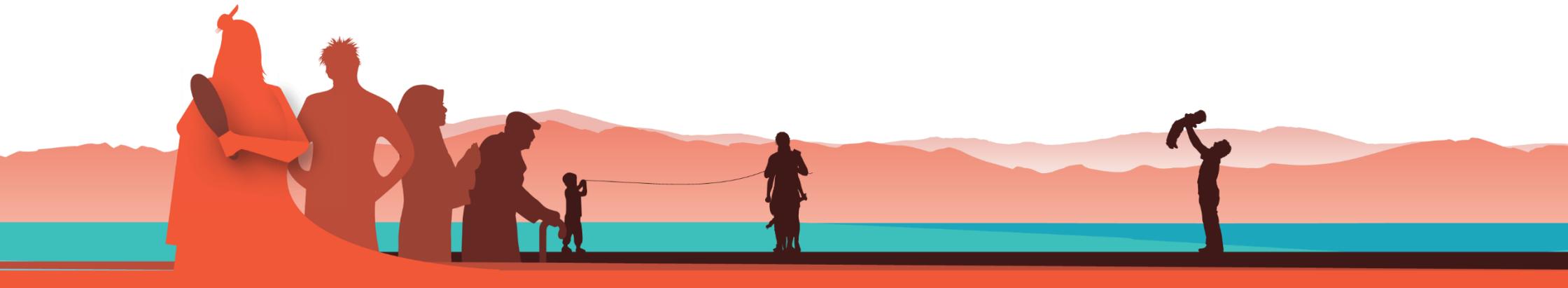


G R E A T E R C H R I S T C H U R C H S P A T I A L P L A N

# Areas to Protect and Avoid

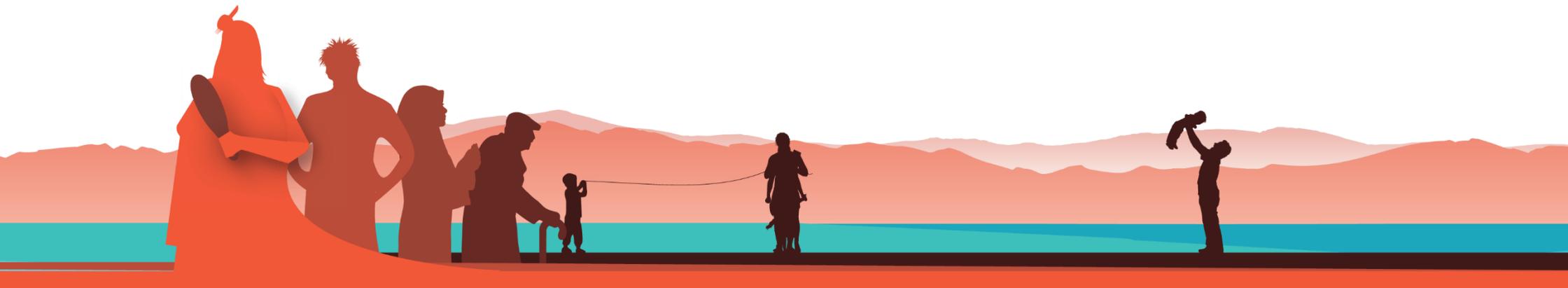
## Background Report

FEBRUARY 2023



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# 1. Introduction

The purpose of this report is to detail the methodology and reasoning for identifying land development constraints and areas to protect, to inform the development of the Greater Christchurch Spatial Plan (GCSP).

The identification and mapping of areas to protect and avoid is vital to the spatial plan process, as it provides an understanding of where future investment and land development should be avoided, as well as areas where investment and development may be appropriate. It enables the identification of areas in need of protection, and areas where land use activities must be managed carefully.

The mapping of areas to protect and avoid is a key component in the development of the GCSP, to guide the location of transport and urban form planning, as well as identifying cultural and open space areas to protect and enhance.

Hazards we need to avoid include:

- areas vulnerable to flooding
- areas vulnerable to the risks of climate change, including coastal erosion, coastal inundation and tsunami inundation
- rock fall, cliff collapse and mass movement areas, and fault lines

Areas we want to protect are:

- sites and areas of significance to Māori
- the natural environment
- highly productive land
- strategic infrastructure
- groundwater protection zone<sup>1</sup>

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<sup>1</sup> To be protected from industrial use



## 1.1 Limitations

This report is intended for spatial planning purposes only. This report is not intended as a substitute to statutory planning or local level assessments of constraints and areas to protect.

The identification of constraints and areas to protect included in this report has been informed by current knowledge, existing land protections, established policy, proposed policy with legal effect and mana whenua direction.

Not all land use considerations are included in this report; it is focused on the key constraints and areas to protect which may limit urban development at the sub-regional scale.

The mapping in this report is based on the existing information and Geographic Information System (GIS) data from the four partner Councils<sup>2</sup>. For some constraints, mapping data is unavailable, incomplete, or reliant on emerging policy with legal effect.

The mapping is not intended to identify specific properties covered by existing constraints or areas to protect, but to look at the high-level spatial distribution of constraints and areas to protect across the Greater Christchurch sub-region. Site specific constraints have not been mapped, and district plan provisions will apply.

We are aware that there are a number of existing communities located within areas that are subject to significant constraints and risk from natural hazards. In developing this report, it is recognised that there are future discussions to be had with vulnerable communities in areas where retreat or significant investment towards adaptation

may become necessary. Decision making within these areas is complex and should be made locally, with appropriate consideration and mitigation of risks.

## 1.2 Natural Environment

Greater Christchurch is the meeting point of the Waitaha / Canterbury Plains, the Pacific Ocean, and the volcanic remnants of Whakaraupō / Lyttelton and Te Pātaka a Rākaihautū / Banks Peninsula.

Greater Christchurch is at risk from a range of natural hazards, including flooding, coastal inundation, earthquakes, rockfall and tsunamis. Climate change will increase the frequency and severity of most of these hazards.

Our urban areas are the most exposed in Aotearoa New Zealand to coastal inundation and flooding. The predicted sea level rise will have major impacts on our low-lying communities in the eastern areas, cause significant drainage issues, and place considerable strain on our infrastructure.

The natural environment forms the basis of the spatial plan, and our urban form and future urban development. In addition to protecting and enhancing our natural environment, we need to manage our risk from natural hazards and the effects of climate change by directing future growth and urban form away from these areas. We need to live and work with nature to remain resilient to the impacts of climate change and natural hazards, and to respect and improve our natural environment.

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<sup>2</sup> Christchurch City Council, Waimakariri District Council, Selwyn District Council, Canterbury Regional Council



## 1.3 Ngā Kaupapa values

The lands and waters of Greater Christchurch have been occupied and accessed by Māori for over 1200 years. The earliest peoples in the areas were the Waitaha, who were succeeded by Ngāti Mamoe. Ngāti Mamoe were followed soon after by those hapū who came to be known as Ngāi Tahu.

The coastline of Te tai o Mahaanui acted as an important route for trade and travel, with the waterways and forests providing a rich source of mahinga kai. Ngāi Tahu migration into central parts of Waitaha / Canterbury was led by the hapu Ngāi Tuhaitara. The marae associated with each Papatipu Rūnanga are described as the beating hearts of tribal identity and centres for cultural, social and economic activities.

Sites and areas of significant historic and contemporary cultural associations and importance to Ngāi Tahu whānui have been recognised in the district plans of Christchurch City, Waimakariri and Selwyn Districts through the use of mapped overlays which are classified as Wāhi Tapu, Wāhi Taonga, Nga Tūranga Tupana and Ngā wai.



## 2. Areas to protect and avoid

A methodology to identify, weight and map land development areas to protect and avoid was developed for the GCSP and has informed this report. However, there are some differences between the methodology and some of the areas to protect and avoid detailed in this report. These are due to further analysis of some areas to protect or avoid land development, and in some instances are informed by the Canterbury Regional Policy Statement (CRPS), in particular in relation to strategic infrastructure.

For the purpose of this report and the GCSP, a “land development constraint” is defined as *“a natural or man-made restriction and/or limitation on the possibilities of urban or other land development”*. The following section sets out the approach undertaken to identify, categorise, weight and map the land development constraints and areas to protect.

This report also details those areas that need to be avoided and protected, such as areas of significance to Māori and areas of environmental protection. The identification of sites and areas of significance to Māori was informed by the Greater Christchurch Spatial Plan: Ngā Kaupapa report prepared by Mahaanui Kurataiao Ltd for the Greater Christchurch Spatial Plan project, which provides a description of cultural values and policies applicable to spatial planning.

Similar to the development of other spatial plans, such as the Hamilton-Waikato Spatial Plan (Future Proof), Queenstown Lakes District Spatial Plan, and Wellington Regional Growth Framework, this report establishes different definitions/categories for categorising constraints.



## 2.1 Identification of areas to protect and avoid

The identification of areas to protect and avoid was based upon those relevant to planning at a sub-regional scale. Areas to protect and avoid at the site-specific scale, for example contaminated land, notable trees, and heritage, have not been identified and mapped as part of this process. Site-specific constraints and features to protect are often managed through district planning rules.

Areas to protect and avoid are also generally limited to those matters tested previously through a legislative process, particularly a process under the Resource Management Act. Exceptions were made for natural hazards identified within public documents but not yet tested through a resource management process. While not robustly tested through a statutory process, it is considered appropriate to include the following matters given the risks posed to people and property and national direction, namely under the New Zealand Coastal Policy Statement. These additional matters include:

- coastal hazards<sup>3</sup>
- fault lines
- tsunami

In regard to highly productive land (HPL), the National Policy Statement on Highly Productive Land (NPS-HPL) came into force on 17 October 2022 and has immediate legal effect. Whilst the mapping of HPL has not yet been completed by the regional

council, there is an interim definition of HPL and provisions to protect HPL that apply and are detailed further in this report.

The identification of areas to protect can be generally categorised into:

- sites and areas of significance to Māori
- environmental areas to protect
- strategic infrastructure

The identification of areas to avoid can be generally categorised into:

- natural hazards

It is important to note that sites and areas of significance to Māori have not been listed below, as these were not subject to the categorisation and weighting process. The protection of cultural sites and areas of significance is recognised as a matter for engagement with mana whenua and not evaluation by technical experts.

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<sup>3</sup> Christchurch City Council has embarked on consultation on a Plan Change (issues and options) based on published maps defining areas at risk of inundation (flooding) and erosion. Waimakariri and Selwyn District Councils have also published maps defining areas at risk of coastal hazards as part of their notified district plans.



## 2.2 Categorisation of areas to protect and avoid

Each area to protect and avoid was categorised as follows, as a means to describe the nature of the constraint and determine how the constraint may shape land development planning.

Critical constraints	Negotiable constraints	Transferable constraints
<p>Areas and resources with a strong presumption in favour of protection. In most cases protection as outstanding and significance areas under section 6 of the Resource Management Act and identified within regional and district plans.</p> <p>Areas where there is a high to very high susceptibility to hazards and mitigation is not technically feasible.</p>	<p>Where mitigation may be possible or appropriate to reduce risks to people and property to an acceptable level.</p>	<p>Where the loss or degradation at some locations may be compensated by provision in other areas or by other means.</p>

## 2.3 Weighting of areas to protect and avoid

Once the areas to protect and avoid were identified and categorised, they were then weighted to provide a further level of assessment in terms of how important the constraint is when considering land development and future planning. Constraints were scored on a scale of 1 to 10, with 1 being the least restrictive and 10 being the most restrictive.

This report identifies areas where development should not occur (those constraints weighted 8-10), as well as areas of constraints where development can still occur, but the constraints need to be considered and mitigated if appropriate (weighted 1-7).

Lower Risk (1-4)	Constraint is lower risk and lower level of importance.
Moderate Risk (5-7)	Constraint is a moderate risk to property and safety, and/or mitigation is possible to reduce risks to an acceptable level.
Higher Risk (8-9)	Constraint has a high risk to property and safety, and mitigation to reduce the risk is very limited.
No Go (10)	A constraint that prohibits development.



# 3. Assessment and mapping

## 3.1 Assessment

This assessment has been used to inform both high level and more detailed assessments of where urban growth, investment and development should be restricted or limited, and areas where growth, investment and development is more appropriate.

## 3.2 Mapping

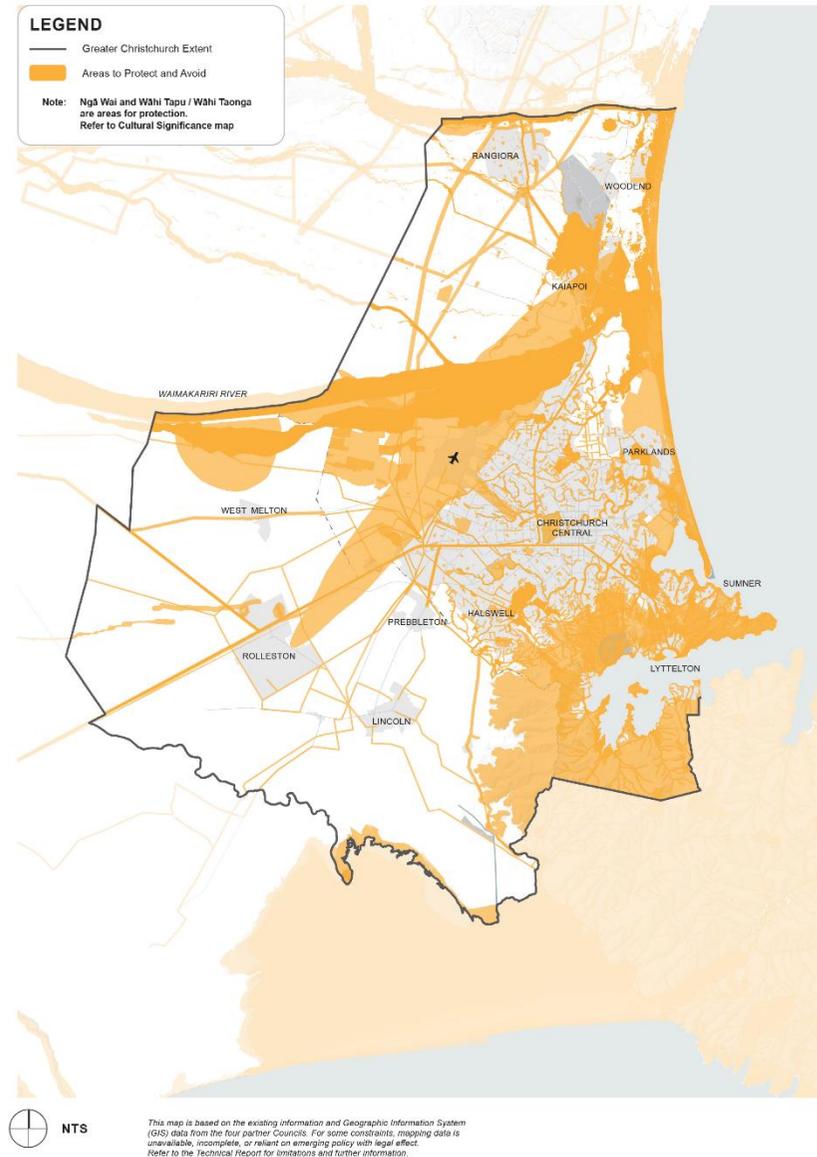
The spatial mapping of areas to protect and avoid has been completed using GIS data. The GIS data for each area has been identified, collated and aligned between the four partner councils as far as practicable.

The individual GIS layers for each area have been collated and mapped as per the following themes;

- sites and areas of significance to Māori
- natural hazards
- environmental areas to protect
- strategic infrastructure

A summary map collating all of the areas to protect and avoid layers has also been produced. It is noted that the sites and areas of significance to Māori are identified on a separate map relating to wider cultural overlays and values, and that some, but not all of those overlays represent areas for protection; being wāhi tapu, wāhi taonga and ngā wai.

Map of Areas to Protect and Avoid



# 4. Areas to Protect and Avoid

## 4.1 Sites and Areas of Significance to Māori

Sites and areas of significance to Māori that should be protected include the following:

- Wāhi tapu and wāhi taonga
- Ngā wai

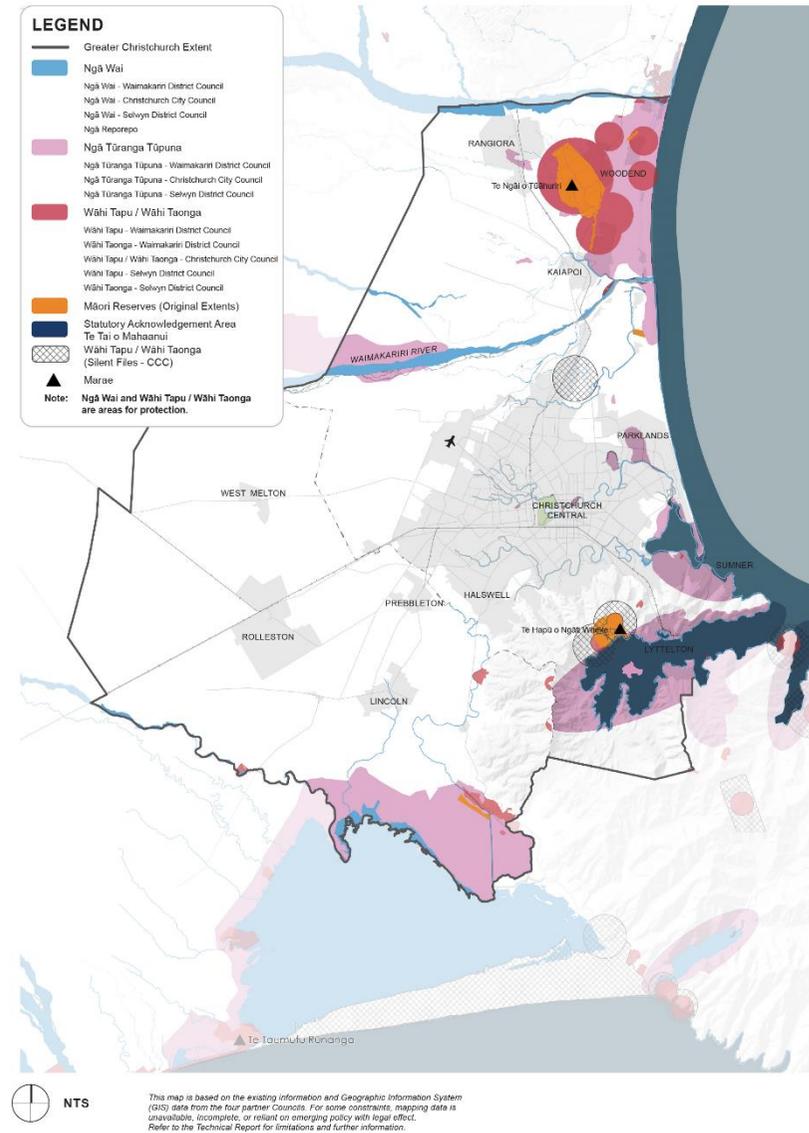
Wāhi tapu are sites and places that are culturally and spiritually significant to mana whenua history and identity. They may include sites such as urupā, pā, maunga tapu, kāinga, tūranga waka and places where taonga have been found. The term is generally applied to places of particular significance due to an element of sacredness or some type of restriction as a result of a specific event or action. Wāhi tapu sites are to be protected according to tikanga and kawa to ensure that the sacred nature of those sites is respected.

Wāhi taonga are ‘treasured places’ with high intrinsic values and are valued for their capacity to shape and sustain the quality of life and provide for the needs of present and future generations. Access to these areas is important to Ngāi Tahu identity.

Ngā wai encompasses water bodies and their margins and include ngā awa/rivers, ngā roto/lakes, ngā hāpua/coastal lagoons, ngā repo/wetlands and ngā puna/springs. Within Greater Christchurch the entire coastline Te Tai o Mahaanui is defined as a Statutory Acknowledgement and mapped as Ngā Wai. Te Ihutai, the Ōtākaro/Avon Ōpawaho/Heathcote, and Pūharakekenui/Styx Rivers and a number of their tributary streams are also identified as Ngā Wai. Throughout Selwyn and Waimakariri, a range of rivers are classified as Ngā Wai, including the Waimakariri and some of its tributaries, Waikirikiri/Selwyn, and Hurutini/Halswell along with Te Waihora.

It is noted that the sites and areas of significance to Māori have not been collated on the map showing all areas to protect and avoid, recognising that this is a matter for engagement with mana whenua and not evaluation by technical experts.

Map of sites and areas of significance to Māori



## 4.2 Natural Hazards

### Areas to Avoid

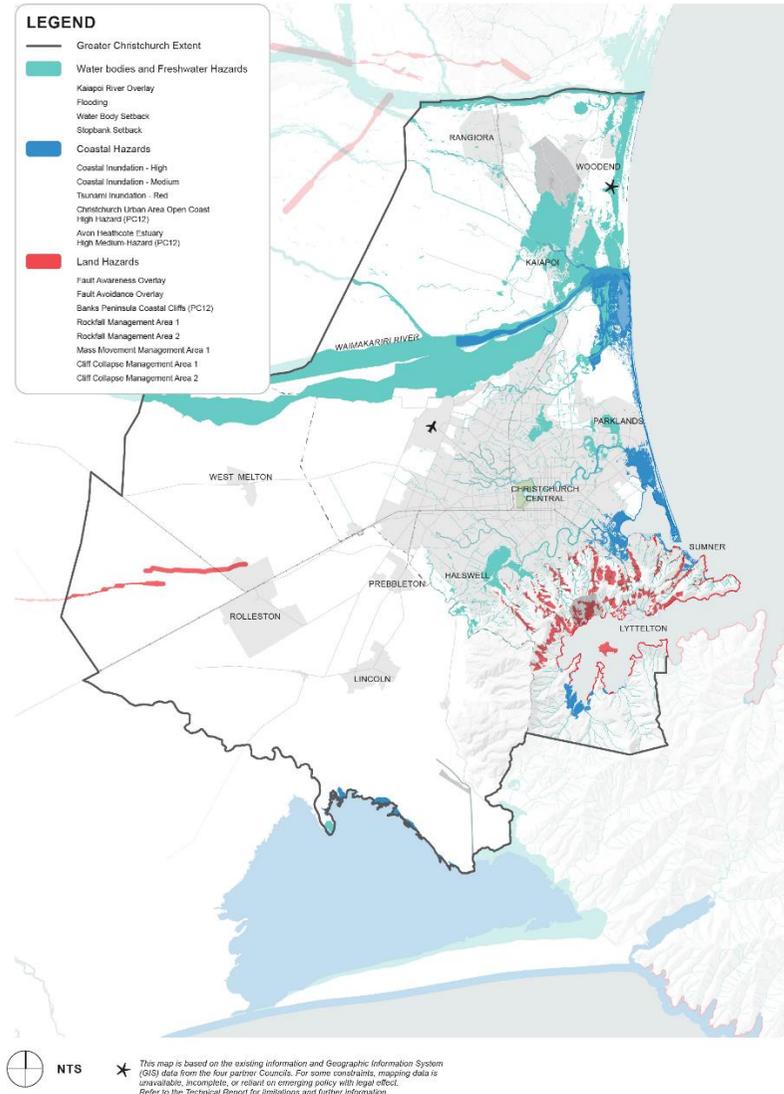
Greater Christchurch faces significant impacts from natural hazards, both now and in the future. We have many areas vulnerable to the risks of flooding, particularly in the low-lying eastern areas of Christchurch. Our coastal areas are at risk of sea level rise, coastal flooding, coastal erosion and inundation, and tsunamis. Earthquakes remain a risk, most significantly along the Alpine Fault. Cliff collapse, rockfall, and mass movement are also critical constraints, mostly in the areas of our hill suburbs.

The following natural hazards are considered critical constraints to development, and therefore must be avoided for future land development:

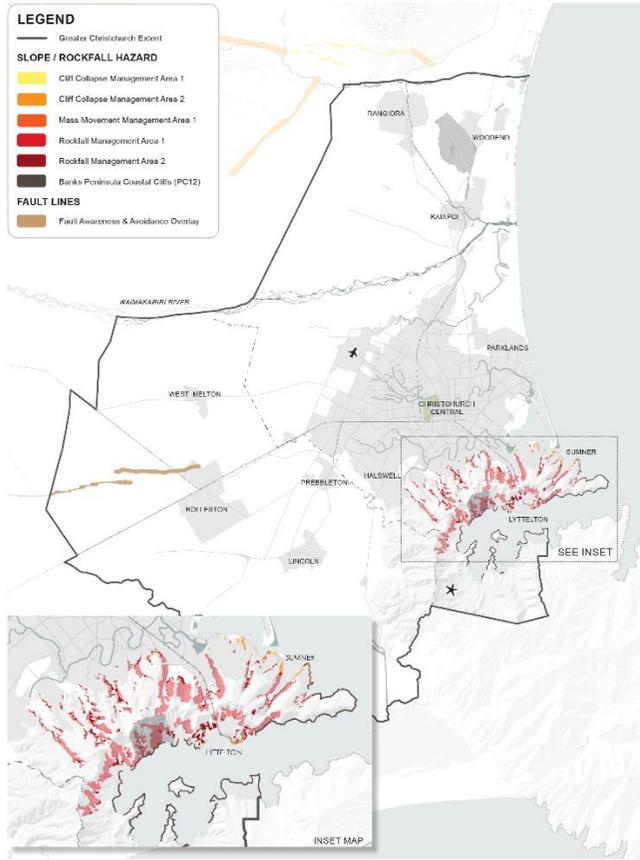
- flooding (1:500yr)<sup>4</sup>
- tsunami inundation (red zone)
- coastal erosion (high risk erosion zone)
- coastal inundation (high and medium risk zone)
- cliff collapse management area
- rock fall area (area 1)
- mass movement (area 1)
- fault lines

<sup>4</sup> Full definition of high hazard flooding in [CRPS](#) Chapter 11

**Map of natural hazards overview (land, coastal hazard, waterbodies and freshwater hazards)**

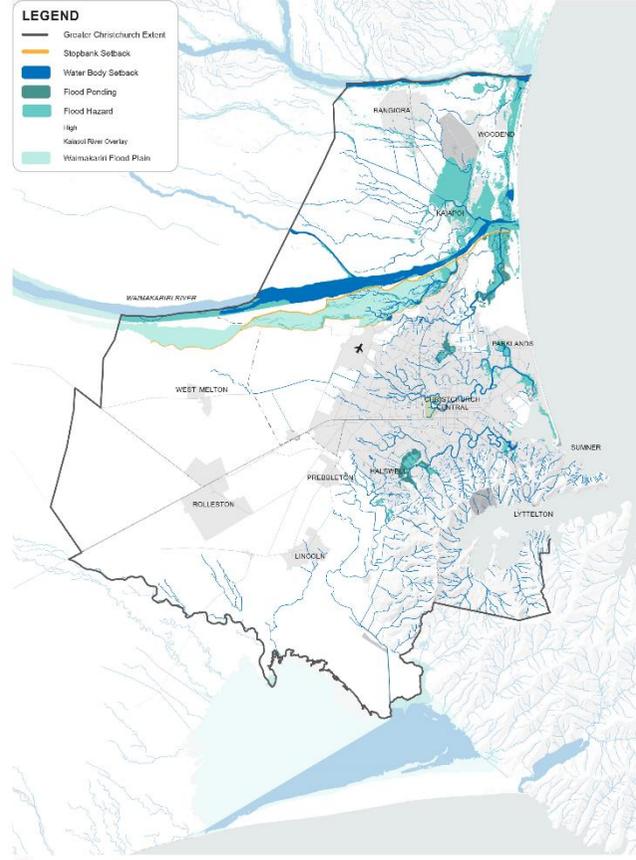


## Map of natural hazards – land



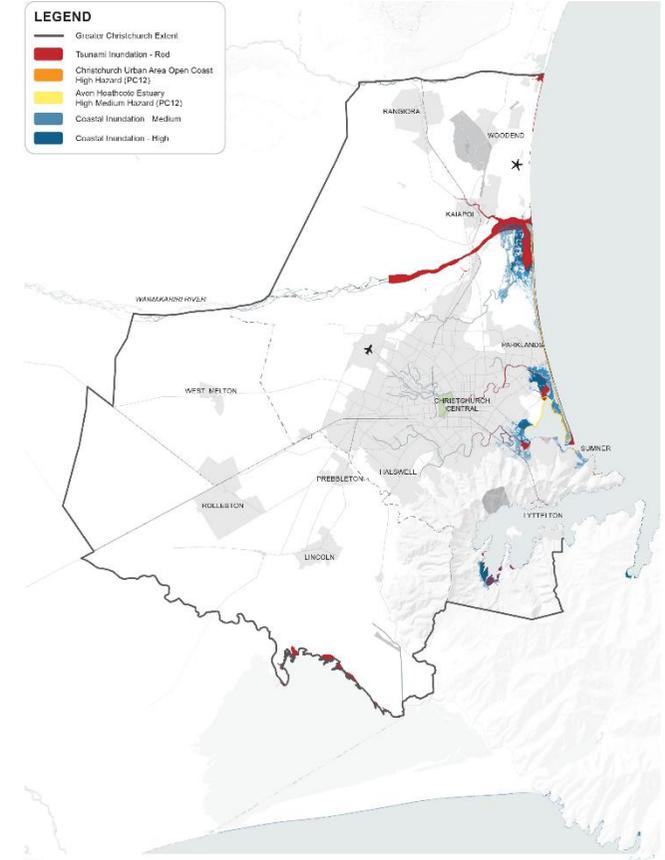
NTS \* This map is based on the existing information and Geographic Information System (GIS) data from the four partner Councils. For some locations, mapping data is unavailable, incomplete, or reliant on emergency policy with legal effect. Refer to the Technical Report for limitations and further information.

## Map of natural hazards – freshwater



NTS \* This map is based on the existing information and Geographic Information System (GIS) data from the four partner Councils. For some locations, mapping data is unavailable, incomplete, or reliant on emergency policy with legal effect. Refer to the Technical Report for limitations and further information.

## Map of natural hazards – coastal



NTS \* This map is based on the existing information and Geographic Information System (GIS) data from the four partner Councils. For some locations, mapping data is unavailable, incomplete, or reliant on emergency policy with legal effect. Refer to the Technical Report for limitations and further information.



## Negotiable natural hazards

Negotiable constraints are those natural hazards weighted as 1 – 7. In areas subject to negotiable constraints, land development must be carefully managed with appropriate consideration and mitigation of any risk. These constraints do not prohibit future land development, but mitigation of risk is likely. These constraints are often managed by operative district plan rules, however, are important to note when assessing all land development constraints in Greater Christchurch.

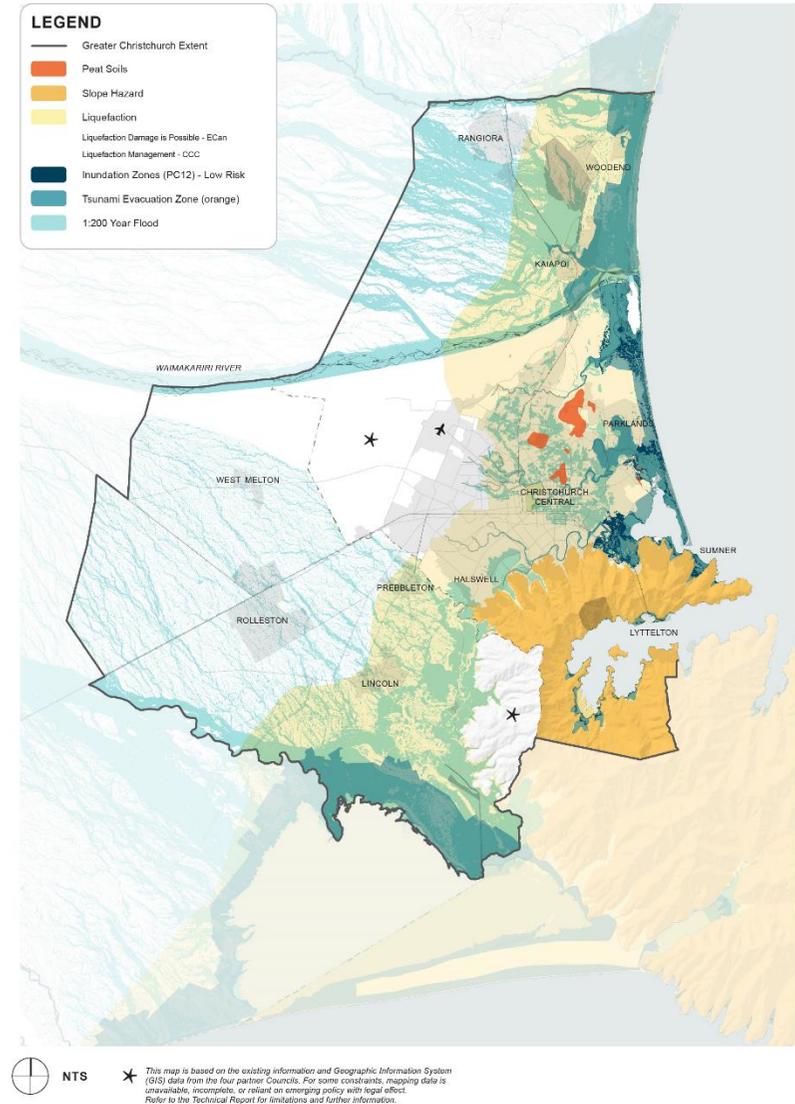
The following are considered negotiable natural hazard constraints:

- flooding (1:200yr)<sup>5</sup>
- tsunami evacuation (orange zone)
- coastal inundation (low and very low)
- rock fall (area 2)
- peat soil
- liquefaction management area
- mass movement (area 2 and 3)
- slope instability (rest of Port Hills)

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<sup>5</sup> The 1:200-year flooding data is provided for Waimakariri and Selwyn. The data used for Christchurch is the Flood Management Overlay but it is noted that this data may not be complete.

**Map of negotiable natural hazards**



## 4.3 Environmental Areas and Features to Protect

Greater Christchurch has many environmental features and landscapes that must be protected from future land development.

The following environmental areas and features to protect have been mapped:

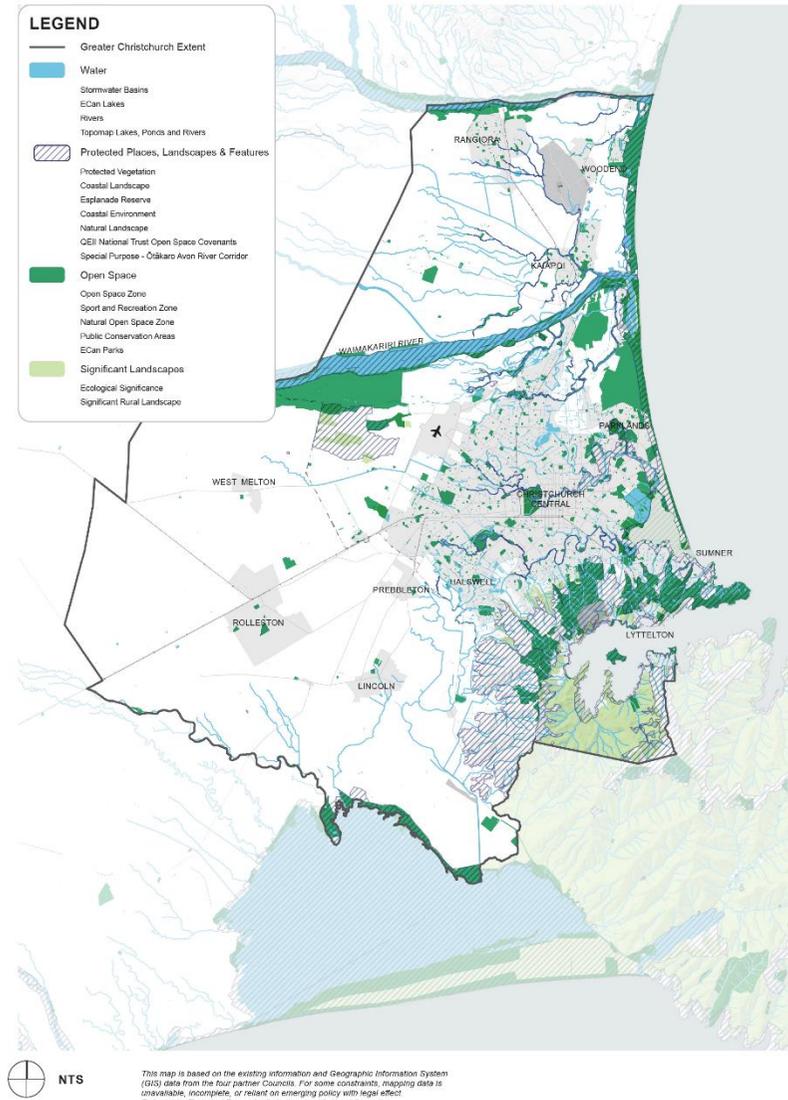
- rivers, lakes, ponds, stormwater basins and margins
- coastal landscape, coastal environment, esplanade reserve
- Protected vegetation, natural landscape
- QEII National Trust Open Space Covenants, Ōtākaro Avon River Corridor
- Open space, parks, public conservation areas,
- Significant rural landscape, ecological significance

### *Rivers, lakes, ponds, stormwater basins and margins*

The Waimakariri River is the largest river in the sub-region, with the Rakahuri / Ashley River to the north, and the Avon Ōtākaro River and Heathcote River in the Christchurch urban area. The sub-region is also a large catchment for Te Waihora / Lake Ellesmere, to the south.

The state of waterways and waterbodies in Greater Christchurch have been degraded over time. Most of our rivers, streams, lakes and coastal waters are in a poor state of cultural health and have water quality issues that require improvement.

**Map of environmental areas and features to protect**



*Protected vegetation, natural landscape, significant rural landscape, ecological significance*

Located partially within the Greater Christchurch sub-region, Banks Peninsula is an important natural feature of the Canterbury region. Most of Banks Peninsula is identified as a significant rural landscape or natural landscape and must be protected from future development. The Waimakariri River Regional Park, and McLeans Island are also shown as areas that need to be protected.

Areas of outstanding or significant natural landscapes and features are also shown as areas that require protection from development.

*Natural character in the coast*

Greater Christchurch also has a large coastal landscape, Pegasus Bay, and Whakaraupō /Lyttelton Harbour, as well as the Avon/Heathcote Estuary. The coastal environment adjoins the coastal marine area boundary and covers urban and natural environments. The coastal environment is highly valued for public access, recreation and Māori customary uses.

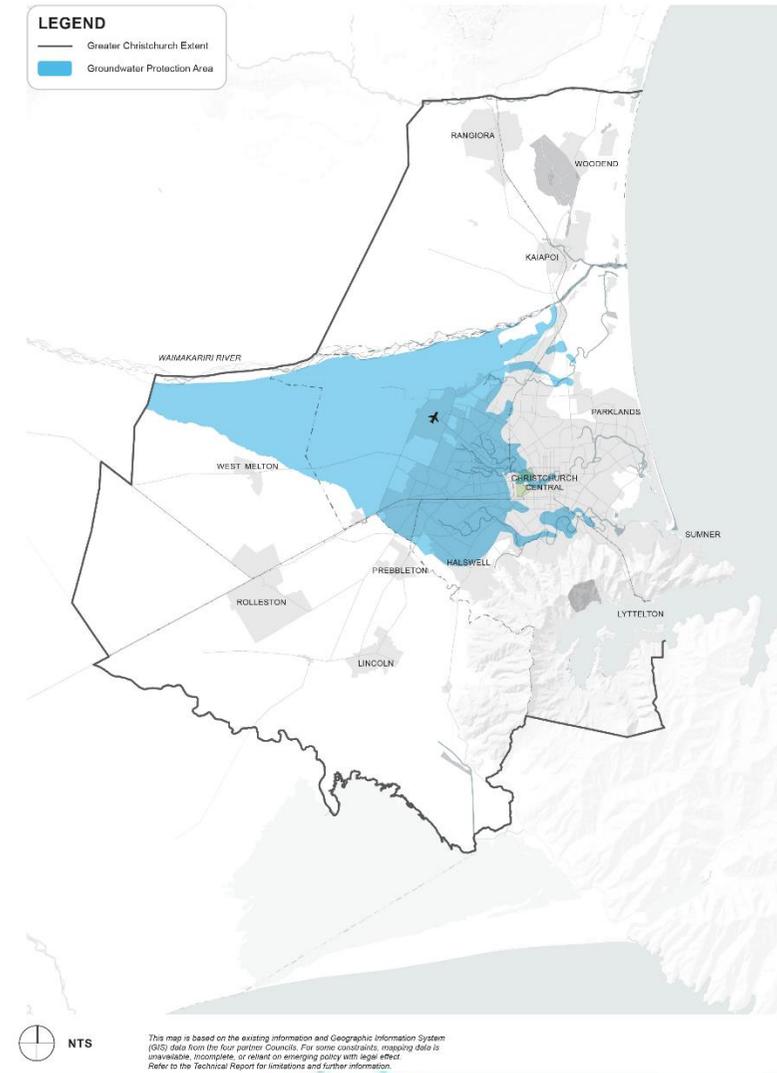
*Parks and Open Spaces*

The Greater Christchurch sub-region has many parks and open spaces ranging in size and location. These areas are important for recreation, sport and leisure activities to serve local communities. Parks and open spaces contribute to improving amenity and neighbourhood design and identity.

*Groundwater*

Greater Christchurch has one of the best supplies of pristine drinking water in the world. The groundwater protection zone is where the groundwater and aquifers are most vulnerable to contamination. Land development for industrial uses in the area must be avoided, and land development for other land uses must be carefully managed.

**Map of groundwater protection zone area to protect from industrial uses**



## 4.4 Highly Productive Land

The Canterbury Plains, within and surrounding the Greater Christchurch sub-region, are predominantly classified as highly productive soils, meaning that the soils are some of New Zealand's most fertile for food production.

The National Policy Statement for Highly Productive Land 2022 (NPS-HPL) was enacted in October 2022. The sole objective of the NPS-HPL is to protect highly productive land, with policies and clauses to avoid subdivision and development. There are some exceptions to this, however these are subject to strict criteria.

The mapping of highly productive land, as per the definition in the NPS-HPL has not yet been notified by Canterbury Regional Council. As the NPS-HPL has immediate legal effect, there is an interim definition of highly productive land that must be used until the regional council has notified the mapping of highly productive land.

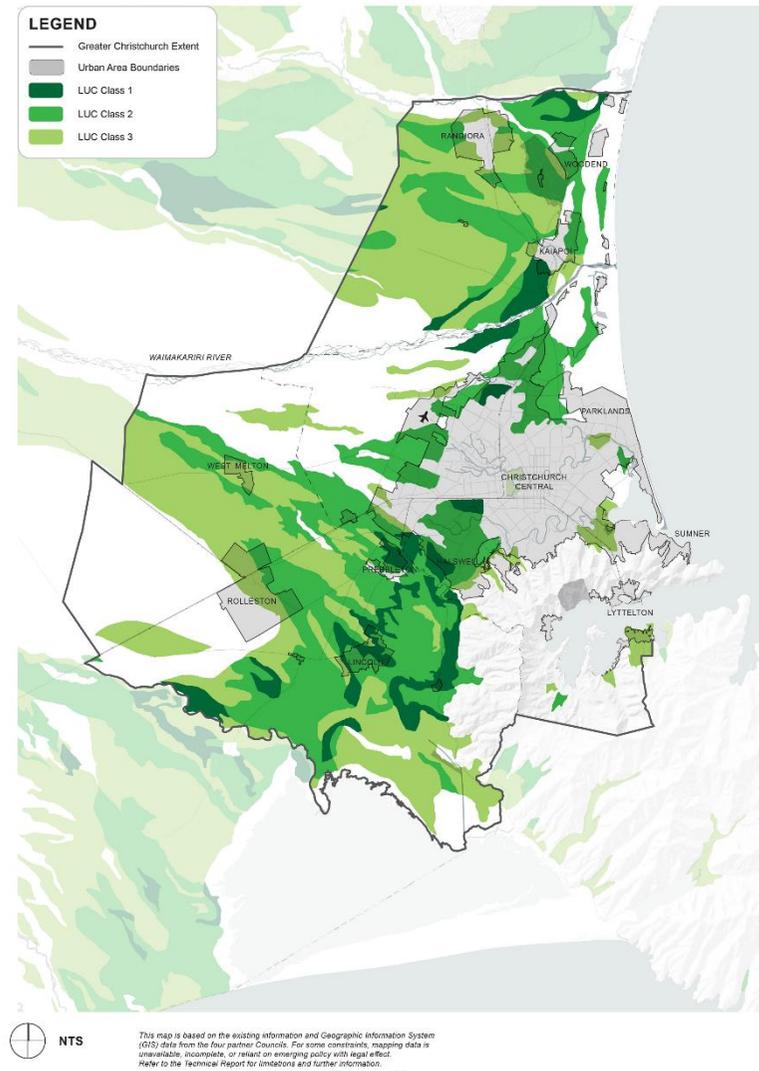
The interim definition of highly productive land is<sup>6</sup>:

- (a)
  - (i) zoned general rural or rural production; and
  - (ii) LUC 1, 2, or 3 land; but
- (b) is not:
  - (i) identified for future urban development; or
  - (ii) subject to a Council initiated, or an adopted, notified plan change to rezone it from general rural or rural production to urban or rural lifestyle.

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<sup>6</sup> Clause 3.5(7)

Map of Land Use Capability (LUC) soil classes 1 – 3



Mapping of Land Use Capability (LUC) Class 1, 2, and 3 soils has been completed<sup>7</sup>, however this mapping has not excluded land identified for future urban development, or land that is subject to a council initiated or notified plan change.<sup>8</sup> Of note, there are future development areas in Waimakariri and Selwyn, and a number of plan changes in the Selwyn District which are exempt from being highly productive land, as per this interim definition.

For the purposes of this report, only land that is LUC 1, 2, and 3 has been mapped. Further information on future development areas, and land subject to plan changes can be found on both the Waimakariri District Council website, and the Selwyn District Council website.

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<sup>7</sup> Mapping completed by Manaaki Whenua Landcare Research

<sup>4</sup> NPS-HPL - Section 3.4(2)



## 4.5 Strategic Infrastructure

The day-to-day function of Greater Christchurch, and the role of the urban area in the wider regional context, is dependent on the operation of significant infrastructure.

Development must be avoided around significant infrastructure to ensure the safety and wellbeing of residents, as well as maintaining the operation, maintenance and upgrades of existing infrastructure.

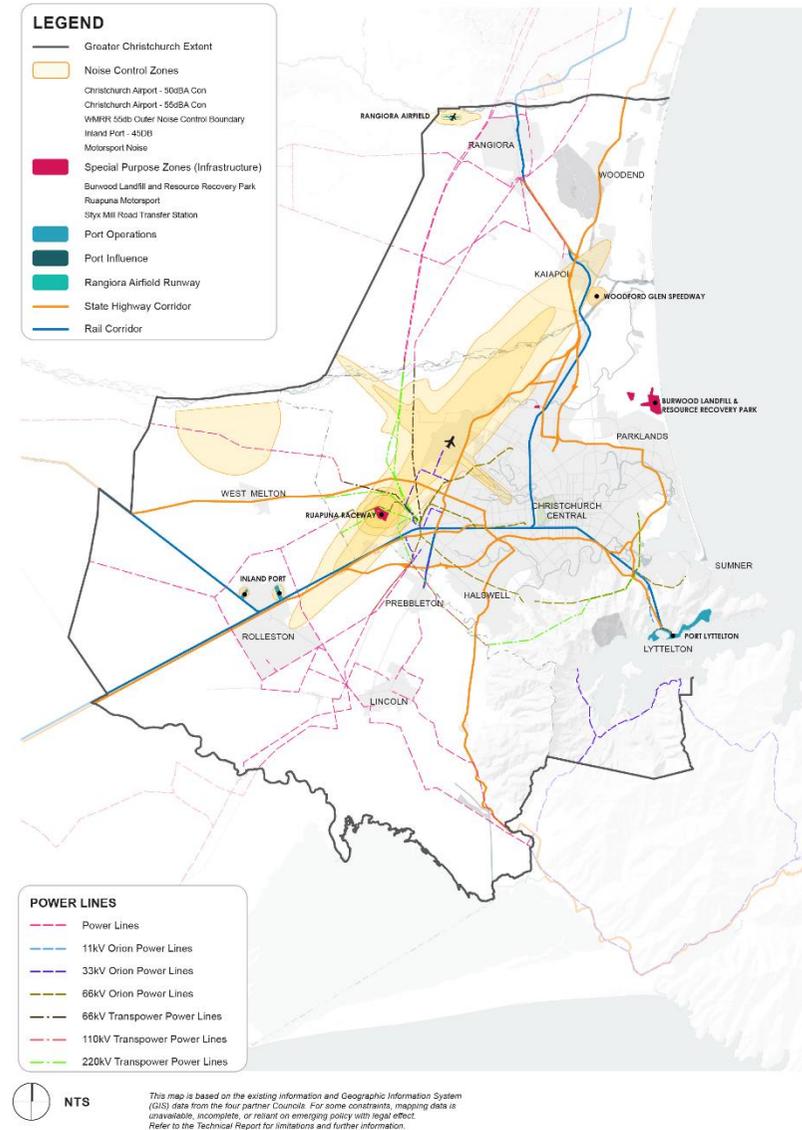
The Canterbury Regional Policy Statement (CRPS) also includes objectives and provisions to achieve development that does not adversely affect strategic infrastructure. The definition of strategic infrastructure in the CRPS includes:

- strategic transport networks
- Christchurch International Airport
- Rangiora Airfield
- Port of Lyttelton
- bulk fuel supply infrastructure including terminals, wharf lines and pipelines
- defence facilities including Burnham Military Camp and West Melton Military Training Area
- strategic telecommunications facilities
- the electricity transmission network
- other strategic network utilities

Strategic infrastructure that must be protected includes:

- airport noise contours (including the Christchurch Airport and Rangiora Airfield)

Map of strategic infrastructure areas to protect



- Lyttelton Port / Inland (Rolleston) Port noise overlay
- electricity transmission corridors
- state highway corridor
- rail corridor

#### *Airport noise contours*

The airport noise contours identify areas that are exposed to aircraft noise from Christchurch Airport. The CRPS requires new noise sensitive activities to be avoided within the 50dBA contour, with limited exceptions. District plan rules also require new development within the 55dBA contour to be restricted or carefully managed.

As part of the Canterbury Regional Policy Statement (CRPS) review, the location, extent and policies relating to the airport noise contours are being reviewed. At the time of writing this technical report, the review has not yet been completed. Therefore, the operative airport noise contours have been mapped.

#### *Port / inland port operations and noise*

Lyttelton Port and the inland port at Rolleston are industrial activities that produce noise, and new development within these noise areas needs to be avoided. The specific rules relating to land use and development within the port / inland port noise areas are managed by the Christchurch District Plan and the Selwyn District Plan.

#### *Electricity transmission corridors*

National grid transmission lines and a number of other electricity transmission lines connect into and go through the Greater Christchurch sub-region. Development needs to be avoided under and around these transmission lines for safety, and maintenance purposes.

#### *State highway and rail corridor*

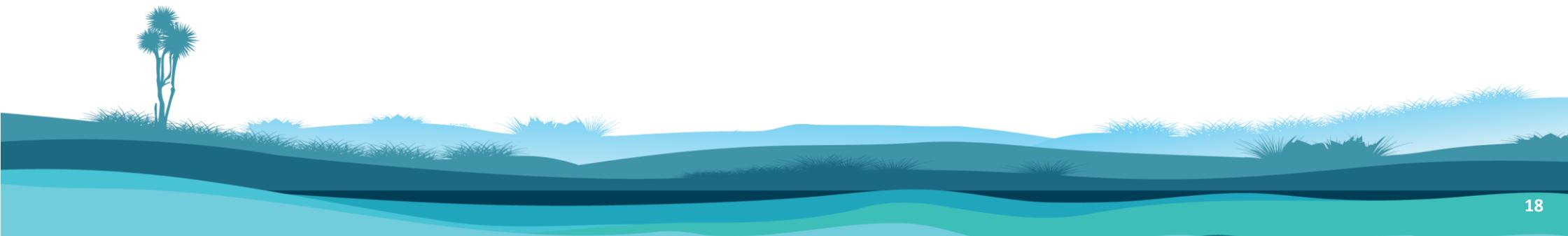
The state highway and rail corridor must be protected to ensure ongoing use and maintenance of key strategic transport infrastructure.

#### *Special purpose zones (infrastructure)*

Burwood landfill is a waste disposal facility. Styx Mill transfer station is a facility for disposing and recycling of refuse. Ruapuna Motorsport is a facility of regional importance, and adverse effects of noise are to be effectively managed.

#### *Quarries*

Although not mapped as significant or strategic infrastructure, it is noted that there are operational quarries, mostly in the west of Greater Christchurch. Quarries can have adverse effects on people such as from noise, as well as dust and air quality effects. Development close to quarries needs to be carefully managed and is done so through district plan rule provisions.



# 5. Conclusion

Greater Christchurch is characterised by the natural environment, and the natural environment is the fundamental foundation to the Greater Christchurch spatial plan, influencing our urban form and future urban development.

As detailed throughout this report, there are sites and areas of significance to Māori, aspects of the natural environment, and infrastructure corridors that need to be protected from any future urban development. There are constraints such as natural hazards and existing infrastructure, where urban development needs to be avoided where the risk to people and property is high. There are also areas subject to natural hazards where, with appropriate mitigation, development may be possible.

This mapping identifies the areas where growth should be avoided, and the areas which should be protected in Greater Christchurch. Consequently, it also identifies areas where growth and urban development are more appropriate.

This work is vital in providing a basis for the Greater Christchurch Spatial Plan, and informing many matters such as urban form, urban growth direction, centres investment, and transportation.

