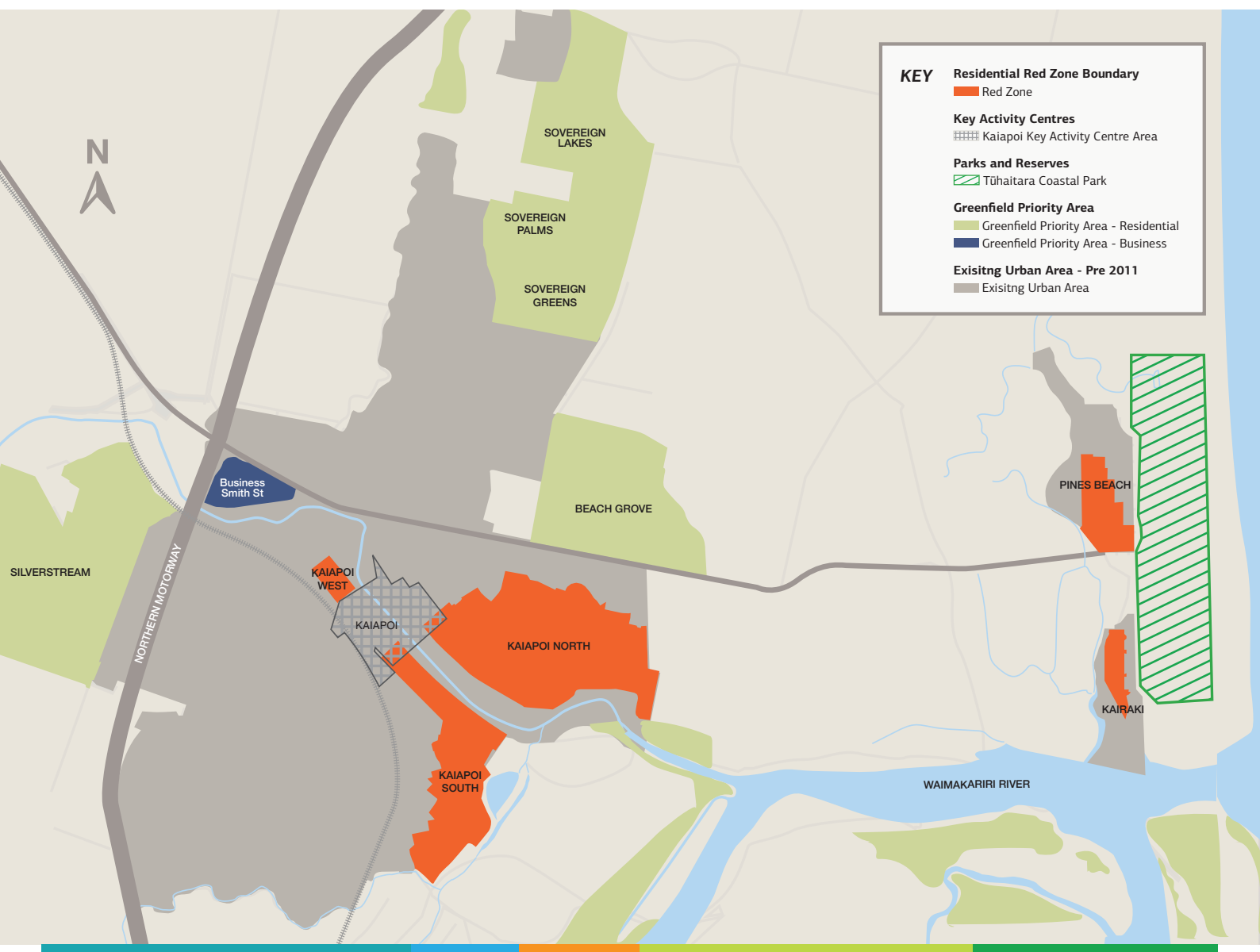
# Area Summaries

## Te rohe

For ease of reference we have arranged the residential red zone in to five areas:

- Kaiapoi West
- Kaiapoi North
- Kaiapoi South
- Pines Beach
- Kairaki

This has been based on geographic areas and constraints and opportunities. However, there is commonality between these areas. While we welcome ideas for a range of activities and uses confined to specific areas, if you have suggestions for all or more than one area of the residential red zone please let us know.



## Kaiapoi West



The Kaiapoi West residential red zone area is a relatively small rectangle of approximately 2.6 hectares, bounded by Raven Quay, Rich Street, Hilton Street and Black Street.

The area is adjacent to the Kaiapoi Town Centre business zoned land, which lies to the southeast. Kaiapoi Borough Primary School is to the north east, also bounded by Raven Quay and Hilton Street. An area of private residential land separates the area of residential red zone from the school and on the other side of Hilton Street is also private residential land.

Murphy Park is an existing sports and recreation ground to the northeast of the area, on the other side of Raven Quay. Murphy Park is bounded to the north and east by the Kaiapoi River.

### Land Use

This area suffered extensive damage from liquefaction and lateral spread. There are two remaining residential properties in the area, one on Black Street, the other a vacant property accessed from Raven Quay.

The Waimakariri District Plan currently identifies the area for residential land uses. The zoning allows for relatively higher residential densities (e.g. town houses).

### Natural Environment

The Kaiapoi River is nearby, to the east of the area. Otherwise the red zoned land is urban with limited ecological value.

### Values

A protected Magnolia tree is identified in the southern corner of the area.

### Hazards and Constraints

#### Land

The available technical information indicates that moderate-scale area-wide ground improvement works would be required for buildings and infrastructure to be rebuilt in the area. Alternatively, foundations and infrastructure designed to withstand the impacts of earthquakes could be an option. It is likely that this would only be economically feasible for commercial or large scale buildings.

There is no known ground contamination in this area but there is a residual potential for asbestos following demolition of dwellings. This would require further investigation before supporting some land use activities.

#### Flooding

The main constraint on options for Kaiapoi West is the flooding potential. Any mitigation option must consider potential impacts on neighbouring areas.

### Ideas and Options for the Future

#### Canvas

There was strong public support for some or all of this area to be used for open space. Specific suggestions included:

- Sports grounds or sports buildings
- Community gardens, possibly linked with markets
- Car parking, particularly for Murphy Park and the Kaiapoi Borough Primary School

### Potential future land use option types

The following broad types of land uses are based on the existing technical advice available:

<b>Built</b>	Buildings would need to avoid or mitigate flood risk. Location close to the town centre makes business land use a prospect. Residential development is not considered to be feasible due to flooding risk.
<b>Recreation</b>	The proximity to Murphy Park would allow the area to be integrated into that existing facility.
<b>Environmental enhancement</b>	The Kaiapoi River is nearby providing opportunity to enhance that feature.
<b>Infrastructure</b>	The area could provide opportunity for infrastructure such as pump stations and stormwater detention basins.
<b>Mana whenua/Ngāi Tūāhuriri/Ngāi Tahu values</b>	The area is not identified as having high cultural values but environmental enhancements may contribute to supporting mana whenua/Te Ngāi Tūāhuriri Rūnanga and Ngāi Tahu values of the area

## Kaiapoi North



The residential red zone area, to the north of the Kaiapoi River and to east of the Kaiapoi Town Centre, covers approximately 53.5 hectares. It is bounded to the south by Council-owned reserve land adjoining the Kaiapoi River. Cass Street bisects the area. To the east is rural land use. The west and north are residential and business land use.

### Current Land Use

The District Plan currently identifies the area for residential land uses. The majority of the area provides for low density residential development. A relatively small area in the south west provides for moderately higher densities.

There are smaller Council-owned reserves on Kirk Street in the east, and between Gray Crescent and Blackwell Crescent in the north. There is also a Council-owned pump station for wastewater with access to Feldwick Drive.

There are six remaining private residential properties within the area.



## Natural Environment

The Kaiapoi River runs to the south, separated from the residential red zone by Council-owned reserve land. There is potential for environmental enhancement.

## Values

Four heritage sites are identified within the area by the District Plan. One of which is the former Cherry Vale Orchard that existed prior to residential development. While an archaeological assessment of the site did not find anything of significant value, there are opportunities to celebrate and reflect the past in future development.

## Hazards and Constraints

### Land

In a future earthquake, the area south of Cass Street would be at risk of lateral spread and would require large scale area-wide remediation to make building on the land feasible and sustainable. This land is therefore not likely to be suitable for building.

There may be opportunity to remediate land north of Cass Street to enable buildings and utilise the southern portion for stormwater detention and flood management.

Due to the area being the site of a former orchard and recent demolition activity, precautionary investigation would be necessary into soil conditions.

### Flooding

While the area is not considered to be directly affected by risk of sea level, it is subject to flooding risk. The area is adjacent to the Kaiapoi River and the associated stopbanks. Because of the size of the area, the flooding risk varies.

## Ideas and Options for the Future

### Canvas

There is strong public support for some or all of this area to be used for open space. Specific suggestions included:

- BMX track

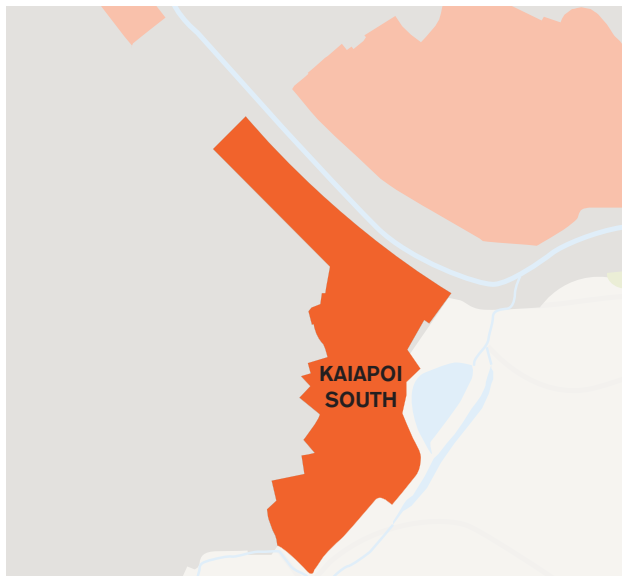
- Dog Park
- Playgrounds
- Grassed sports grounds
- Skate park
- Maintain Cass Street boat ramp and complement with marina
- Motorhome park
- Golf course
- Rural use, including horse riding.

### Options

The following broad types of land uses are based on the existing technical advice available:

<b>Built</b>	Considering the area as a whole, the northern portion could be remediated through engineering works, if the southern portion could be used to manage stormwater and flooding issues.
<b>Recreation</b>	The land is likely to be suitable for recreational uses.
<b>Environmental enhancement</b>	The location of the area adjacent to the Kaiapoi River provides opportunities to enhance that feature.
<b>Mana whenua/ Ngāi Tūāhuriri/ Ngāi Tahu values</b>	The area is not identified as having high cultural values but environmental enhancements may contribute to supporting mana whenua/Te Ngāi Tūāhuriri Rūnanga and Ngāi Tahu values of the area.
<b>Rural</b>	The land could be used for a rural activity. Consideration should be given to potential impacts on surrounding urban uses.
<b>Infrastructure</b>	The area may be suitable to provide realignment of roads and installation of stormwater infrastructure.

## Kaiapoi South



The area of residential red zone identified south of the Kaiapoi River covers approximately 28.3 hectares. Raven Quay runs along the north, parallel to the Kaiapoi River. To the west is to the town centre, with rural land to the east and south. To the south is the Kaikanui Stream, joining the Courtenay Stream, which runs to the Kaiapoi River.

### Land Use

The District Plan currently identifies the area for both residential and rural use. The majority of the area provides for low density residential development.

There are three remaining private residential properties within Kaiapoi South and three Council-owned properties, two of which are used for infrastructure.

### Natural Environment

There are a number of waterways in the area, as described above. The most significant of these is the Kaiapoi River.

There are two stormwater drainage ponds close to the area - the Kaikanui Basin in the southeast, and the Courtenay Basin in the northeast.

### Values

There are significant mana whenua, Te Ngāi Tūāhuriri Rūnanga and Ngāi Tahu values identified in the south of the area, and adjacent to the Kaiapoi River, particularly in relation to access to mahinga kai areas and past occupation. Significant areas include Kaikanui.

### Hazards and Constraints

#### Land

There is significant variation across the area in the level of remediation that would be required to enable building to occur. The eastern part of the site that is adjacent to Courtenay Stream would require large scale area-wide land remediation work, while the area to the west of Courtenay Drive would require significantly less. This reflects the proximity to waterways and subsequent potential for lateral spreading to occur.

Due to the area being the site of recent demolition activity, precautionary investigation would be necessary into soil conditions.

#### Flooding

There is variability in flooding risk across the area. The worst affected portion is closest to the Kaiapoi Town Centre. Consideration is needed of any subsequent effects of water drainage on surrounding areas if land filling was used to address flooding issues.

### Ideas and Options for the Future

#### Canvas

There was strong public support for using some or all of the area near Courtenay Drive for open space/ recreation. Some of the specific suggestions for the area included:

- Playgrounds
- Walkways, walking tracks, a connecting bridge between Courtenay Lake and Pegasus Walkway
- Cycleways, BMX track
- Dog park
- Community gardens

- Sports grounds, Golf course, relocation of Kaiapoi Golf Course to allow its current site be used for residential development.

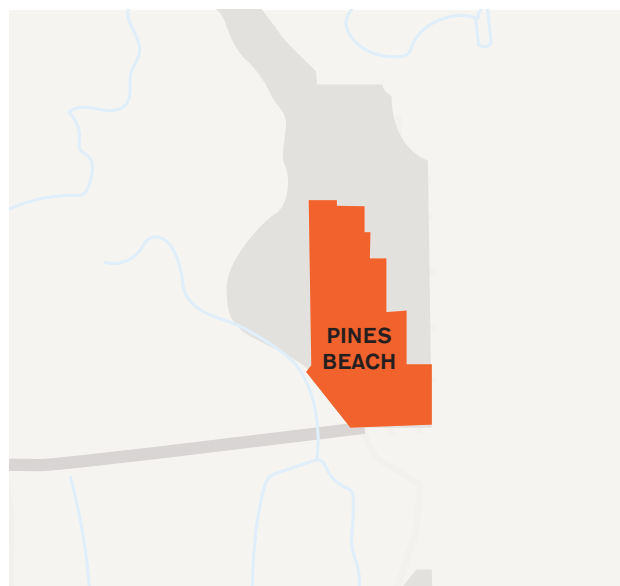
There was also some support for new housing to be considered where land could be remediated, although others opposed the building of new houses in any parts of the red zone land.

### Options

The following broad types of land uses are based on the existing technical advice available:

<b>Built</b>	There may be potential to use the area west of Courtenay Drive for residential land use, and the area adjacent to the Town Centre for commercial land uses. This would be dependent on the ability to manage relevant hazards and constraints.
<b>Recreation</b>	The land is likely to be suitable for recreational uses.
<b>Environmental enhancement</b>	Location of parts of the area adjacent to waterways, particularly the Kaiapoi River, provides opportunity for enhancement of those features.
<b>Rural</b>	The land could be used for a rural activity. Consideration should be given to potential impacts on surrounding urban uses.
<b>Infrastructure</b>	Potentially feasible to provide infrastructure services, such as a pump station and stormwater detention basin, within the area.
<b>Mana whenua/ Ngāi Tūāhuriri/ Ngāi Tahu values</b>	There are opportunities to further advance significant mana whenua/ Te Ngāi Tūāhuriri Rūnanga and Ngāi Tahu values of the area, in particular, in areas where access to mahinga kai and taonga plant species can occur.

## Pines Beach



Pines Beach is approximately four kilometres east of Kaiapoi, just over one kilometre north of the Waimakariri River mouth, and about 600 metres from the Coastal Marine Area. A wetland exists to the north. The underlying land is predominantly stabilised sand dunes or river sand. The Tūhaitara Coastal Park separates the area from the coast and Saltwater Creek forms the western boundary.

The area identified as residential red zone covers approximately nine hectares of Pines Beach, including Pines Oval. Access to the north is provided through the residential red zone area.

## Land Use

The District Plan identifies Pines Beach as a low density residential zone.

There are four remaining privately owned properties in the residential red zone area and two Council-owned properties. The Council-owned Pines Oval, which includes recreational facilities, forms the central focus of the area.

## Natural Environment

There are significant natural values associated with the wider area. There are regionally important wetlands surrounding the area. This includes the Pines Beach wetland to the north, which provides habitat for sensitive species such as dotterels, bitterns, and the marsh crane.

The Tūhaitara Coastal Reserve is located to the east of the area, which includes natural features of local, regional and national importance. This reserve was established as an outcome of the Ngāi Tahu settlement with the Crown.

## Values

There are significant mana whenua, Te Ngāi Tūāhuriri Rūnanga and Ngāi Tahu values associated with the area. A traditional name for this area is Tāhuna-roa (extended sand-dune). It was a rich mahinga kai resource for local Māori.

The adjacent Tūhaitara Coastal Reserve is acknowledged as having a range of associated values. The Tūhaitara Coastal Reserve Management Plan states that these include Ngāi Tahu, recreation, community and education values.

While there are no archaeological sites identified in the district plan within the residential red zone area, there are some adjacent to the area.

## Hazards and Constraints

### Land

Remediation of the land would require area-wide works, and any buildings would require specialised foundations to mitigate impacts of future earthquakes. Any remediation options will need to consider the natural hazard risks explained below.

Due to the area being the site of recent demolition activity, precautionary investigation would be necessary into soil conditions.

### Flooding and Coastal Erosion

A primary consideration for any future land use is the risk from sea level rise and subsequent potential groundwater

conditions and shoreline erosion. The area is subject to variable flooding risk.

## Ideas and Options for the Future

### Canvas

Feedback indicated recreation as the most commonly suggested land use for Pines Beach. Recreation proposals included:

- Children's playgrounds
- Horse tracks
- Camping
- Dog-friendly environments
- Green, open spaces with picnic and barbecue facilities.

Other ideas related to environmental enhancement, rural uses, selling the land back to private ownership, and returning it to residential uses.

### Options

The following broad types of land uses are based on the existing technical advice available:

<b>Recreation</b>	The land is likely to be suitable for recreational uses.
<b>Environmental enhancement</b>	The proximity of the Tūhaitara Coastal Reserve provides potential to integrate with and further enhance the environmental values.
<b>Rural</b>	The land could be used for a rural activity. Consideration should be given to potential impacts on surrounding urban uses.
<b>Infrastructure</b>	Infrastructure services could be located in the area.
<b>Mana whenua/ Ngāi Tūāhuriri/ Ngāi Tahu values</b>	There are opportunities to further enhance significant mana whenua/ Te Ngāi Tūāhuriri Rūnanga and Ngāi Tahu values of the area.



## Kairaki



Kairaki, an area of approximately 5.8 hectares, was identified as residential red zone and is on Featherston Road, between Pines Beach and the Waimakariri River mouth. The settlement is separated from the coast by the Tūhaitara Coastal Reserve. The Kairaki Motor Camp lies to the east of the residential red zone area.

### Land Use

The District Plan identifies the Kairaki area as low density residential zone.

A number Kairaki residents who decided not to accept the Crown offer to purchase their properties are still living in the area.

### Natural Environment

The Waimakariri River mouth is located directly to the south of the area. Kairaki Beach is approximately 600m to the east.

There are significant natural values associated with the wider area, including regionally important wetlands that follow the Kairaki Creek. This creek is directly to the west of the area.

The Tūhaitara Coastal Reserve is located to the east of the

area and includes natural features of local, regional and national importance. This reserve was established as an outcome of the Ngāi Tahu settlement with the Crown.

### Values

There are significant mana whenua, Te Ngāi Tūāhuriri Rūnanga and Ngāi Tahu values for the surrounding area. The Waimakariri River mouth is recognised as a mahinga kai (traditional food gathering) access point.

The adjacent Tūhaitara Coastal Reserve is acknowledged as having a range of associated values, including Ngāi Tahu, recreation, community and education values.

There is potential for archaeological values associated with the Waimakariri River mouth.

### Hazards and Constraints

#### Land

Remediation of the land would require area-wide works, and any buildings would require specialised foundations to mitigate impacts of future earthquakes. Any remediation options will need to consider the natural hazard risks explained below.

Due to the area being the site of recent demolition activity, precautionary investigation would be necessary into soil conditions.

#### Flooding and Coastal Erosion

The risk from sea level rise and subsequent potential groundwater conditions and shoreline retreat is a primary consideration for any future land use. The area is subject to variable flooding risk.

### Ideas and Options for the Future

#### Canvas

The most commonly suggested land use for the Kairaki red zone was recreation:

- Children's playgrounds
- Horse tracks

- Dog-friendly environments
- Camping.

There is local community support for returning residential red zone properties in Kairaki to use for housing/baches.

### Options

The following broad types of land uses are based on the existing technical advice available:

<b>Recreation</b>	The land is likely to be suitable for recreational uses. The location close to the Waimakariri River mouth and existing reserves provides good possibilities for recreational opportunities.
<b>Environmental enhancement</b>	The location close to the Waimakariri River mouth and existing reserves provides potential for environmental enhancement.
<b>Rural</b>	The land could be used for a rural activity. Consideration should be given to potential impacts on surrounding urban uses.
<b>Infrastructure</b>	Infrastructure services could be located in the area.
<b>Mana whenua/ Ngāi Tūāhuriri/ Ngāi Tahu values</b>	There are opportunities to further enhance significant mana whenua/ Te Ngāi Tūāhuriri Rūnanga and Ngāi Tahu values of the area.



