Draft Cranford Regeneration Plan

Revised Draft Supporting Document

Background information & planning assessment

(Not part of the Cranford Regeneration Plan)

June 2017

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1 Introduction

1.1 Direction set in the Outline - Proposed Cranford Regeneration Plan

The Minister supporting Greater Christchurch Regeneration approved the Outline – Proposed Cranford Regeneration Plan on 23 December 2016. The Outline directs the purpose, scope and process for developing a draft Regeneration Plan for the Cranford area (as identified in *Figure 1*. *The objective of the draft Cranford Regeneration Plan is to support the regeneration of greater Christchurch by investigating the appropriateness of:*

- *enabling urban residential development at the edges of the Cranford Basin which is integrated with the surrounding urban environment and proposed infrastructure works, as well as considering appropriate zones for the remaining parts of Cranford Basin;*
- *providing for and, where possible, enhancing ecological values and Ngāi Tahu cultural values;*
- *implementing a waterway and pedestrian and cycle connection network, including integration with adjoining residential areas, stormwater management areas and the proposed Northern Arterial Extension; and*
- *amending the relevant resource management documents to facilitate and expedite the above development specifically the Canterbury Regional Policy Statement and the Christchurch District Plan, and any other applicable Plan[1], strategy, or other RMA document[2] where relevant.*

1.2 Document purpose and structure

The purpose of this document is to provide background information and a planning assessment of the investigation to determine the appropriateness of enabling urban residential development in parts of the draft Plan area to achieve the objective of the Outline and the purpose of the Greater Christchurch Regeneration Act (the Act).

This document provides the supporting information for the draft Cranford Regeneration Plan and responds to questions raised during consultation with the Parties on the development of the draft. The document is divided into three parts to respond to issues raised in the investigation as follows:

Part A	Describes the existing environment and backgrounds the history of past rezoning attempts in the draft Plan area. Sets out the relevant legislation and strategic planning documents that establish the high level policy directions when considering land use changes.

[1] As defined by the Greater Christchurch Regeneration Act 2016.

[2] As defined by the Greater Christchurch Regeneration Act 2016.

Part B	Identifies the matters investigated (through technical reports identified in Appendix 1 to determine what the effects and implications of enabling urban residential development in the draft Plan area may be. It provides an overall summary as to whether development is appropriate. Explores the wider implications of whether urban residential development in the draft Plan area is necessary to address residential land demand and supply.
Part C	Describes the proposal that will inform the draft Cranford Regeneration Plan. Establishes the vision and goals, steps through a series of decisions to determine what future land use options are appropriate and what the preferred option is. Identifies changes to resource management documents. Provides an overall assessment of the proposal against the Act to determine if it is regeneration.

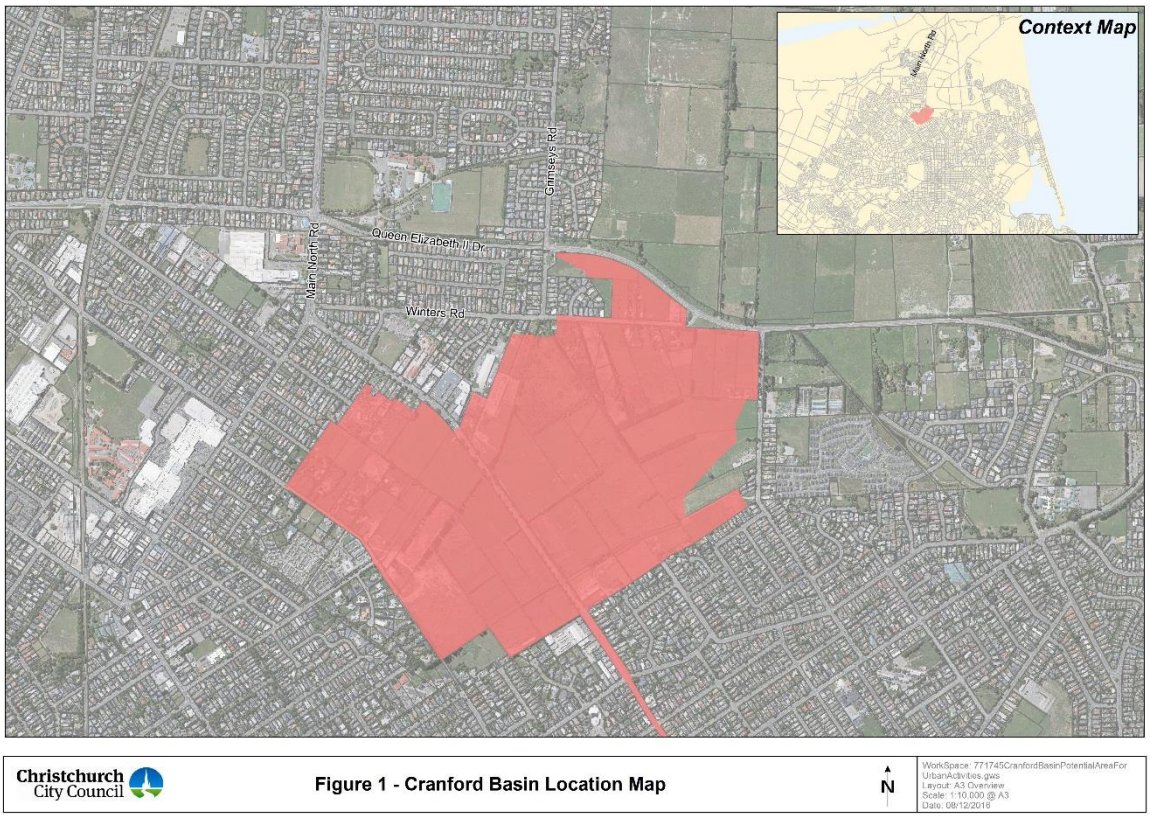

Figure 1: Extent of the Cranford Area subject to the development of a draft Cranford Regeneration Plan

PART A. EXISTING ENVIRONMENT AND STRATEGIC CONTEXT

2 Existing Environment

2.1 General Description

The Plan area compromises approximately 125 hectares (including existing and proposed roads) of mostly low lying rural land located to the north of Central Christchurch. It is bounded by QEII Drive to the north, Philpotts Road to the east and the suburbs of Papanui to the west, St Albans to the south east and Mairehau to the east. Cranford Street bisects the Plan area.

In general the area is characterised by a green open rural landscape arranged in a loose grid pattern of cropped fields and pasture, transected by rural fences, shelterbelts, open drains and wood lined drains.

In terms of built form, on the west side of Cranford Street there are approximately six dwellings on lifestyle blocks in the Grassmere Street area while the Top 10 Holiday Park is located off Cranford Street.

The Cranford Basin, and the rural area surrounding it comprises highly variable complex geotechnical and hydrogeological conditions. Understanding in detail the constraints and opportunities afforded by these conditions is critical to planning any development in the Cranford area.

2.2 Land ownership

The draft Plan area is in a mix of public and private land ownership. The Council and the New Zealand Transport Authority (NZTA) own the majority, reflect the land designed for stormwater and roading purposes as shown on *Figure 2* (not labelled). The remainder is in private ownership and can be described as three distinct areas:

- Area A consists of the private land adjoining Grassmere Street and Cranford Street. This area is also referred to as the Grassmere block.
- Area B consists of private land fronting the eastern side of Cranford Street, on the southern edge of the draft Plan area. This area is also referred to as the Case/Crozier land.
- Area C is the remaining private and/or Council land to the north of the Cranford Basin stormwater management area.

Figure 2: Distribution of public and private land ownership in the Cranford Area **(Refer to 2.2 above)**

3

2.3 Background

2.3.1 Site History

At the time of European colonisation, the draft Plan area was low lying site dominated by raupo and tussock swamp, toi toi flax and grass and broken ground and surface water. Ngāi Tahu and before them Ngāti Mamoe and Waitaha had settlements among, and gathered resources from, the network of springs, waterways, swamps, grasses and podocarp forests in the Christchurch area.[4] While no archaeological sites or silent files areas have been identified, it is likely the site would have been used for mahinga kai and other cultural purposes[5].

[3] NoR is Notice of Requirement. These have now become designations in the District Plan.

[4] Landscape Ecology Report, CCC October 2013.

[5] Cultural Impact Assessment for Cranford Basin – Proposed rezoning for urban activities, Prepared by Tipa & Associates on behalf of Te Ngāi Tūāhuriri Rūnanga, August 2016.

Since European settlement the draft Plan area has been drained and used for grazing and intensive cultivation of soils for market gardening. The low lying nature of the area and the high groundwater tables has necessitated extensive draining and pumping to maintain the productivity of the area. Council has also implemented stormwater works in the basin including the Upper Dudley Creek diversion.

Considerable ground subsidence has occurred over this period. The bearing capacity of the soil for buildings and structures is very low and it is sensitive to lowering of groundwater levels. Historically the floor of the Cranford Basin has subsided at an average rate of approximately 20 mm per annum due to shrinkage of the peaty soil. Cranford Basin has become increasingly unsuitable for horticultural use as ground levels have subsided, the frequency of inundation has increased and as the economies of market gardening in Christchurch have changed.

Suburban development now surrounds the draft Plan area, however it remains predominantly a rural landscape as a result of its low lying topography, compacting peat soils, high water table and servicing constraints.

2.3.2 Past rezoning attempts

The notion of urban development in the draft Plan area has been the subject of several planning processes at district and regional level over the past twenty years. Submissions to the notified City Plan in 1995 sought residential zoning over extensive parts of the draft Plan area, but these were rejected by the Council, and no appeals were lodged. From around 2002 to 2007 several informal approaches were made by landowners and others seeking rezoning in parts of the draft Plan area due to problems being experienced with farming the land. These proposals did not progress, principally because of the land being flood-prone, insufficient knowledge about the geotechnical nature of the land, and severe servicing constraints including wastewater and access. The draft Plan area was considered as a possible greenfield development area as part of preparing the Greater Christchurch Urban Development Strategy (UDS) in 2007, but was discounted due to these infrastructure issues.

The UDS relied on Proposed Change 1 (PC1) (notified in 2009) to the CRPS for its implementation. A number of landowners lodged submissions to PC1 seeking residential rezoning over the higher parts of the draft Plan area. The Commissioners' recommendations recognised the opportunities for development but considered more investigative work was needed. They identified the draft Plan area as a Special Treatment Area, and included it inside the Urban Limits (now referred to as the “Projected Infrastructure Boundary” or PIB). The Commissioners’ noted development would achieve urban consolidation, which is a fundamental principle of the UDS and the CRPS. The Commissioners' decisions were appealed by various parties, and these appeals had just got underway when the February 2011 earthquakes struck.

The PC1 process was subsumed into the Land Use Recovery Plan (LURP), developed under the Canterbury Earthquake Recovery Act. In the submission phase preceding the gazetting of the LURP in December 2013, Council Officers recommended that consideration be given to rezoning those parts of the Plan area for residential purposes not required for stormwater detention and the NAE. However, the final LURP did not include the draft Plan area as a greenfield priority area, within the existing urban area or PIB because the Council submitted that it would be premature to delineate the boundaries for any future development area until the proceedings on Notices of Requirements for the Northern Arterial Extension and stormwater facility were concluded and their areas finalised.

2.3.3 Notice of Requirement for stormwater area and Northern Arterial Extension

In 2011, the Council confirmed options on the preferred northern access route into the City following investigations in 2009, which was an extension of the Northern Arterial to Cranford Street. The Council had also undertaken extensive stormwater modelling on the use of the Cranford Basin as part of a wider stormwater management scheme. Notices of Requirement (NoR) for a stormwater management area, the Northern Arterial Extension (NAE) and the Cranford Street Upgrade (CSU) were lodged with the Council on 6 November 2013. The NoRs for stormwater and the NAE were both confirmed in July 2015 and designations put into the District Plan. This established the future land use of a significant part of the draft Plan area (approximately 56 ha).

2.3.4 Christchurch District Plan (CDP)

The Plan area was notified as Rural Urban Fringe (RuUF) in Stage 3 of the proposed Christchurch Replacement District Plan. This zoning was confirmed in decisions released by the Independent Hearings Panel (IHP). The planning maps include the designations for the stormwater management area and NAE, and a flood hazard overlays over parts of the draft Plan area.

Submissions were received from several landowners seeking residential zoning as part of the Replacement District Plan process. In response to these submissions, the Council commissioned a number of technical assessments to inform the development of options for land use zoning for the draft Plan area.

The Section 32 report determined that the most appropriate option would be to rezone the area residential. Several residential options were analysed including an option which could theoretically yield approximately 600-700 houses at 15hh/ha to meet the greenfield priority area requirements in the CRPS. However the Section 32 report concluded that a low density, open and landscaped environment potentially yielding 200-250 houses is the most effective option for reducing risks of subsidence and other unforeseen changes to soils and water conditions.

Whilst acknowledging that the submissions had some merit, officers recommended against accepting the submissions because the land was outside the Projected Infrastructure Boundary. In its decision[6], the Independent Hearings Panel declined to rezone the land in the draft Plan area to residential because it was outside the PIB in the CRPS. The decision stated:

[37] We are also strongly of the view that even if the LURP was amended to provide additional areas for future urban activities within Christchurch, evidence would need to show that residential development in Cranford Basin was necessary from a demand perspective and relative to the merits of other possible sites potentially available for development in Christchurch. It would also need to consider the intensification targets for housing sought for Christchurch, and the impact on those targets. This requirement negates the inclusion of a deferred residential zoning being immediately uplifted upon Map A of the CRPS being amended.

[6] Decision 20 Chapter 14 Residential (Part) and Chapter 17 Rural (Part) Cranford Basin – Stage 3, Independent Hearings Panel Christchurch Replacement District Plan, 1 April 2016.

[38] As discussed at the hearing, the recommendation of the Canterbury Regional Council on the LURP outlines that there is likely to be sufficient greenfield land that is, or will become, available for development to meet demand in greater Christchurch for the next 10 to 15 years. As such, the Canterbury Regional Council considers it is not necessary for recovery to identify any further land as greenfield priority areas.

Since that decision was released, the Government has adopted a National Policy Statement on Urban Development Capacity which places certain obligations on the Council to ensure there is sufficient feasible development capacity available in the City in the short medium and long terms. This matter is further covered in Section 6 below.

2.4 Summary

The Plan area constitutes an anomaly in the overall form of Christchurch, reflecting part of the area's susceptibility to flooding, past infrastructure, constraints and unknown or challenging geotechnical conditions. Consequently the area has not been a priority for servicing. For all these reasons the area has been excluded from being considered for urban development up until now. With the construction of the stormwater basin and NAE now underway, wastewater disposal provided for, and detailed geotechnical work completed over part of the Plan area, the land not required for designated works can now be considered for residential development.

3 Statutory Context

3.1 Greater Christchurch Regeneration Act (the Act)

There are two key questions arising under the Act (section 11) that must be considered when developing a regeneration plan:

1. Whether Ministerial approval of the Regeneration Plan is in accordance with one or more of the purposes of the Act;

2. Whether the Minister can reasonably consider it necessary to approve the regeneration Plan so as to achieve the changes sought in the Regeneration Plan.

3.1.1 These questions are discussed further in Section 8. Purpose of Act

(1) This Act supports the regeneration of greater Christchurch through the following purposes:

(a) enabling a focused and expedited regeneration process:

(b) facilitating the ongoing planning and regeneration of greater Christchurch:

(c) enabling community input into decisions on the exercise of powers under section 71 and the development of Regeneration Plans:

(d) recognising the local leadership of Canterbury Regional Council, Christchurch City Council, Regenerate Christchurch, Selwyn District Council, Te Rūnanga o Ngāi Tahu, and Waimakariri District Council and providing them with a role in decision making under this Act:

(e) enabling the Crown to efficiently and effectively manage, hold, and dispose of land acquired by the Crown under the Canterbury Earthquake Recovery Act 2011 or this Act.

In this Act,—

regeneration means—

(a) rebuilding, in response to the Canterbury earthquakes or otherwise, including—

(i) extending, repairing, improving, subdividing, or converting land:

(ii) extending, repairing, improving, converting, or removing infrastructure, buildings, and other property:

(b) improving the environmental, economic, social, and cultural well-being, and the resilience, of communities through—

(i) urban renewal and development:

(ii) restoration and enhancement (including residual recovery activity)

urban renewal means the revitalisation or improvement of an urban area, and includes—

(a) rebuilding:

(b) the provision and enhancement of community facilities and public open space.

Refer to Section 10 for a detailed explanation.

3.1.2 The test for the Minister to use a power

Section 11 of the Act provides:

11. Conditions applying to exercise of powers by Minister or chief executive

(1) A Minister or a chief executive must ensure that, when he or she exercises or claims his or her powers, rights, and privileges under this Act, he or she does so in accordance with 1 or more of the purposes of the Act.

(2) A Minister or a chief executive may exercise or claim a power, right, or privilege under this Act where he or she reasonably considers it necessary.

(3) This section is subject to sections 77, 85, 91, 92, 93, 94, 107, 141, 142, and 143.

Refer to Section 10 for a detailed explanation.

3.2 Resource Management Act

Any proposed changes to the Christchurch District Plan and the Canterbury Regional Policy Statement, the proponent has also had regard to the purpose of the Resource Management Act (RMA). This is because those documents are intended to achieve the purpose of the RMA and the provisions inserted in them will be applied so as to achieve that purpose (subject to the section 60 of the Act's duty to not make a decision that is inconsistent with a Regeneration or Recovery Plan).

Under Section 2 of the RMA, *sustainable management means 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 well-being 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.

There are matters under Section 6, Matters of National Importance that must be recognised and provided for including:

(e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu, and other taonga:

and matters under Section 7 that particular regard must be had to including:

(b) the efficient use and development of natural and physical resources:

(c) the maintenance and enhancement of amenity values:

(d) intrinsic values of ecosystems:

(f) maintenance and enhancement of the quality of the environment:

(g) any finite characteristics of natural and physical resources:

(i) the effects of climate change:

(j) the benefits to be derived from the use and development of renewable energy.

3.3 Canterbury Earthquakes (Christchurch Replacement District Plan) Order 2014

Schedule 7 clause 2A of the Act extends the revocation date of the Canterbury Earthquakes (Christchurch Replacement District Plan) Order 2014 (Order) to 30 June 2021. Clause 4(1) of the Order provides that from the commencement of that Order the Council must not notify a proposed plan under the RMA. Accordingly, the Council cannot notify a Plan Change under Schedule 1 of the RMA until after 30 June 2021 unless the Order is revoked.

4 Strategic Planning Context

4.1 Strategic planning documents

The following table summarises the higher level policy directions that are relevant when considering potential land use changes in the draft Plan area. Appendix 3 contains a detailed assessment of the preferred land use changes against the specific objectives and policies of the Canterbury Regional Policy Statement and the Christchurch District Plan.

Document (Statutory obligation in italics)	**Relevant provisions**
Canterbury Regional Policy Statement (CRPS) – *Christchurch*	*Chapter 6 Recovery and Rebuilding of Greater Christchurch* of the CRPS is of particular relevance. The chapter was inserted through the Land Use Recovery

Document (Statutory obligation in italics)	Relevant provisions
District Plan must give effect to	Plan (LURP), which was approved by the Minister for Canterbury Earthquake Recovery and gazetted on 6 December 2013. The following provisions in the CRPS relate to urban development: *Objective 6.2.1 Recovery Framework: This* outlines the land use and infrastructure framework for recovery, rebuilding and development in Greater Christchurch. This framework seeks to avoid urban development outside of existing urban areas or greenfield priority areas for development, unless expressly provided for in the CRPS. Policy 6.3.1 supports this objective to give effect to the urban form identified on Map A, which identifies the location and extent of urban development to support recovery, rebuilding and planning for future growth and infrastructure delivery. The draft Plan area is not identified as an existing urban area or a greenfield priority area in Map A. To enable urban residential development in the draft Plan area, Map A would need to be amended to include the area. *Objective 6.2.2 – Urban form and settlement pattern*: This objective seeks an urban form in Greater Christchurch that achieves consolidation and intensification, and avoids unplanned expansion of urban areas. The urban form will be achieved through intensification targets, provision of higher density living environments around Key Activity Centres, and development of greenfield priority areas on the periphery of Christchurch's urban area to meet anticipated demand and enables efficient provision and use of network infrastructure. Residential yields and locations are specified in Policy 6.3.7 while Policy 6.3.3 specifies the requirements for outline development plans for greenfield priority areas. The draft Plan area is in close proximity to the Papanui/Northlands Key Activity Centre (KAC). *Objective 6.2.3 – Sustainability*: This objective requires that recovery and rebuilding is undertaken in Greater Christchurch that provides for quality living environments incorporating good urban design, retains values of importance to Tangata Whenua; provides a range of densities and is healthy and environmentally sustainable. This is supported by Policy 6.3.2 which specifies the criteria expected for good urban design. *Objective 6.2.4 – Integration of transport infrastructure and land use:* This objective prioritises the planning of transport infrastructure so it maximises integration with priority areas and new settlement patters. It also needs to promote the use of active and public transport modes, optimise use of existing capacity within the network and reduce dependency on private motor vehicles. *Objective 6.2.5 – Key activity and other centres:* This objective supports and maintains the existing network of centres as focal points of commercial, community and service activities, to ensure their function and viability. The Papanui/Northlands KAC is the closest centre to the draft Plan area. *Chapter 11 Natural Hazards*

Document (Statutory obligation in italics)	Relevant provisions
	The approach to natural hazards, in particular for High Hazard Areas, in the CRPS is a policy constraint to urban development, and provides clear direction when considering areas for urban development. Objective 11.2.1 seeks to avoid new subdivision and development that increases natural hazard risks to people and property. Policy 11.3.1 in particular is relevant to areas of high hazard: *"To avoid new subdivision, use and development (except as provided for in Policy 11.3.4) of land in high hazard areas, unless the subdivision, use or development:* *(1) is not likely to result in loss of life or serious injuries in the event of a natural hazard occurrence; and* *(2) is not likely to suffer significant damage or loss in the event of a natural hazard occurrence; and* *(3) is not likely to require new or upgraded hazard mitigation works to mitigate or avoid the natural hazard; and* *(4) is not likely to exacerbate the effects of the natural hazard; or* *(5) is proposed to be located in an area zoned or identified in a district plan or Chapter 6 of the CRPS for urban residential, industrial or commercial use, at the date of notification of the CRPS, in which case the effects of the natural hazard must be mitigated."* The CRPS defines High Hazard Areas as *"1. flood hazard areas subject to inundation events where the water depth (metres) x velocity (metres per second) is greater than or equal to 1, or where depths are greater than 1 metre, in a 0.2% AEP flood event;* *2. land subject to coastal erosion over the next 100 years; and* *3. land subject to sea water inundation (excluding tsunami) over the next 100 years.* *When determining high hazard areas, projections on the effects of climate change will be taken into account."* Policy 11.3.2 manages areas outside of high hazard. The Christchurch District Plan identifies natural hazard risks, including High Hazard Areas.
Canterbury Land and Water Regional Plan - *District Plan must not be inconsistent with*	The draft Plan area is located within the area covered by the Christchurch – West Melton sub-chapter (Chapter 9). This chapter contains specific policies and rules for stormwater and drainage water.
Pūharakekenui/ Styx River Catchment Tauaki Wai Pataua/ Vision and Values (July 2016) – *District Plan should have regard to*	This document establishes the vision for the Pūharakekenui/Styx River Catchment and how it will be realised.
Land Use Recovery Plan (LURP) – *District Plan must not be inconsistent with*	The LURP established land use policies and rules to assist rebuilding and recovery of communities (including housing and businesses) that have been disrupted by the earthquakes, helping to achieve the vision of the Recovery Strategy for Greater Christchurch: Mahere Haumanutanga o Waitaha.

Document (Statutory obligation in italics)	Relevant provisions
	The LURP seeks greater housing choice and encourages more intensive housing developments which allow people to live close to existing communities and facilities. The LURP also refers affordable housing, and while there is no agreed definition as to what constitutes 'affordable housing', given the land development costs, any residential development that may stem from the draft Plan area is unlikely to be considered affordable. The LURP required the review of the Christchurch District Plan to provide for housing choice, affordability, community facilities, intensification, revitalising neighbourhood centres, improved accessibility, the building of new communities, and streamlining regulation. A target of 23,700 additional households to be created in Christchurch City by 2028 was set. The LURP directed changes to the CRPS requiring Council to give effect to the urban form identified on Map A, which did not include the draft Plan area within the projected infrastructure boundary (PIB). In April 2016, the Minister for Canterbury Earthquake Recovery (now the Minister supporting Greater Christchurch Recovery), under section 22 of the Canterbury Earthquake Recovery Act 2011, amended the LURP by making "Figure 4: Map A Greenfield Priority Areas 'indicative' only". The reason for the amendment was given as *"Making Figure 4 'indicative' only will allow changes to Map A in Chapter 6 of the Canterbury Regional Policy Statement through normal Resource Management Act processes, and will provide clarity to decision-makers when determining rezoning or resource consent matters."* A key question is whether amending Map A in the CRPS to remove the PIB around the draft Plan area is inconsistent with the LURP. The rationale for the proposed change to the LURP was to allow changes to Map A of Chapter 6 of the CRPS, as is being sought through the proposed Regeneration Plan. However, changing the CRPS through a Regeneration Plan is not a 'normal RMA process.' Notwithstanding that, the map is 'indicative only', and therefore it is considered that the LURP is not required to be changed as part of this process.
Mahaanui Iwi Management Plan (IMP)	The IMP directs that participation and particular interests of Ngāi Tahu Papatipu Rūnanga are recognised and provided for in urban and township planning. It also requires recognising and providing for sites and places of importance and special values to tangata whenua; A Cultural Impact Assessment has been prepared for the draft Plan area as part of this process and this is discussed in section 5.6 of this document.
Christchurch Replacement District Plan (Operative provisions)	*Chapter 3 Strategic Directions* establishes the overall framework for the District Plan. The key objective in relation to land use change in the draft Plan area is: *3.3.7 Objective - Urban growth, form and design* *A well-integrated pattern of development and infrastructure, a consolidated urban form, and a high quality urban environment that:*

Document (Statutory obligation in italics)	Relevant provisions
	1. *Is attractive to residents, business and visitors; and* 2. *Has its areas of special character and amenity value identified and their specifically recognised values appropriately managed; and* 3. *Provides for urban activities only:* 1. *within the existing urban areas; and* 2. *on greenfield land on the periphery of Christchurch's urban area identified in accordance with the Greenfield Priority Areas in the Canterbury Regional Policy Statement Chapter 6, Map A; and* 4. *Increases the housing development opportunities in the urban area to meet the intensification targets specified in the Canterbury Regional Policy Statement, Chapter 6, Objective 6.2.2 (1); particularly:* 1. *in and around the Central City, Key Activity Centres (as identified in the Canterbury Regional Policy Statement), larger neighbourhood centres, and nodes of core public transport routes; and* 2. *in those parts of Residential Greenfield Priority Areas identified in Map A, Chapter 6 of the Canterbury Regional Policy Statement; and* 3. *in suitable brownfield areas; and* 5. *Maintains and enhances the Central City, Key Activity Centres and neighbourhood centres as community focal points; and* 6. *Identifies opportunities for, and supports, the redevelopment of brownfield sites for residential, business or mixed use activities; and* 7. *Promotes the re-use and re-development of buildings and land; and* 8. *Improves overall accessibility and connectivity for people, transport (including opportunities for walking, cycling and public transport) and services; and* 9. *Promotes the safe, efficient and effective provision and use of infrastructure, including the optimisation of the use of existing infrastructure; and* 10. *Co-ordinates the nature, timing and sequencing of new development with the funding, implementation and operation of necessary transport and other infrastructure.* This objective gives effect to the objectives of the CRPS, as previously outlined. The main obstacle to applying this objective is that the draft Plan area is identified as part of the urban area on Map A in the CRPS. *Zoning* The draft Plan area is zoned Rural Urban Fringe (RuUF). The Rural Urban Fringe Zone encompasses the flat land adjoining the main Christchurch urban area. It is highly fragmented and used for horticultural, agricultural, quarrying, lifestyle and recreation activities. A range of rural productive activities are provided for and residential units are permitted on a minimum site size of 4ha. *Overlays*

Document (Statutory obligation in italics)	Relevant provisions
	Parts of the draft Plan area are subject to natural hazard overlays which manage buildings, filling and subdivision. The relevant overlays are: a. Liquefaction Management Area – requires consideration when subdivision creates additional vacant allotments. b. Flood Management Area – applies over the eastern part of the draft Plan area (and in adjoining neighbourhoods). New buildings, and earthworks area a restricted discretionary activity. c. Flood Ponding Management Area – This overlay applies to the majority of the eastern part of Cranford Street through to Winters Road. d. High Flood Hazard Management Area – This overlay applies to parts of the eastern part of Cranford Street through to Winters Road. Detailed technical assessments have been completed as part of this process to address these matters.

4.2 Summary

As outlined above there are a number of strategic planning documents that need to be considered for any land use changes in the draft Plan area. These documents have various levels of statutory obligation ranging from giving effect to, having regard to and to not be inconsistent with. These documents are essential to ensure any land use changes achieve the overall planning framework for Greater Christchurch. The most important considerations, and constraints, are the need to amend the CRPS to include the draft Plan area within the urban area to enable urban residential development to then be considered in the Christchurch District Plan.

PART B. CAPACITY AND CONSTRAINTS ON URBAN RESIDENTIAL DEVELOPMENT

5 Effects of enabling urban residential development in the Cranford area

This section describes the issues, informed by the various technical documents in Appendix 1, relating to the ground conditions, infrastructure, natural hazard risks, strategic transport, land contamination and public open space for the draft Plan area. These issues are fundamental considerations to enabling urban residential development, which follows the methodology outlined in Appendix 4. The implications of each issue for enabling such development are assessed below, including any mitigation that may be necessary. In other words, this section identifies whether an issue will prevent urban residential development from occurring or if it will place limitations or specific requirements on it.

The appropriateness of urban residential development has been assessed at a broad level across the draft Plan area and then in more detail for those areas where there is more information. The draft Plan area was then divided into four distinct spatial areas to carry out more detailed investigations as illustrated in *Figure 3*.

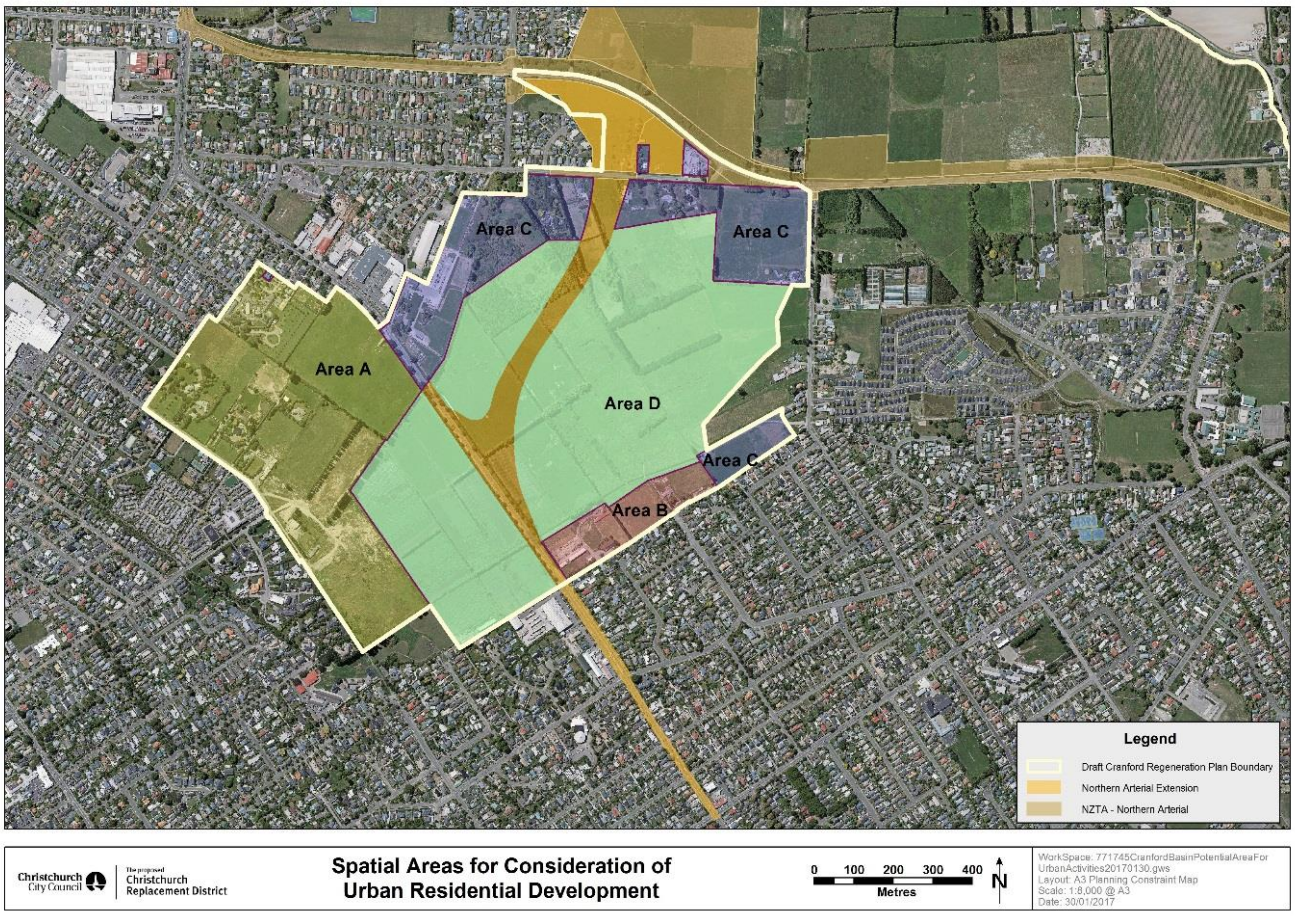

Figure 3: Spatial areas for consideration of Urban Residential Development

5.1 Soil types

The majority of the soils in the Cranford regeneration plan area are classified as Waimairi moderately deep peaty loam' and described as 'moderately versatile'[7] (see *Figure 4*, Area 1). They are usually capable of high production levels though are more limited in their range of crops compared to more versatile land. Yields also may be lower than more versatile land with higher levels of management inputs. The area is considered to have inadequate aeration, which is known to have marked effects on root function. Further, the soil is considered to have a low bearing strength, commonly due to wetness, may result in loss of traction and soil compaction. Theses soils are those with a high water table requiring regional drainage. Such modification would add significantly to land development costs. Further additional local site drainage is probably necessary for urban development. These soils have a high value for horticultural production, if drained.

A small part of the Cranford Area are classified Kiapoi Deep Silt Loam (Area 2 on *Figure 4*) and described as 'moderately versatile'. These are recognised as usually capable of high production levels though are more limited in their range of crops compared to more versatile land. Yields also may be lower than more versatile land and higher levels of management inputs. This part of the area is considered to have inadequate aeration, which is known to have marked effects on root function. Further, the soil is considered to have a low bearing strength, commonly due to wetness, and may result in a loss of traction and soil compaction.

These soils are suitable for both horticultural and urban uses. They have high horticultural versatility or will, if appropriate drainage occurs. These soils require consideration for protection under a 'Green Belt' framework.

The soils in Area 3 in *Figure 4* have a very low versatility and are described as Taitapu Deep Silt Loam. Growth of a wide range of crops is likely to be severely limited and/or crop production would require high levels of management inputs. There is inadequate aeration and this is known to have marked effects on root function, and under severe conditions crop failure can occur.

Area 3 soils are those with a high water table requiring regional drainage. Such modification would add significantly to land development costs. Further additional local site drainage is probably necessary for urban development. These soils have a high value for horticultural production, if drained.

[7] Land Resource Evaluation of Christchurch City; T H. Webb, S. M. Smith, & B.B Trangmar; DSIR Contract Report 91/4 February 1991.

Figure 4: Soils

Implications for enabling Residential Development

Developing the land for urban purposes will involve the loss of land suitable for high value horticultural production. However Chapter 6 of the Canterbury Regional Policy Statement (Recovery and Rebuilding of Greater Christchurch) does not attach any importance to protecting high quality horticultural soils. Objective 6.2.1 of the CRPS places greater emphasis on protecting landscapes, indigenous biodiversity and hazard avoidance when planning for the future growth of urban Christchurch. This is in keeping with the changes in matters of national importance that were made when the RMA replaced the former Town and Country Planning Act in 1991.

As discussed in Section 9.1 below, the economic efficiency and viability of market gardening of the land remaining outside of the stormwater basin is highly questionable.

5.2 Geotechnical conditions

Extensive parts of the draft Plan area, particularly in the Cranford Basin stormwater management area, are low-lying with high winter groundwater levels. The peaty soils within the Cranford Basin and surrounding area are up to 4m deep. Groundwater is within 1 to 1.5 metres of the ground surface, both in the Basin and in surrounding areas and can reach the ground surface as water table or springs in the lowest parts of the Basin. Groundwater has

been controlled by drainage and pumping to facilitate intensive cultivation of the fertile soils over the last 100 years.

Geotechnical investigations have determined that the area is characterised by a variable topsoil layer underlain by silts, sandy silts and silty sands to approximately 5 to 7 below ground level (bgl). Incorporated in this are thin peat lenses (up to 0.5m) and thicker organic silt layers typically 1 to 2 m thick. Some areas have minimal organic material present. Beneath this material is sand, gravelly sand and sandy gravel encountered in layers approximately 3.0 m thick. These are underlain by sand with varying silt content until the Riccarton Gravels are encountered at approximately 20m bgl. Ground water has been recorded in investigation logs between 0.5 and 3.7 m bgl. Where peat is present on site it is likely to be saturated, providing a higher groundwater level (GHD, 2015).

There have been a number of geotechnical reports undertaken on parts of the draft Plan area over the years, including at the time of Proposed Change 1 to the Canterbury Regional Policy Statement (refer to Section 2.3.2 of this report) and as a part of submissions seeking the rezoning of land to residential, in the vicinity of Cranford Basin, in the Christchurch District Plan (refer to Section 2.3.4 of this report). For the development of the draft Plan, Beca undertook a review of geotechnical, hydrological and stormwater evidence (including various reports)[8] that were presented by Council experts at the Christchurch District Plan hearings on submitters relief for rezoning parts of Cranford Basin. Beca also prepared a preliminary geotechnical assessment on the Grassmere block, which covered a significant part of Area A.[9]

The draft Plan area is located in the Liquefaction Management Area in the Christchurch District Plan, as with large parts of the flat land in Christchurch. This requires additional assessment at the time of subdivision for remediation and mitigation of effects of any liquefaction hazard. It is indicated that the land would be classified as TC3 overall, and may be equivalent to TC2 with further detailed assessment[10].

Area A

A geotechnical report on Area A prepared by Bell Geoconsulting Ltd (BGL) and referred to by GHD Ltd[11], having particular regard to the MBIE Guidelines, reported the following main findings for the south eastern part of Area A:

a. No surface liquefaction or lateral spreading has been identified at the site since commencement of seismic activity in the Canterbury region on 4 September 2010. No paleo-liquefaction features have been identified.

b. The geotechnical investigation has shown that the site is characterised by 'soft ground', including a high organic content, to depths between 3.3m and 3.9m bgl. This interpretation

[8] Beca Ltd (8 September 2016) Cranford Basin Rezoning – Review of Geotechnical, Hydrological and Stormwater Evidence

[9] Beca Ltd (22 December 2016) Cranford Basin Rezoning –Preliminary Geotechnical Assessment

[10] Beca Ltd (8 September 2016) Cranford Basin Rezoning – Review of Geotechnical, Hydrological and Stormwater evidence 8 September 2016, page 6

[11] GHD Cranford Basin Geotechnical Investigation Report September 2015l

is based on data obtained from twelve cone penetrometer tests (CPTs) and numerous boreholes and hand augers completed across the site by various parties.

c. Loose to medium dense sand is present beneath the organic-clay and peat "cap", and is underlain by medium dense to dense sandy gravel (Springston Formation) from 4.5 – 6.0m to 10.8 – 11.5mbgl.

d. Christchurch Formation sand and silt is present beneath the Springston Formation gravel to the maximum extent of the boreholes completed on site (15m bgl). Riccarton Gravel is expected around 18m bgl in this area of Christchurch, based on known borehole data from the surrounding area.

e. The shallow soils do not meet the definition of 'Good Ground' specified in NZS 3604:2011 due to the soft nature and presence of peat, and resulting in subsidence due to loading. This will require site specific foundation design. Liquefaction susceptibility is low.

f. Vertical settlements are estimated up to a maximum of 150mm in a ULS design event using the Idriss and Boulanger (2008) calculation method, but 11 of the 12 CPT profiles show less than100mm. A TC2 land classification is considered appropriate based on the consultants' analysis of the liquefaction evaluation data.

g. Liquefaction-induced subsidence is not considered to pose a geotechnical constraint for future development at the site given appropriate foundation design. Compressive loading of the organic-rich soils in the top ~3m of the profile may, however, result in consolidation and potentially non-uniform settlement. In the consultants' opinion design of individual building lots to minimise long-term settlement and inundation potential is a priority, and roading must be engineered so as to eliminate differential ground movements. Design and placement of buried infrastructure must also address acceptable tolerances in terms of settlement.

   The review and the preliminary geotechnical assessment undertaken by Beca noted that development of the area needs to take account of ground subsidence (which may be greater than anticipated by BGL) and if preloading is utilised to address settlement, the effects on neighbouring properties need to be taken into account. The provision of infrastructure also needs careful design to take account of settlement. As indicated above, a preliminary classification of the land is likely to be TC3, which requires further consideration and investigation at the subdivision stage.

Area B

Investigations undertaken in Area B have not discovered geotechnical issues that cannot be dealt with at the subdivision stage[12]. However, the investigations undertaken to date for the 'Crozier' land in Area B are insufficient to inform a subdivision consent application. A further detailed site investigation will be needed at the subdivision stage to determine if the site can be developed without increasing the actual or potential risk of settlement to existing properties to the south.

[12] Evidence of Samantha Webb presented to the IHP 10 December 2015 Par 7.3

Implications for enabling urban residential development

The shallow soils in the draft Plan area do not meet the classification of 'good ground' in accordance with NZS 3604:2011 due to the presence of soft soils and potentially compressible organic material. The compressible soils impose constraints on urban residential development through consolidation via natural biodegradation, loading and removing water from the organic material. For the draft Plan area, urban residential development, both buildings and infrastructure, will be required to manage ground consolidation and prevent changes to the water table, including different settlement.

There are a range of treatment methods available to achieve competence in stable long term foundations to support any form of urban development and associated services, such that the land should capable of being modified to provide urban structures and supporting infrastructure. For example, foundations for new residential houses need to be designed to mitigate settlement from both swamp deposits and liquefiable materials. This can be achieved by piling building foundations. The required piling depth will vary and will require further specific investigations and specific design. Services in this area will likely have to be constructed in ground with an allowable bearing capacity less than 50 kPa, therefore a 'soft ground' raft would be required.

Foundations will need to be of a design that accommodates settlement. Preloading or surcharging the ground is a recognised method of reducing the effects of settlement and may be suitable. Differential settlements are expected where compressible soils are present which will affect the design, construction and maintenance of infrastructure. While excavations are likely to encounter groundwater and may have to be dewatered, which will also influence settlement in organic soils.[13]

Areas most susceptible to springs and other geotechnical constraints can be identified as development constrained through residential zoning or an Outline Development Plan. This will enable a flexible approach to densities and provide development options for avoiding adverse effects on springs and mitigating other geotechnical risks.

Also refer to section 5.4 Hydrogeology.

5.3 Flooding

Stormwater within and entering Cranford Basin is managed to conform to:

- The Styx Stormwater Management Plan (SMP) 2013
- The Styx SMP Stormwater Discharge Consent 2013
- The Designation for Cranford Basin 2014 granted pursuant to a Notice of Requirement
- The Waterways Wetlands and Drainage Guide
- Cultural Impact Assessment.
- The Cranford Basin Active Management Project consent.
- Northern Arterial Extension discharge consent.
- Draft Comprehensive (city-wide) Stormwater Network Discharge Consent 2016.
- The Infrastructure Development Standard (IDS).

[13] Evidence of Samantha Webb and Stephen Douglass prepared for the Replacement District Plan hearings.

The Styx SMP Consent requires new development above a size threshold of 10 residential lots to treat the first flush (25mm) of stormwater runoff and mitigate post-development stormwater runoff increase.

The Designation authorises the Council to purchase specified land in Cranford Basin for stormwater purposes.

The Cranford Basin Active Management Consent limits the amount of water impounded within the proposed embankment around Cranford Basin to 680,000 cubic metres maximum.

Parts of the draft Plan area, mainly the Cranford Basin stormwater management area, are low-lying and subject to regular flooding. The Christchurch District Plan identifies the following flood hazard overlays that affect the draft Plan area:

- Flood Management Area
- Flood Ponding Management Area
- High Flood Hazard Management Area

These flood hazard overlays generally apply to the Cranford Basin stormwater management area, which mainly occurs on the eastern side of Cranford Street with a portion on the western side. Subdivision and new buildings within both the Flood Ponding Management Area and High Flood Hazard Management Area are discouraged through the provisions in the Christchurch District Plan.

The Case/Crozier Block is affected by all three flood management overlays above (mainly the FMA and FPMA and mostly on the Case land). The Council has investigated the possibility of providing limited compensatory storage within the Ponding Areas purchased for limited peripheral development involving filling.[14] If or when consent has been granted to fill the affected land development will be able to proceed on the land affected by the overlays. At some future date the District Planning Maps will be amended to remove the overlays.

The Beca review[15] noted the need to take account of the latest flood information particularly in respect of the management of the Cranford Basin Stormwater area when considering development in flood management areas.

Implications for enabling urban residential development

New buildings within the Flood Management Areas will be required to have minimum floor levels and mitigate the effects of flooding. Any earthworks will have limits on excavation and filling. Subdivision and new buildings will need to avoid the Flood Ponding and High Flood Hazard Management Areas, which mainly cover the designation for the Cranford

[14] Christchurch City Council (August 2012), Styx SMP Blueprint for Surface Water Management, page 39

[15] Beca Ltd (8 September 20416) Cranford Basin Rezoning – Review of Geotechnical, Hydrological and Stormwater Evidence 8 September 2016.

Basin stormwater management area. On-site first flush treatment will need to be provided by the developer.

An Outline Development Plan will need rules to ensure that that development will meet Council (SMP, IDS and District Plan) requirements and the requirements of external consents and constraints, and ensure that:

- Stormwater attenuation and treatment is to occur within the boundary of the development area;
- The first 25mm of rainfall in a storm event is to be treated to a target water quality meeting Schedule 5 Tables S5A and S5B and Schedule 8 of the Land and Water Regional Plan 2015;
- Overland flood water is not unduly impeded from draining eastward into Cranford Basin from Papanui;
- Groundwater levels are not to be lowered nor raised as a consequence of land drainage or land stabilisation or filling;
- The effects and potential effects of development are to be investigated and reported in a Geo-hydrological Management Plan to be carried out by suitably qualified independent experts, in regard to the effect and potential effects on infrastructure and other assets of any settlement or subsidence that may occur over time under possible scenarios (e.g. seismic events). This Plan would be approved by the Council;
- Design and implementation plans are to be prepared and reviewed by suitably qualified experts and submitted for Council review to illustrate that the development will proceed in a way that achieves the objectives and recommendations of the Geo-hydrological Management Plan; and
- Stormwater is permitted to be discharged from the development into the Council's stormwater designation at no. 45 McFaddens Road (west of Cranford Street), being the land identified on the ODP as "Designated Stormwater Management Area". Any discharge to this land would subsequently be conveyed to open drain or piped network.

5.4 Hydrogeology

The draft Plan area has historically been drained and converted for agricultural purposes, and as described above is characterised by peaty soils which also contain springs and watercourses, largely groundwater fed.

A report by Beca Ltd describes the hydrogeology features[16]:

"The basin is located at a geological transitional zone where the Holocene alluvial deposits (the Springston Formation) change to marine equivalent deposits, referred to as the

[16] Beca Ltd (28 September 2016), Spring identification and groundwater management for potential rezoning at the Grassmere Block, page 3

Christchurch Formation. The pinching out of gravel lobes such as the Springston Gravel and active drainage to a low level encourages the upward movement of groundwater. Current drainage is largely open drains with some subsurface piping of springs and groundwater seepage. The alluvial deposits of the Springston Formation comprise a mixture of peat, sand, silt and gravel whereas the Christchurch Formation comprises sand with subordinate silt, clay and organic material (including peat and shells). The underlying geological materials are variable and heterogeneous in thickness, composition, strength and water content.

Below these are located the older glacio-fluvial deposits of the Riccarton Gravel Formation, which occurs at a relatively shallow depth here (~18 m) and contains flowing under pressure artesian groundwater (up to 4m above ground).

The area is characterised by shallow groundwater that sits close to or above the ground surface depending on the proximity to Cranford Basin. The shallow groundwater levels and the relatively low land surface elevation gives rise to springs, which are found as artesian springs and depression springs or seeps. The artesian springs are usually observed bubbling and flowing from a point source and form small bowls from where a "run" or drain originates. These types of spring are usually due to groundwater flowing preferentially through weaknesses in the ground or thinner cover layers. There are also a number of seeps (probably ephemeral or intermittent) found pooling in shallow depressions on lower permeability peaty soils. These differ from the springs above in that they usually do not flow to a drainage outlet and are accordingly mapped as "seeps"."

Area A

Detailed investigation and mapping of springs and seeps in Area A was undertaken by Beca Ltd in September 2016[17]. The mapping found approximately 32 artesian springs with three main discharge areas around the upper reaches of Tysons Drain. The lower lying areas in the south and eastern parts of Area A exhibited seepage areas where water is ponded in shallow depressions and does not flow into the drainage network. Approximately 46 seeps were mapped. The report recommends options for management of effects from residential development on the springs and waterways. *Figure 5* illustrates the location of the springs, seeps and waterbodies.

[17] Beca Ltd (28 September 2016), Spring identification and groundwater management for potential rezoning at the Grassmere Block

Figure 5: Waterbodies identified in Area A

Area B

No springs or seeps have been identified in Area B.

Implications for enabling urban residential development

The hydrogeology in the draft Plan area can be affected by urban residential development and vice versa. Potential impacts of residential development on groundwater include[18]:

- Changes to groundwater discharges such as springs and water bodies which have cultural and ecological values;
- Blockage of drainage outlets could affect spring or seepage areas and may cause springs to migrate and emerge in other areas which could result in flooding elsewhere;
- Earthworks and drainage (surcharge with fill) might cause a re-direction and lowering or rise in groundwater levels which might result in ground settlement or flooding respectively;
- There is the possibility of interception of artesian or high groundwater flow conditions during earthworks/piling which can lead to an ongoing drainage issue

[18] Beca Ltd (28 September 2016), Spring identification and groundwater management for potential rezoning at the Grassmere Block, page 5.

due to uncontrolled groundwater discharge and ultimately aquifer depressurisation if not resolved;

- Enhanced risk of liquefaction of saturated soils subject to elevated pore water pressures in response to earthquake shaking and consequent damage to infrastructure and housing; and

- High groundwater and wet ground conditions can affect amenity of residential properties.

- Submitters living near the proposed development have concerns that if the land adjacent to their property is built up, and has ineffective drainage it will cause adverse flooding effects on the low-lying adjacent properties. In order to address these concerns it is critical that an integrated approach is taken to avoiding unintended consequences of development on the hydrogeology of the Grassmere area in particular. Site by site assessments will be insufficient to control impacts beyond the property and outside of the regeneration area. Impacts of urban residential development can only be managed through requiring a hydrogeological plan to be approved for the entire Grassmere block prior to subdivision consent being approved, and ensuring that adequate setbacks from springs and waterways are provided for. Naturalisation of waterways and restored spring vents are also needed for management of groundwater. Such requirements can be imposed on subdivision and development through rules in the District Plan. The ODP has identified Areas 1-5, which is partially based on hydrogeology constraints. Areas 1 and 2 are identified as having the capacity to accommodate higher densities because of the absence of low lying areas, springs and seeps. Conversely, the density of development in Area 4 and part of Area 3 is constrained by the presence of a large number of springs and seeps, and the southern part of Area 4 is also subject to district plan rules relating to floor levels and earthworks. As indicated above, Area 5 is also constrained by flood ponding and flood hazard rules in the District Plan, which restricts development.

5.5 Freshwater Ecological Values

Area A

An ecological investigation on Area A by EOS Ecology in September 2016[19], included a site visit, mapping waterways and pond network and fish and macroinvertebrates surveys at selected sites.

Macro invertebrate survey results were typical of soft-bottomed low gradient streams in urban and rural landscapes and the surveys indicated poor habitat conditions at the four sampling sites. The fish surveys found four species, including short fin eel, upland bully, longfin eel and inanga. Both longfin eel and inanga are classified as 'At Risk – Declining' by the latest freshwater fish threat classifications.

[19] EOS Ecology (September 2016), Aquatic Ecology Values of Western Cranford Basin, Report No. CHRO1-16129-01.

Implications for enabling urban residential development

Residential urban development can provide for the establishment of a network of green space reserves based on the springheads and outflow channels. Freshwater ecological values can be enhanced through riparian planting, naturalisation of waterways and keeping stormwater out of the waterways. With enhancement and protection of waterways and springs these areas can become clean freshwater refuges and there is the potential for sensitive species such as koura (freshwater crayfish) to be reintroduced in future.

5.6 Terrestrial Ecological Values

A botanical survey undertaken as part of the Notice of Requirement for the stormwater and roading designations[20], referred to a botanical study undertaken by Carol Jensen in 2004 of an area that included the draft Plan area. This study did not identify any remnants of the original vegetation cover which would have been dominated by flax (*Phormium tenax*) and raupo (*Typha orientalis*) in wetter areas, and native tussocks and grasses on higher ground. The only remnant of the original vegetation was the occasional native plant that has apparently propagated naturally on the sides of drains. These included seven species of fern, three grasses, and a small number of other herbaceous and aquatic plants. A single self-seeded cabbage tree (*Cordyline australis*) was the only naturally occurring native tree identified within the study area and located on the road side of Cranford Street.

An assessment of bird habitat in and around the Cranford Basin, including the draft Plan area carried out by Council ornithologist Andrew Crossland in early 2004 (Crossland 2004)[21], identified no species of particular conservation interest being present in the area, but that the area supported an assemblage of more common species. Of the native species associated with waterways and lowland wet grasslands, these included little cormorant, white faced heron, paradise shelduck, Australasian harrier, pukeko, pied stilt, black-backed gull, red-billed gull, black-billed gull, NZ kingfisher and welcome swallow. Native species of drier open country and woodland habitat included fantail, grey warbler, silvereye, bellbird, NZ pipit, and the migratory shining cuckoo.

The report noted that the development of the stormwater management area would result in significant benefits for birds and other wildlife through the creation of wetlands, enhancing of existing waterways and planting of native bush, lowland wet grasslands and/or mixed woodland.

Implications for enabling urban residential development

No areas of significant indigenous vegetation or habitats of significant fauna have been identified in the draft Plan area. No investigations were considered necessary for Area B as it is a modified landscape and does not have any waterways within the site. Opportunities for enhancement of indigenous biodiversity can be provided with urban residential development through reserves, stormwater areas, protection of springs and waterways.

[20] Landscape Ecology Report -Notice of Requirement (Stormwater Purposes) for Cranford Basin, CCC October 2013.

[21] Cranford basin – Winters Road Proposed Redevelopment and Environmental Enhancement Bird Habitat Assessment and Recommendations A. Crossland 2004.

The Council's planting programme**,** including the creation of wetlands_proposed for the Cranford Basin stormwater management area will have positive benefits for ecological values particularly in respect of bird habitat.

5.7 Cultural values

A Cultural Impact Assessment has been undertaken by Te Ngāi Tūāhuriri Rūnunga[22], who have a responsibility as the kaitiaki rūnunga for the takiwa within which the draft Plan area sits. The report identifies the following impacts and issues in relation to urban residential development in the draft Plan area:

- Artefacts being discovered and potentially impacted.
- Stormwater from future residential development within Cranford Basin, or surrounding area, being discharged into Waikākāriki/Horseshoe Lake or Avon River/ Ōtākaro:
    - Waikākāriki/Horseshoe Lake is a wāhi tapu / wahi taonga;
    - Could have an impact on taonga species.
- Springs being negatively impacted from residential development, either directly or indirectly.
- Land contamination within the Cranford Basin impacting the health of humans and taonga species.
- Uncertainty around the timeframes for "required" infrastructure development (stormwater, wastewater) within the Cranford Basin.
- Increased pressure on the wastewater and stormwater networks having short and potential long term impacts on taonga species.
- On-going consultation through the development process.

Implications for enabling urban residential development

Several of the issues raised in the Cultural Impact Assessment impact on the design and development of any residential subdivision, infrastructure and the conditions around such development. Concerns raised with how infrastructure is provided, particularly stormwater and wastewater, and are dealt with in those sections. Concerns relating to accidental discovery, land contamination and consultation are matters that can be considered at the subdivision stage through provisions either currently in the District Plan or that will be developed through the Regeneration Plan.

The Council is aware of and respects the cultural significance of Waikākāriki/Horseshoe Lake and the need to consider all practicable options for restoring mahinga kai and other values. However, the Council does not consider this is a matter that can be dealt with through Cranford Plan alone. This is best considered through the Council's Long Term Plan, or the

[22] Tipa & Associates on behalf of Te Ngāi Tuahuriri Rūnunga (August 2016), Cultural Impact Assessment for Cranford Basin – Proposed rezoning for urban activities.

proposed Ōtākaro/Avon River Corridor Regeneration Plan. A supporting commitment has been included in the draft Cranford Plan to investigate this matter further.

Notwithstanding the proposed supporting commitment, the Council considers that it is feasible to significantly improve the quality of the discharge into Waikākāriki/Horseshoe Lake through the Cranford Basin stormwater management system and requiring on site treatment for the proposed new development. These works will not only ensure that the new development will be discharging water of an acceptable quality into Waikākāriki/Horseshoe Lake, but also discharges from the extensive residential areas upstream of the Basin will also be upgraded.

5.8 Landscape

The draft Plan area is a low lying rural land surrounded by both residential and light industrial urban development, and also by rural lifestyle properties on Winters Road. It is an intensively farmed landscape, characterised by open fields of either pasture or market gardening, and is bisected by stock fencing, shelterbelts, and drains of different widths and formations. Cranford Basin is a distinctive feature of Christchurch, and provides the last rural experience for motorists entering the City from the north via Cranford Street.

Implications for enabling urban residential development

The current rural landscape will change with the development of the Northern Arterial Extension and the Cranford Basin stormwater management area. This modified landscape that will also change with residential development as it moves towards an urban landscape, if developed. There are no significant landscape features identified in the area that need protection.

5.9 Infrastructure

5.9.1 Stormwater drainage network

The Cranford Basin plays a key role in flood and stormwater management in the city. It connects the Pūharakekenui/Styx and Ōtākaro/Avon catchments, and, along with adjoining drainage infrastructure, may cause flows to be directed either north or south.

The current stormwater drainage network in the draft Plan area comprises two ponding areas, with the upper basin located north of QEII Drive which usually drains to the Pūharakekenui/Styx River, and the lower basin located to the south of Cranford Street which drains southeast to the Avon River. A control structure on Winters Road Drain near the Winters Road intersection with QEII Drive allows some floodwater from the upper Basin to be diverted south-east into the Avon River via Bullers Drain and some floodwater from the lower Basin to be diverted north to the Pūharakekenui/Styx River via Horners Drain, depending on the circumstances.

The existing drainage network is shown in Figure 6. The drains are described as follows:

The **Upper Dudley Creek Diversion (UDCD)**, which intercepts Dudley Creek at the Paparoa Street culvert and diverts up to 2.5m^3/s into a 1350mm pipeline. The pipeline also intercepts a further flow of up to 1.5m^3/s from the Papanui Creek and then discharges the flow into the main UDCD channel which runs through Cranford West to pump station PS219 located at Cranford East. The flow from this channel is then pumped by PS219 into another pipeline that discharges into the main Dudley Creek Diversion at Philpotts Road before discharging

to Horseshoe Lake. The UDCD was installed in 1989 and is a vital component of the Christchurch stormwater system as it assists to alleviate downstream flooding particularly in the Flockton area (Shirley).

Tysons Drain which flows in a north-easterly direction from Grassmere Street to Winters Road. It serves a mix of rural and urban land uses. The weir at Cranford Street allows a limited discharge to drain down Cranford Street West Drain to the UDCD.

Winters Road Drain which flows east along the southern boundary of Winters Road from Tysons Drain to Bullers Drain on the east side of Philpott's Road. It provides an outlet to either the Avon River (Ōtākaro) via Buller's Drain or the Pūharakekenui/Styx River via Kruse's Drain depending on the setting of the flow control structure at Winters Road detention basin (corner of Winters Road and Phillpotts Road). The waterway drains the northern area of Dudley Diversion ponding area in Cranford Basin. Construction works affecting this drain are addressed in the Northern Arterial project.

Croziers Drain which discharges into the UDCD immediately upstream of PS 219. It runs through the lowest part of the basin to drain pastoral land.

Cranford Street West Drain which flows along the western boundary of Cranford Street from Tysons Drain to the UDCD.

Cranford Street East Drain which flows along the eastern boundary of Cranford Street and discharges into the UDCD.

Godfreys Drain which flows into Tysons Drain from Cranford Street to the north.

Figure 6: Existing drainage network in the draft Plan area

In addition to the above management drains, a number of private farm drains have been installed by landowners (some 100 years ago), to draw down ground water to facilitate the production of vegetables. All the drains are earthen and have been frequently deepened and cleared to improve drainage, but often have little or no flow until rainfall and runoff boost the flow.

Surface water in the draft Plan area is managed in conformity with the Styx Stormwater Management Plan and the Styx SMP Blueprint for surface water management, which manages the effects of urban development in the Pūharakekenui/Styx River catchment[23]. The Blueprint highlights the importance of Cranford Basin and that it must be protected from encroachment and other effects of further urban development. It indicates that this be achieved in the long term through Council purchasing land in the Cranford Basin.

The Blueprint identifies the principal surface water issues for the Pūharakekenui/Styx catchment, including the following for the Cranford Basin:[24]

How should the Cranford Basin natural ponding area be developed to optimise its use as a multi-purpose facility for stormwater quality treatment, flood attenuation, ecological restoration and district amenity?

In response the Blueprint proposes a stormwater management strategy for Cranford Basin that includes the following elements:

i) CCC purchase the remaining area of Dudley Diversion and Horner's/Kruse's Buller's Ponding Areas (as identified in the sub-catchment plans) that are not already owned. This includes land both east and west of Cranford Street.

ii) Future development within Cranford Basin Ponding Areas be limited to the Northern Arterial Extension and other strategic transport links, and stormwater treatment wetlands for limited peripheral urban development outside the Ponding Areas that can provide for their own first flush treatment.

iii) CCC investigate in more detail the possibility of providing limited compensatory storage within the Ponding Areas purchased for limited peripheral development involving filling.[25]

In June 2016, a designation for the Cranford Basin stormwater management area was confirmed for stormwater purposes[26] including construction, operation, maintenance and upgrading of stormwater detention and treatment facilities. The designated area comprises 56 hectares and is generally consistent with the area of land required to accommodate a 2%

[23] ECan granted a catchment wide discharge consent in October 2013 for the Styx SMP

[24] Christchurch City Council (August 2012), Styx SMP Blueprint for Surface Water Management, page 24

[25] Christchurch City Council (August 2012), Styx SMP Blueprint for Surface Water Management, page 39

[26] Designation C128 Cranford Basin Stormwater Management Area, Chapter 10 Designations and Heritage Orders, Christchurch District Plan

AEP (24hr) flood event. Treatment facilities on the site would enable the quality of stormwater from the surrounding catchment to be further improved.

In developing the proposed ponding areas, excavation will be required to create treatment ponds and wetlands, divert drains and construct walkways and planting areas. It is expected that to the west of Cranford Street this may alter the direction of groundwater flow in some places and draw down the water table around the periphery of any excavations. Water levels will fluctuate above the minimum level as the wet areas store and release stormwater. A future minimum water level is likely to be a little higher than the present managed water level, and this will benefit the basin soils by slowing oxidative decomposition of the peat component and slowing subsidence. However subsidence can be expected to continue at varying rates, depending on location, indefinitely.

Council also proposes an extensive planting programme to create a forested area (*Figure 7*) which will have benefits for ecological values, particularly in respect of bird habitat, cultural values and recreation and amenity values. It is anticipated improvements to the area will be staged over several years with some funding already allocated in the Long Term Plan. This will include the provision of public open space and movement networks through the designated areas as signalled in the Outline.[27]

The Beca review[28] highlighted the need to have regard to how works within the Cranford Basin stormwater management area could affect proposed residential development, including bunding affecting secondary flow paths, and forest management affecting groundwater levels.

[27] Outline for Proposed Cranford Regeneration Plan December 2016 Section 2.1 Page 1.

[28] Beca Ltd (8 September 20416) Cranford Basin Rezoning – Review of Geotechnical, Hydrological and Stormwater Evidence 8 September 2016.

Figure 7: Planting indicated for the Cranford Basin Stormwater Management Area

Implications for enabling urban residential development

The confirmation of the designation and the Council purchasing the required land for stormwater management purposes protects the Cranford Basin and its stormwater functions. Development of the stormwater detention and treatment area can provide for the treatment of the stormwater from the upper catchment including industrial areas. This is in addition to the Northern Arterial Extension and any potential residential development, while also providing detention for floodwaters from that catchment to the 1 in 50 year standard. Notwithstanding the importance of the proposed stormwater facility within Cranford Basin for managing stormwater from the wider catchment, any urban residential development within the ODP boundary is not contingent on Council's facility.

Any stormwater from the ODP area will still need to provide for attenuation and first flush treatment of stormwater and to separate stormwater from existing waterways and springs. The first 25mm of rainfall in a storm event will need to be treated to a target water quality standard.

After first flush treatment within the site of any subdivision, it is proposed that stormwater is discharged to land adjoining Areas 1 – 4, and 5, which is owned by Council. Any discharge to this land would subsequently be conveyed to open drain or the piped network.

The stormwater from the proposed Cranford area, together with stormwater originating from the upper catchment will mostly discharge into Horseshoe Lake, a waterbody of cultural importance to Te Ngäi Tūāhuriri Rūnunga though an outfall located in an area of taonga. The Council acknowledges that the location of the outfall will need to be reconsidered in the future

as part of a long term expenditure programme, or alternatively through the Ōtākaro/Avon River Corridor Regeneration Plan.

The Grassmere Street residential block (Area A in the draft Plan area is part of the upper Northern Relief trunk sewer catchment. The Northern Relief is a large trunk main that collects and conveys flow from the north and west of Christchurch to Pump Station 1, a terminal pump station which discharges to the Christchurch Wastewater Treatment Plant. Located on the Northern Relief just at the south-west boundary of the draft Plan area is the Grassmere overflow. The wastewater model predicts that this will overflow during a 3 year Annual Recurrence Interval (ARI) storm event, and that an increase in flows from development of the draft Plan area would result in an increase in overflow volume.

Wastewater from the Croziers Road residential block (Area B in the draft Plan area) would discharge into the Pump Station 6 catchment. This too has capacity issues during storm events.

Poor ground conditions would make constructing a gravity sewer network for both Areas A and B difficult and expensive. As an illustration of this, the existing gravity sewer on Cranford Street had to be built on piles.

Implications for enabling urban residential development

Due to the downstream capacity constraints and the poor ground conditions, both Areas A and B would need to be served by a smart pressure sewer system. This comprises a pump and on-site storage tank for each house sized to hold at least 24 hours wastewater volume, with a control panel that allows the Council to remotely monitor and control the pump. In the event of a large storm when the downstream network is at capacity, the Council can prevent the pumps in the area from pumping (utilising the on-site storage instead) until there is sufficient capacity in the downstream network to accommodate the wastewater from the area. This solution accommodates growth without exacerbating downstream overflows and is being used in many other greenfield development areas in Christchurch.

5.9.2 Water infrastructure

The draft Plan area is part of the Central Water Supply Zone, which will supply any new urban residential development. This has sufficient capacity providing water supply mains are constructed through the Grassmere Street residential block, to connect Grassmere Street, Shearer Avenue and Cranford Street.

The Croziers Road block is also in the Central Water Supply Zone. Water supply connections will need to be made to the water supply mains on Cranford Street, Frome Street and Croziers Road.

A city-wide water supply rezoning project is proposed. If this proceeds, the draft Plan area would be in the Saint Albans water supply zone. A replacement for the earthquake damaged Averill water supply pump station with a capacity of 360-400 m^3/hour would be needed before the proposed Saint Albans water supply zone is created. This is currently scheduled to be built by 2026.

Implications for enabling urban residential development

Providing water supply for urban residential development in the draft Plan area is not an overall constraint preventing development. Water supply mains will need to be constructed through the Grassmere Street residential block, to connect Grassmere Street, Shearer Avenue and Cranford Street. This infrastructure will be provided at the time of subdivision.

The earthquake-damaged Averill water supply pump station would need to be replaced before the water supply re-zoning project proceeds. This is currently included in the Council's Long Term Plan between 2024 and 2026.

5.10 Strategic Transport

The draft Plan area is bisected by Cranford Street and the Northern Arterial Extension (NAE). The NAE/Cranford Street Upgrade is a proposed new road connection extending from the southern end of the proposed NZTA Northern Arterial at Winters Road across Cranford Basin to Cranford Street, and along Cranford Street to Innes Road. The new road will be four lanes and is an integral part of northern roading corridor improvements with construction commencing in 2017. The extent of the NAE (approximately 6.2ha) designation[29] was confirmed in June 2016.

Traffic modelling for a range of land use scenarios in the draft Plan area has been conducted using Council's CAST traffic model for the years of 2021 (pre-Northern Arterial and Extension) and 2031 (with Northern Arterial and Extension) for the AM and PM peak traffic hours.[30] The scenarios were:

- Scenario 1 – 200 households of a similar density to the Residential Suburban Zone with a peat constraint (2000m2);
- Scenario 2 – 750 households of a similar density to the Residential Suburban Zone (450m^2);
- Scenario 3 – 1500 households of a similar density to the Residential Medium Density Zone (200m^2);
- Scenario 4 – assume that the area to the south-west of Cranford Street is zoned for industrial purposes while the northern portion if low density residential;
- Scenario 5 – assume that part of the area to the south-west of Cranford Street is zoned for commercial purposes with up to 30,000m^2 gross floor area.; and
- Scenario 6 –370 households for the Grassmere Block. This examined internal roading options including a no-through route between Grassmere Street and Cranford Street and alternative treatments to the intersection of Grassmere Street/Main North Road.

[29] Designation C10 Northern Arterial Extension and Cranford Street Upgrade, Chapter 10 Designations and Heritage Orders, Christchurch District Plan.

[30] Quality Transport Planning, Memorandum Cranford Basin Proposed Rezoning Transport Assessment 2 April 2015.

Each scenario is assessed below[31]:

At 2021, for Scenario 1 (200 households), there are measurable impacts at a number of locations on the surrounding road network for which no simple mitigation measures have been identified. As these locations are already operating at Level of Service (LoS) E or F[32] in the base model, these impacts are considered potentially significant. Particularly as there are safety consequences of large delays on give-way approaches to intersections. Advice from QTP Consultants is not to allow for zoning under this scenario that could exacerbate existing efficiency and associated safety issues on the road network at 2021 unless these effects are mitigated or a more detailed analysis is undertaken to confirm these initial findings.

At 2021, for Scenario 2 (750 households), the scale of the impacts at a number of locations on the local road network is considered significant (more than minor). Scenarios 2 to 5 all have a large traffic generation potential and it is recommended that in the absence of more detailed analysis that zoning rules are implemented that constrain the amount of development that could occur prior to the Northern Arterial (NA) and Northern Arterial Extension (NAE) being implemented.

At 2031, the locations of significant delay increases for Scenarios 1 and 2 do not occur due to the relief to these bottlenecks brought by the NA & NAE. The modelling would suggest that the effects of Scenarios 1 and 2 on the surrounding road network are minor.

At 2031, the traffic effects for Scenario 3 (1500 households) are also generally minor. The modelling does however indicate some potentially significant increases in delays and border-line performance of some minor road approaches to Papanui Road.

For Scenario 4 (with industrial zoning south of Cranford Street) projected traffic volume increases on Grants Rd are large at up to 7,000 vehicles per day (vpd). Whilst modelled network impacts are generally minor, the modelling does suggest that local area traffic management and intersection upgrades would be required to mitigate potential impacts on the minor road approaches to Papanui Rd (e.g. Wyndham St, Dormer St and Perry St).

Scenario 5 (some commercial zoning south of Cranford Street) has projected traffic volume increases on Grants Rd of up to 6,000 vpd at 2031. As with Scenario 4, the modelling suggests that local area traffic management and intersection upgrades would be required to mitigate potential impacts on the minor road approaches to Papanui Rd (Wyndham St, Dormer St and Perry St). The main access to the commercial / residential development on the south side of Cranford Street was assumed to be a roundabout in all options. This roundabout works in tandem with the assumed Left-In, Left-Out intersection serving the northern portion of the proposed urban zoning by accommodating U-turning movements. Under Scenario 5, the assumed two-circulating roundabout is at LoS F on the Collector Road approach in the PM peak traffic hour. An alternative configuration assuming a large signalised intersection indicates satisfactory performance but may not accommodate U-turners satisfactorily.

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[31] Quality Transport Planning, Memorandum Cranford Basin Proposed Rezoning Transport Assessment 2 April 2015, page 37-39.

[32] Level of Service E has a delay of 50-70 seconds at intersections, while Level of Service F has a delay of greater than 70 seconds. This compares to Level of Service A to C which has a delay of 0-30 seconds.

Public Transport

The draft Plan area is well served by the No 28, Blue Line and the Orbiter bus routes.

The Blue Line is a direct service with the Central City via Main North and Papanui Roads. This service has a 10 minute frequency at peak times and 15 minutes during other times of the day. Route 28 (Papanui to Lyttelton and Rapaki via the Central City) travels along Cranford Street and operates with a frequency of 30 minutes for most of the day. The Orbiter has a frequency of 10 minutes during the day and provides access across the city. This service may be re-routed along Cranford Street from QEII Drive due to the changes to the network from the construction of the Northern Arterial and its extension to Cranford Street.

Completion of the Northern Arterial may also provide an opportunity to provide for bus priority measures along the Main North/Papanui Road corridor. To date, no work has been undertaken to test what measures could be implemented in the future, but the City Council is proposing to investigate this issue and this could result in a more efficient and attractive service being developed along the corridor.

The Regional Passenger Transport Plan anticipates that some new routes may be introduced in the future to service new residential subdivisions. Given the limited area proposed for residential development and the proximity to existing high frequency services, it is unlikely that there would be any new routes specifically serving this area.

The provision of a high level of safe and attractive pedestrian connections through the area providing access to Main North Road and Cranford Street is therefore essential to ensure that the residents of the draft Plan area can take full advantage of the adjacent bus routes.

Cycle Access

The rural zoning and private land ownership of the draft Plan area have historically offered little opportunity to provide off-road links, other than the shared path adjacent to the south-west boundary between Rutland Street and Grassmere Street. The existing facilities in the wider area consist of the shared cycle cycle/bus lane along Main North/Papanui Road, the railway cycleway along the Main North Line, the QEII Drive off-road shared path and the Innes Road cycle lanes.

Council are currently planning, designing and building a network comprising 13 Major Cycle Routes (MCR), one of which (the Papanui Parallel) will run along the south-west boundary of the site. The MCR's are designed to connect suburbs, shopping areas, businesses, schools and sporting destinations, the routes offer a level of service not seen before in Christchurch.

The Papanui Parallel is currently under construction with completion scheduled in 2017 and will provide a high level of safe access for cyclists, connecting the draft Plan area with the Central City and the Northern Line Cycleway (also a MCR). The cycleway will also provide a high level of access to more local facilities, such as the Paparoa Street School and Papanui High School, via the signalised pedestrian/cycle crossing on Main North Road linking Grassmere Street to Sawyers Arms Road. The crossing will also provide easy access to the Papanui/Northlands Key Activity Centre.

The development of the Northern Arterial Extension (NAE) will also see the construction of a shared path on the west side of the corridor which will cross Cranford Street via a set of pedestrian/cycle signals to link with a shared off-road path on the south-west side of Cranford Street. There is the opportunity to link the NAE cycleway across the site to join with the Papanui Parallel to provide access to the Central City.

The MCRs are designed to make cycling a safe, convenient and enjoyable experience to encourage new groups of people to try cycling, and the route is designed to emphasise these features. Intersections and vehicle accesses are areas where conflict can occur. It is therefore essential that access to any proposed urban residential development on Grassmere Street is designed to minimise the conflicts and maximise the safety of its users. This can be achieved through the minimisation of crossing points and/or the design of these crossing points to ensure that visibility between users is maximised and vehicle speeds are kept low.

It is noted that no cycle facilities exist or are planned on Cranford Street. It is therefore considered essential that a highly convenient crossing facility is provided on Cranford Street, connecting the northern and southern portions of the draft Plan area.

Pedestrian Access

The western part of the draft Plan area is well located for pedestrian access to Main North Road. The development of the Papanui Parallel will also afford better access for pedestrians across Main North Road with the new signalised crossing point. This will provide convenient walking access to the high frequency bus routes and to the employment, shopping and other services available within and around the Papanui/Northlands Key Activity Centre.

As with the cycle connections the internal network should be designed to provide high-quality pedestrian connections from the site to the adjacent pedestrian areas, the major cycleway and to the signalised pedestrian crossing on Cranford Street.

Area A

Detailed transport assessments have been undertaken on potential urban residential development in Area A based on the following outcomes to provide the most appropriate transport network. A scenario based on 370 households was also tested for Area A.

1. *A fully interconnected transport network that provides a high level of accessibility and safety for all forms of transport*

   An inter-connected network of roads and paths provides an efficient transport system that is resilient to emergencies, such as earthquakes, by providing for alternative routes through and to the area. A network would cater for vehicle, pedestrian and cycle movements with connections to the arterial road network and the wider cycle network. There are a number of bus routes within walking distance of the site that run along Cranford Street and Main North Road.

2. *An extension to the existing residential areas to the north and west of the new development area*

   A transport network will need to ensure that the area integrates and has a high level of connection with the existing residential areas. Whilst this will result in extra traffic using these existing local roads transport modelling indicates that the extra traffic generated will not create safety or efficiency issues on the wider network. It is acknowledged that there are likely to be effects on amenity for some residents due to the extra traffic particularly on Grants Road, Grassmere Street and to a lesser extent Shearer Avenue.

3. *A network that fits within the confines of the constraints imposed by the waterways and geotechnical conditions within the area*

A major constraint on the layout and density of the area is the hydro-geotechnical conditions of the land, presence of springs and limitations on the filling of flood prone areas. Therefore, to some extent the transport network is confined by these constraints.

4. *Protection of the function of the Papanui Parallel major cycleway through design and the limiting of access onto Grassmere Street*

   The route of the Papanui Parallel runs along Rutland Street, through a short section of reserve land and then along Grassmere Street to cross Main North Road at a set of pedestrian/cycle signals. The Papanui Parallel is one of 13 major cycleways approved in Christchurch.

5. *Links to the local Key Activity Centre and associated community facilities*

   The Papanui/Northlands Key Activity Centre provides an employment centre and a centre for shopping and services within easy walking distance of Area A.

Area B

The two lots of land to the north east of Cranford Street on the edge of the existing residential area, known as Area B, would provide for development of about 30 and 8 lots respectively. This level of traffic generation would be unnoticeable on a network wide basis and would have a less than minor effect on the frontage roads used to access the land, providing well designed access points are used.

Current access to the Crozier land, the northern most part of Area B, is from Croziers Road which is a local road with a 13 metre wide formed carriageway. The road ends at the boundary of the existing residential zoning, and it was obviously intended that the road would provide access to any future development of the land. The extra residential development would generate approximately 300 vehicle trips per day (30 during peak hour) and whilst the increase in traffic would be noticeable to residents in the immediate proximity it would not be enough to create safety issues.

Given the adjacent development of the Cranford Basin stormwater management area the provision of a pedestrian/cycle connection to the Cranford Basin from the Crozier land should be a requirement with the development.

The Case land, which fronts Cranford Street, currently has access via a right of way from Esperance Street with the main access for the business and residence from Cranford Street. The works associated with the NAE will change the form of Cranford Street substantially, widening the existing two lane road to four lanes separated by a solid median. The solid median includes a number of right-turn facilities to provide for access to adjacent land use, with a bay located immediately outside the Case property.

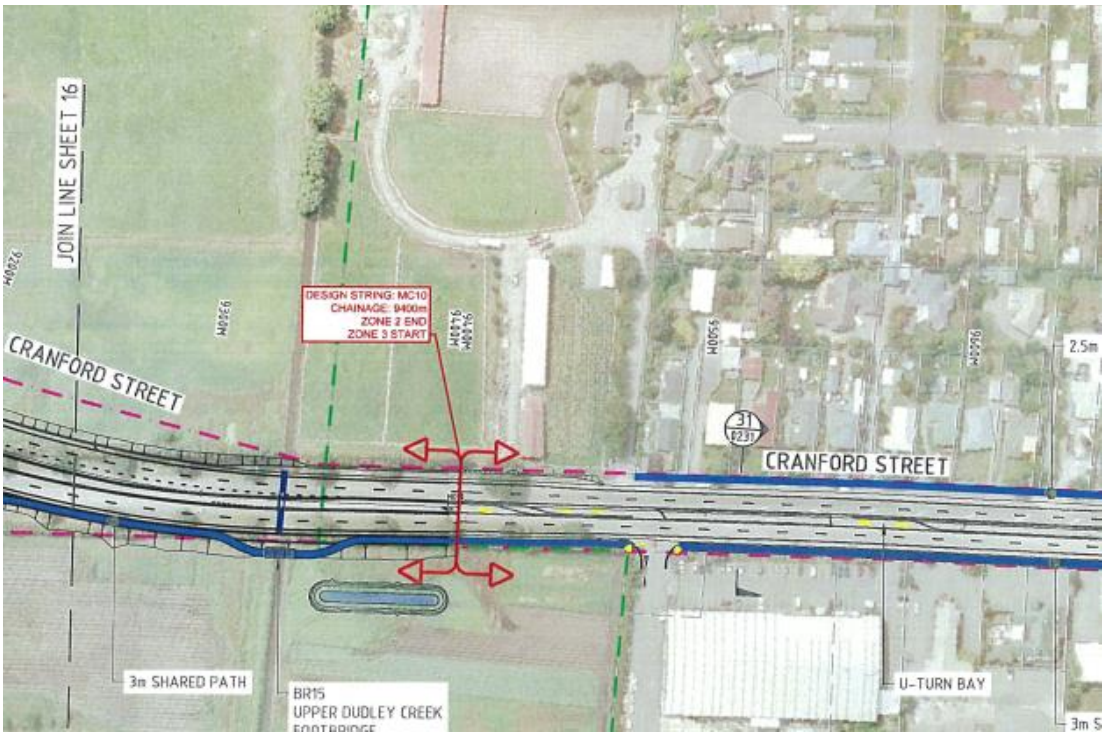

Figure 8: Proposed Cranford Street expansion

The location of this turning bay has the potential to result in unsafe manoeuvres occurring from a future access from the Case land, depending on its final location. A properly designed access (limited to left-in and left-out manoeuvres only) could provide safe access, access onto the local network would be a preferable solution (*Figure 8*). This could be through a vehicle link through to the Crozier land to reduce numbers, or use of the right of way to Frome Place to reduce the number of vehicles accessing the land via Cranford Street.

In May 2017 Council collated the information into an "Integrated Transport Assessment" which is a summary document of transport modelling and analysis undertaken and also provides some commentary of the ODP transport network.

The Assessment concluded the following:

- To avoid delays at the intersection of local roads and the arterial network it is recommended that the number of residential units be restricted until Christchurch Northern Corridor project is completed.
- The preferred option in the development of the ODP is a road link connecting Grassmere Street and Cranford Street. This enables the opportunity for a controlled intersection (roundabout or signalised intersection) to be constructed at Cranford Street.
- New roads crossing the Papanui Parallel (Major Cycle Route) need to be designed to avoid conflict points and enhance safety.
- The development of the Case/Crozier land can be accommodated with less than minor effects on the network, although the Case left-in left-out access onto Cranford Street will require careful design given the proximity of turning bays.

- A number of specific items are recommended for inclusion in the ODP relating to the following to address traffic issues:
    - A fully interconnected road network;
    - a collector road connecting Grassmere and Cranford Streets;
    - no access to Cranford Street until the Christchurch Northern Corridor project is completed;
    - implementation of a controlled access onto Cranford Street;
    - review of the Grassmere Street and Main North Road intersection;
    - extension of Shearer Avenue to connect to the proposed collector road;
    - extension of the NAE cycleway to Grassmere Street to connect with the Papanui Parallel; and
    - undertaking works on Grassmere Street to ensure the safety of the cycleway.

Implications for enabling urban residential development

The overall assessment of the strategic transport implications of various land use options is that, in the long term, a modest number of residential households (Scenario 6) would be a preferable use of the draft Plan area. Residential zoning is highly compatible with the existing surrounding residential land-uses in terms of traffic effects (minimal heavy vehicles and noise compared to industrial and commercial uses) and a high number of houses maximises the advantage of being in close proximity to the KAC and public.

Residential development around the Cranford Basin stormwater management area would be well located for local public transport, employment, shopping and recreational activities. Development of extensive cycling and walking linkages should be included on any outline development plan to capitalise on the existing and proposed high quality PT and cycling routes that provide good accessibility to the neighbouring residential areas to the north-west and south-east of the site where accessibility by road corridors is otherwise poor.

At a local level, traffic modelling highlighted a number of issues that need to be addressed to maintain the safety and efficiency of the network, particularly prior to the Northern Arterial projects being completed[33]. This includes extra delays created by the additional vehicle traffic generated if Area A is developed for urban residential development and the safety implications associated with extended delays at intersections. This could be minimised by staging of development, traffic calming treatment to the ODP road and its interface with Grassmere Street, and limiting residential development to no more than 370 households.

Where new roads cross the Papanui Parallel MCR the intersections with the MCR will need to be designed to be compatible with the design treatments used along the route. Minimising the number of intersections and individual property accesses will limit the conflict points and enhance safety along this section of the cycleway. It is also important that any vehicle

[33] Integrated Transport Assessment Final Report May 2017.

accesses provide for adequate visibility of the cycleway for residents entering or leaving their properties, through such devices as visibility splays.

The development of Area B can be accommodated on the transport network with less than minor effects on the safety and efficiency of the network. Any access onto Cranford Street will need careful design and location.

5.11 Social Infrastructure

The draft Plan area is handily located to the Papanui/Northlands Key Activity Centre (KAC), which serves as a focal point for services, employment and social interaction within the wider Papanui area. It contains extensive retail and commercial facilities, health facilities, a Council Service Centre and Library, and government services such as Child, Youth and Family, Housing NZ, Work and Income and the Police. The Graham Condon Memorial Pool is located on the Papanui High School site adjoining Northlands Mall and provides a major water-based recreation opportunity to residents in the wider Papanui area.

There are several schools located nearby the area, including Papanui Primary School, Paparoa Street School, Glenmoor School, Casebrook Intermediate School, Papanui High School and Mairehau High School. There is also access to private schools including St Bedes, St Andrews and St Margarets. The two nearest schools, Paparoa Street and Papanui have no capacity constraints that would affect the scale of the proposed development.

There are several reserves, playgrounds and sports fields located close to the draft Plan area, and the Cranford Basin stormwater management area will in the long term provide a significant passive recreation facility. There are also opportunities to extend the Pūharakekenui/Styx River green/blue network through to the draft Plan area and connect it to existing reserves creating a recreation network.

Implications for enabling urban residential development

Parts of the draft Plan area are well-serviced by social infrastructure and will benefit from such a location. Depending on the demographic composition of future residents, there may be a future need to investigate whether additional community facilities are needed. Residential development in the draft Plan area may also contribute to community well-being and additional support for social infrastructure.

5.12 Land Contamination

An investigation has been undertaken to identify potential contamination of land in the draft Plan area[34].

Information reviewed for the assessment has concluded that the majority of the site has been used for horticultural/market gardening purposes since at least 1940. Other activities on the site include the storage of fuels, and potential livestock dips on areas of the site which were used for pastoral purposes.

If the sites are to be developed, further work is recommended to develop an understanding of the contamination status of the sites, including potential site investigations. The need for

[34] Beca Ltd (August 2016), Contamination Assessment – Cranford Basin .

the above work will depend on the nature of any future activities proposed for the site to determine whether consents would be required under the Resource Management National Environmental Standard for Assessing and Managing Contaminants in Soils to Protect Human Health Regulations 2011.

Implications for enabling urban residential development

The main implication for urban residential development is if there is a need for remediation of contaminated land. This will have a cost attached to it and could affect the cost of development and resulting price of sections.

5.13 Public open space

The Public Open Space Strategy (2010) outlines the provision of best practice parks planning for Christchurch. The Public Open Space Strategy states that per 1,000 people (in any proposed area), 1 ha of neighbourhood park is required and 3.5 ha of sports park is required. Existing parks adjoining the draft Plan area include Rutland Reserve (Grassmere Street) a large park at 22,000m^2, and Shearer Playground (Shearer Avenue).

Neighbourhood parks are typically 3000-4000m^2, and have playground equipment, fencing, seating, landscaping etc. Such parks should be no more than 400m away from 90% of proposed residential lots and should mostly be usable sized park land (i.e. square/rectangular, suitable for informal running around/ball games). The land should be of suitable drainage, topography and amenity/character.

Implications for enabling urban residential development

Any proposed urban residential development will be required to provide land for a park or contribute through development contributions in accordance with the Council's development contributions policy and Public Open Space Strategy.

5.14 Reverse Sensitivity Effects

Potential reverse sensitivity effects may arise from enabling urban residential development in the draft Plan area. The area is in relative proximity to the Northern Arterial Extension/Cranford Street upgrade and the Cranford Street business area which is zoned Commercial Retail Park and Industrial General. The remaining adjoining areas are generally zoned Residential or are designated.

An assessment of noise effects by Marshall Day Acoustics[35] was undertaken on the assumption that the draft Plan area would be rezoned to residential. In summary the report concludes:

- There will be negligible change in noise amenity for existing or proposed residences within any proposed urban residential development in relation to the provisions in the Christchurch District Plan;

[35] Marshall Day & Associates, Rezoning at Cranford basin – Noise aspects, 22 August 2016.

- Activities within the adjacent commercial and industrial zones will be subject to the same noise limits as they experience under the operative District Plan. However, noise limits will be 5 dB more stringent compared with the Rural Urban Fringe zone.

- New residential or other noise sensitive activities establishing next to road infrastructure will be subject to the same façade sound insulation requirements irrespective of their zoning under the Christchurch District Plan.

Implications for enabling urban residential development

There are no significant implications in terms of reverse sensitivity if urban residential development is established in the draft Plan area. Existing noise limits apply and will continue to apply to any future activities.

5.15 Funding of infrastructure

Christchurch City Council uses development contributions as the primary method of funding growth-related infrastructure outside a development footprint. This approach reduces the funding required from existing residents via rates to fund infrastructure for growth that primarily benefits the owners or occupiers of growth developments. Infrastructure required within a development footprint is required to be provided by the developer as a condition of resource consent.

The amount charged for a development contribution for a residential development is based on the cost of providing infrastructure to service growth by activity and catchment. In the case of the Cranford development(s), under the current development contributions policy, the charge would be approximately $34,000 per additional residential lot.

In situations where the Council and developer agree to an alternative approach to infrastructure provision, this can be undertaken either through a contract agreement (e.g. the Council requests the developer to provide an asset to higher standard or capacity than would normally be required and agrees to pay the developer the difference in cost).

Another approach is for the Council and the developer to agree to enter into a private development agreement (PDA) (see section 3.2 of the Council's development contributions policy for details). A PDA is an agreement, between a developer and the Council that provides for the developer to provide land and/ or infrastructure in lieu of cash development contributions. Alternatively, land or works may be deferred, reallocated or used as compensation for additional demand placed on infrastructure resulting from development. A minimum of two members of the Executive Leadership Team must approve the terms of a PDA on behalf of the Council.

Note that development contributions for one activity cannot be offset by credits a developer receives from another activity. For example the provision of a road to a higher standard can be used to offset transport development contributions but not any other activity. If there is residual credit the Council must fund this from its transport budget.

5.16 Summary

The above analyses and the technical reports behind them have raised some concerns about potential effects which will require any development to be planned comprehensively, particularly in dealing with transport and geotechnical issues. Such issues are best managed through an Outline Development Plan (ODP), a method used in the Christchurch District Plan to manage greenfield development areas to ensure integrated and coordinated development.

It will also be essential for some form of hydrogeological/stormwater management plan to be in place before subdivision consent is granted. The costs of this should be borne by the developer as part of applying for consent.

It is desirable to have a limit on the number of households in Area A to reduce the risk of adverse effects on hydrogeology, and to limit adverse effects on the local road network. This limit should be set at around 350 – 400 households.

Development in Area B is limited by the amount of land. Also the identified access/egress issues onto Cranford Street for the Case property will limit the number of trips/households that should be provided for, with the primary access from Croziers Road.

The overall conclusion from the technical reports is that residential development can be serviced with the necessary services and potential adverse effects can be avoided remedied, or mitigated. As signalled in the objective for the Outline, a waterway and pedestrian cycle connection network, including integration with adjoining residential areas, stormwater management areas and the proposed Northern Arterial Extension is both feasible and desirable. The urban development around the edge of the Cranford Basin can be integrated (in transport and other infrastructure terms, with the surrounding urban environment.[36]

6 Residential land demand and supply

6.1 Introduction

Consultation with other parties[37] raised a question as to whether redevelopment for residential purposes in the draft Plan area is necessary to address a residential land demand and supply issue. That question is addressed in this section. However, the Council (as proponent) considers that the Act has a regeneration purpose, not a land supply purpose. There does not need to be a land supply shortage in order for the Minister to reasonably consider it necessary to approve the draft Cranford Regeneration Plan. This is further addressed in section 11.1.7 below.

In rezoning considerations in standard RMA processes, the question of need is only a relevant consideration if the rezoning is inconsistent with an urban growth policy (e.g. where it contributes to urban sprawl), or is likely to have significant effects on the environment (e.g. where intensification significantly alters the character of a residential area). In these situations some form of trade-off is required which balances these negative outcomes against the need for more housing.

The requirement for such a trade-off is less likely to exist where the rezoning patently supports the prevailing urban policy and where there is a net positive environmental outcome from the land use change. The only relevant consideration is whether the immediate rezoning will cause inefficiencies through slowing down land development in areas that are already committed but as yet not developed, whether they be in the Greater Christchurch area, greenfield, intensification areas, or the Central City i.e. whether there could be 'distributional effects'. Account also needs to be taken of the lag effect between making the land available

[36] Outline for Proposed Cranford Regeneration Plan Objective page 1

[37] These are parties as defined under section 33 and 29 of the Greater Christchurch Regeneration Act

through rezoning and the time houses start to be sold. For the Cranford area, this is likely to be anywhere between three and five years.

This section examines whether there is justification in terms of housing and section demand to use the Act to rezone land in the area now (while noting that the proponent considers that this is not part of the test for whether the Minister ought to approve the Regeneration Plan). It begins with an overview of development capacity and take up within the context of the Greater Christchurch Urban Development Strategy (UDS), and local area. It then provides data on price trends in the Papanui area based on figures from Quotable Value (QV) and then comments on whether there are likely to be any distributional effects on other planned development areas, including the Central City.

6.2 Capacity and demand for urban residential development

This section relates to the capacity (supply) of residential land, demand and the effects of any additional capacity on development elsewhere including the residential development targets in the Central City Recovery Plan.

The National Policy Statement on Urban Development Capacity (NPS-UDC), gazetted on the 3rd of November 2016, is part of a suite of measures by the Government aimed at making housing more affordable and providing a more enabling planning framework. The NPS-UDC requires planning for longer term timeframes of 30 years (through to 2046). It also requires that Statistics New Zealand projections be used to determine the demand and capacity required. Those projections anticipate a slightly lower level of demand through to 2028 than the projections included in the Land Use Recovery Plan (LURP).

The NPS-UDC also requires that capacity for a range of housing and business types be provided to meet the anticipated demand. Housing supply will include consideration of the short, medium and long terms, whether land is zoned and serviced (or intended to be serviced through the Council's Long Term Plan), and 'feasible' or commercially viable. Moreover, the NPS-UDC requires Councils to 'over provide' to compensate for the possibility that land already set aside for development may not be feasible.

6.2.1 Housing and land requirements

Projected household growth for Christchurch City is 23,700 at 2028[38]. Approximately 45% of these households are targeted at intensification and the rest through greenfield development (some 13,000 households). Translating these households into greenfield land demand requires assumptions on two key variables: the percentage of household growth going to greenfield (as opposed to infill/intensification); and the density at which greenfield development takes place. In relation to the second variable, Policy 6.3.7 of the CRPS requires that development in identified greenfield priority areas (as shown on Map A) achieve a density of 15 households per hectare (hh/ha).

Table 1 provides an indication of the greenfield land that would be needed to support different intensification assumptions to achieve the LURP projected growth, based on a greenfield density of 15 hh/ha.

[38] Land Use Recovery Plan. Table 1: Projections for household growth in metropolitan greater Christchurch 2012–2028, including additional earthquake relocation and temporary housing demand, page 13.

Table 1: The effect of different ratios of greenfield development to intensification on greenfield land requirements.

Percentage of growth accommodated in greenfield (vs intensification growth)	Greenfield land needed
30 (70)	474ha
55 (45)	869ha
75 (25)	1185ha

The 70% intensification figure is the upper limit proposed by Dr Douglas Fairgray in his evidence to the Independent Hearings Panel[39], while the 25% is approximately the lowest intensification ratio recorded over the past 10-15 years. Using the 55/45 greenfield/intensification split, 869 ha would be needed or taken up by 2028.

The Council's vacant land register currently has 2250ha shown as vacant zoned residential land (as at December 2016). This consists of land in the greenfield priority areas (Residential New Neighbourhood Zones) , greenfield land rezoned in the Operative City Plan but not yet developed (e.g. Masham), and ad hoc pieces of land that are currently vacant in residential areas. It also includes areas on the Port Hills and Banks Peninsula.

There are three broad categories of vacant land with different growth pressures and markets as shown in **Table 2**. Vacant land on the 'flat' is most relevant to assessing the need for residential development in the draft Plan area. For the purposes of growth management in Christchurch, the focus will be on the flat areas of Christchurch.

Table 2: Categories and quantity of vacant land (rounded) as at 2016

Christchurch 'flat' areas	1400ha
Christchurch Port Hills	500ha
Banks Peninsula	340ha

Refer to **Appendix 2** for further detail.

[39] Statement of evidence Dr James Douglas Marshall Fairgray. Residential Intensification. 11 March 2015. Independent Hearings Panel. Section 5 page 11-12

6.2.2 Take up rates

The average rate of take up of vacant residential land for all above categories over the past 10 years for the whole of Christchurch has been 150 hectare per annum, with a range of 328ha in 2005 to 19ha in 2015. A more detailed breakdown in terms of **Table 2** shows the average rate of take up for greenfield land on the flat is around 85 ha per annum, 25 ha per annum on the Port Hills and the remainder taken up in the existing urban area and former Banks Peninsula District. Projecting this forward around 850 hectares will be taken up by 2028 on the flat which is consistent with the 55(45) greenfield/intensification split assumed above.

Under these take up rates there would be 600-700 hectares of vacant residential land remaining on the flat in 2028. Based on historical and current experience this appears to be sufficient for the residential land market to provide the choice and quantity of housing needed to meet future needs of Christchurch until 2028, but may not be sufficient to meet the requirements of the NPS-UDC for medium term contingencies[40].

6.2.3 Current capacity constraints

Capacity is reliant on the provision of infrastructure and willingness of land owners to release zoned land at a particular price (the NPS-UDC is silent on the latter). There are various constraints limiting the availability in some parts of Christchurch. Within the greenfield priority areas, as identified by the CRPS, there are three specific constrained areas:

a. Prestons Road has 500 sections limited until the upgrade of surrounding intersections. Highfield Park (over 2000 potential households near the draft Plan area) is constrained until there are infrastructure upgrades, which are within the Council Long Term Plan but could be brought forward if developer led.

b. South Awatea has 800 sections constrained until the Kart Club relocates. These constraints are unlikely to prevent planned targets for 2028 from being met as major works are underway or planned in the planned South West Greenfield Priority Areas. This includes new pressure mains system, stormwater upgrades, transport upgrades and wetland development. These are set to be completed by 2025.

c. Around Belfast, water supply, wastewater and intersection upgrades are due to be completed by 2018. The infrastructure programme should enable the ongoing availability of sections through to 2028. However, planned areas in Belfast have not developed within programmed timeframes due to extraneous factors such as landowners not reaching agreements over how their area should be developed, and financial difficulties stalling other planned developments.

Within the current Christchurch urban area, the Port Hills and Banks Peninsula, there are various localised constraints on development, including topography. For instance there is a constraint on further intensification in Riccarton until the wastewater interceptor is upgraded.

If landowner coordination problems and other constraints cannot be resolved, a localised shortage of greenfield land could emerge particularly in the northern growth area.

[40] The Council is currently taking steps to evaluate the implications of this requirement for assessing adequacy of urban development capacity.

6.2.4 Sections

The Council maintains details on the potential number of sections that could be developed in the main greenfield areas, including figures on the various stages of development and infrastructure constraints.

Since February 2011, land for around 10,592 sections had been rezoned for housing, providing over half the number of sections anticipated to be needed.

The number of sections that have been given subdivision consent, or for which consent has been applied for in greenfield priority areas, is 5,099 (25% of the total anticipated in the LURP priority greenfield areas). Of these consented sections, 2,633 sections have been progressed by developers to the stage of gaining s224 approval (which means they have completed all the necessary works and certificates of title can be issued).

There are a significant number potential sections still subject to some form of infrastructure constraint, mostly in the South West growth area, Prestons and Highfields. Some 797 potential sections in Awatea await a decision regarding the relocation of the Kart Club.

6.2.5 Summary

At a headline level there is sufficient land to meet likely greenfield demand until 2028 under current assumptions. However there are risks that some of the planned development areas may not get houses to the market until late in the 2016-28 period, which could lead to insufficient development capacity, particularly in the northern part of the City. Section data suggests that there are sufficient numbers of 'shovel ready' development opportunities to meet immediate needs in most parts of the City.

Enabling urban residential development in the draft Plan area will add to capacity in the northern suburbs and contribute to lowering any risk of a shortage in development capacity in the 2020-28 – the anticipated development period for Cranford. However, given the proximity of part of the draft Plan area to a Key Activity Centre, a more important consideration is the contribution it could make to meeting intensification targets.

6.3 Residential medium density supply

Most intensification will occur in Christchurch City, however it will be supported across Greater Christchurch. Objective 6.2.2 of the CRPS sets intensification targets for specific time frames as:

- 35% averaged over the period between 2013 and 2016;
- 45% averaged over the period between 2016 to 2021; and
- 55% averaged over the period between 2022 and 2028.

In its decision on Stage 1 residential for the Replacement District Plan, the Independent Hearings Panel considered that the Council's original proposal (notified in August 2014) did not provide sufficient area to accommodate the intensification targets outlined in the LURP. The Council was directed to notify larger parts of Hornby, Linwood and Papanui than originally proposed for Residential Medium Density. The area that was notified for Papanui is shown in *Figure 9*. However, in its decision on the additional notified areas[41] the Independent

[41] Christchurch Replacement District Plan Decision 41

Hearings Panel reduced the extent of Residential Medium Density in Papanui to that shown in *Figure 10*, retaining the zoning of the area along Blighs Road, south of Grants Road, and St James Avenue as Residential Suburban.

Evidence presented at the hearings stated that the likelihood of redevelopment around the Papanui/Northlands KAC was higher than some other Residential Medium Density areas (Hornby, Linwood). However this likelihood of redevelopment in the Papanui area itself varied with North Papanui being significantly lower that other Residential Medium Density areas around the KAC.[42]

The draft Plan area has an opportunity to provide for urban residential development to meet a recognised shortfall of medium density housing in the Papanui area, where feasible. This is particularly the case for the land that abuts the existing urban area at Grassmere Street.

[42] Statement of evidence of William Blake on behalf of Christchurch City Council Valuations 8 June 2016.

Additional new areas proposed for residential medium density – allows for smaller section sizes a houses built up to two storeys.

Residential medium density*

Residential suburban density transition – allows for smaller section sizes

Residential suburban – generally one house per original section

Key activity centre – Papanui (Northlands)

Figure 9: Additional residential medium density areas surrounding Papanui/Northlands Mall KAC notified in February 2016

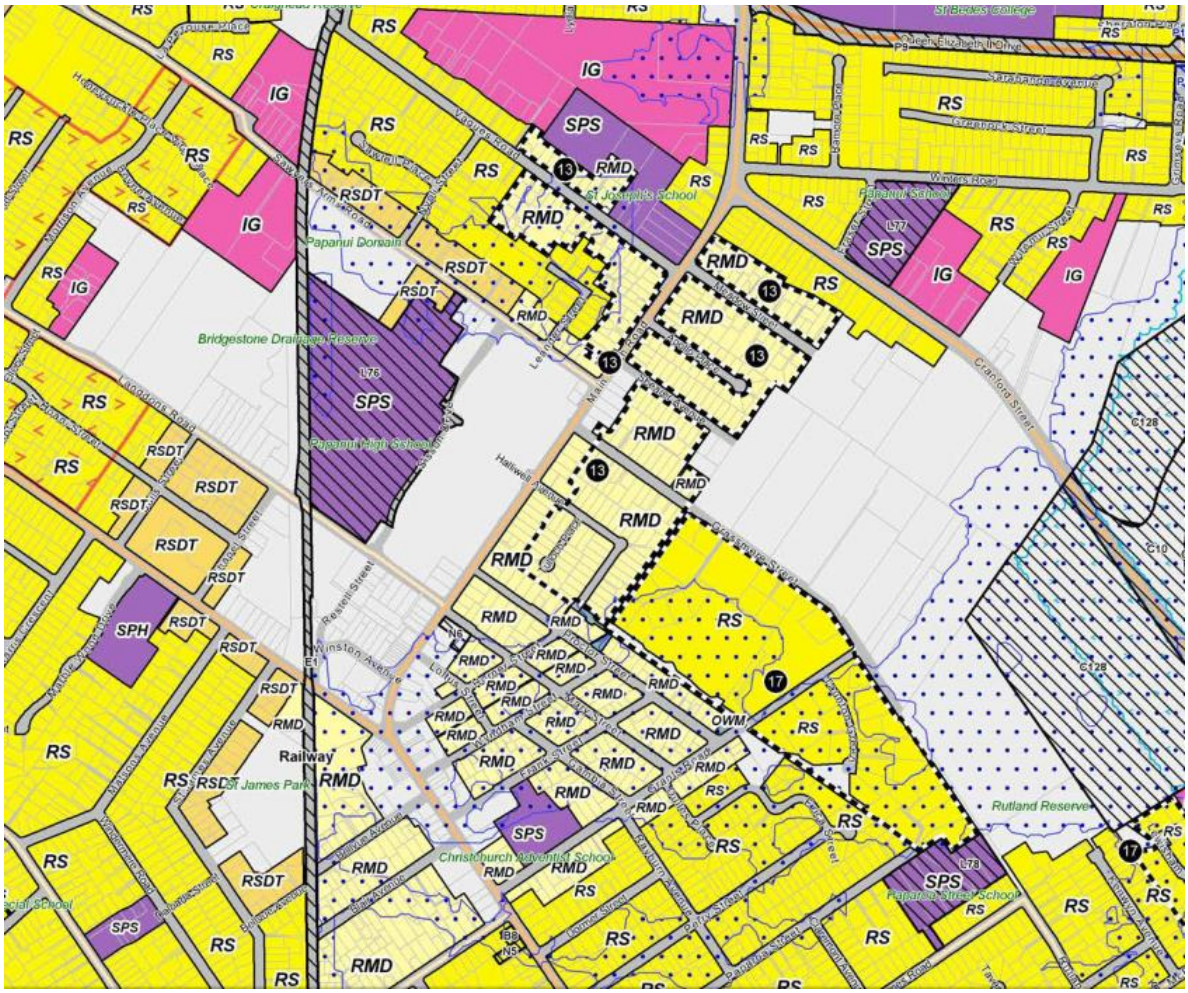

Figure 10: Residential medium density zoned areas surrounding Papanui/Northlands KAC determined by the Independent Hearing Panel Decision 41

6.4 Local land and housing market

The housing around the draft Plan area is a mixture of medium density and traditional suburban density. It also provides for a broad range of socioeconomic demographic characteristics.

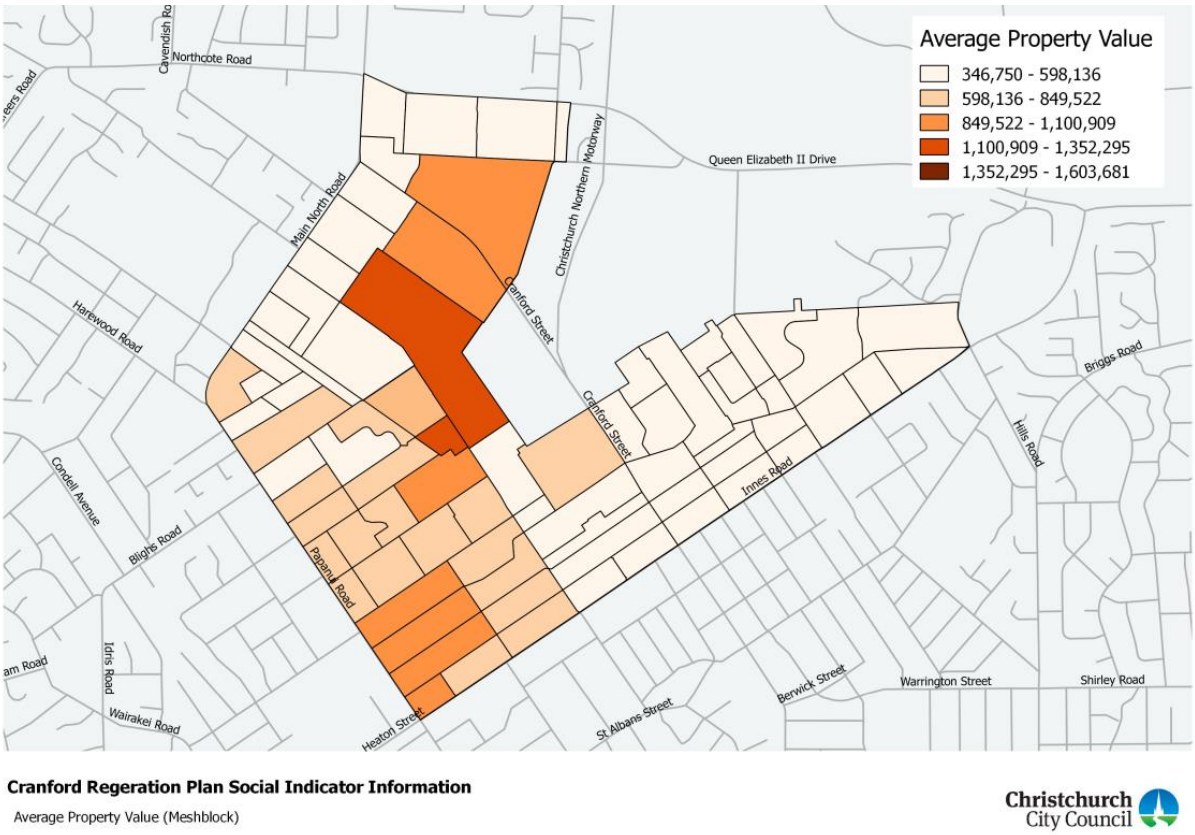

Figure 11: Social Indicator Information for area surrounding the draft Cranford Regeneration Plan extent

This is evidenced by *Figure 11*, which shows the average property values by mesh block (the smallest geographical unit Statistics NZ uses for reporting statistics). There is a significant variation in prices across the area generally moving north-west toward the Papanui/Northlands KAC. The fluctuations in property values may also result from environmental factors in the surrounding residential and commercial areas. The values decrease westwards along Innes Road and northwards along Papanui Road. This may be caused by the proximity and ease of access to major facilities such as the St. George's Hospital, Merivale, and school zonings. The highest values are in the former very low density Living 1B Zone (now peat overlay) which are predominantly 2000m^2 sections which command a high value.

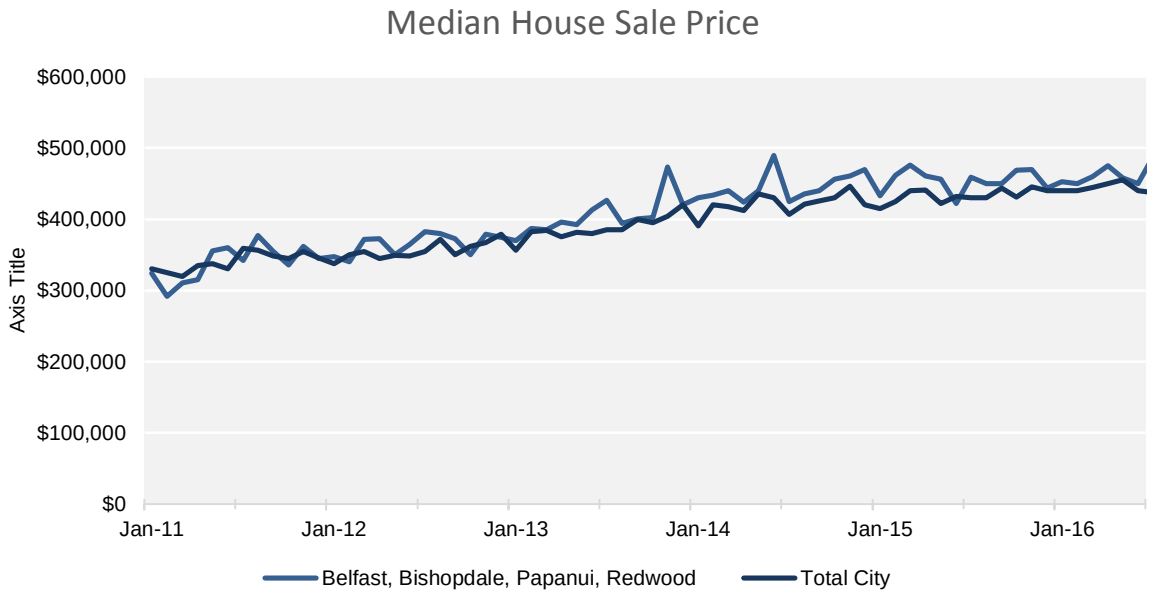

Figure 12: Median House Sale Price

The median house sale price in the Belfast, Bishopdale, Papanui and Redwood area (*Figure 12*) shows that over the last 5 years there has been a steady increase in the median house sale price comparable to the wider City sales. At this broad spatial level there appears to be no obvious excess demand for housing, although as *Figure 10* shows there is a significant variation in property values in the area around Cranford.

By contrast the median section sale price for the Belfast, Bishopdale, Papanui, Redwood area, when compared to other growth areas, such as South West Christchurch, show large variances (*Figure 13*). This is possibly due to sales of large sections. South West Christchurch and the rest of the City have some price variance, but not as pronounced as those seen in around the draft Plan area.

Volumes of sections sold in northern parts are low when compared to Christchurch's South-West and suggest very little activity in the area (*Figure 14*). However, due to the location of these sections being within a well-established urban area, the fewer sales would have occurred at a higher exchange value than sections in the South-West.

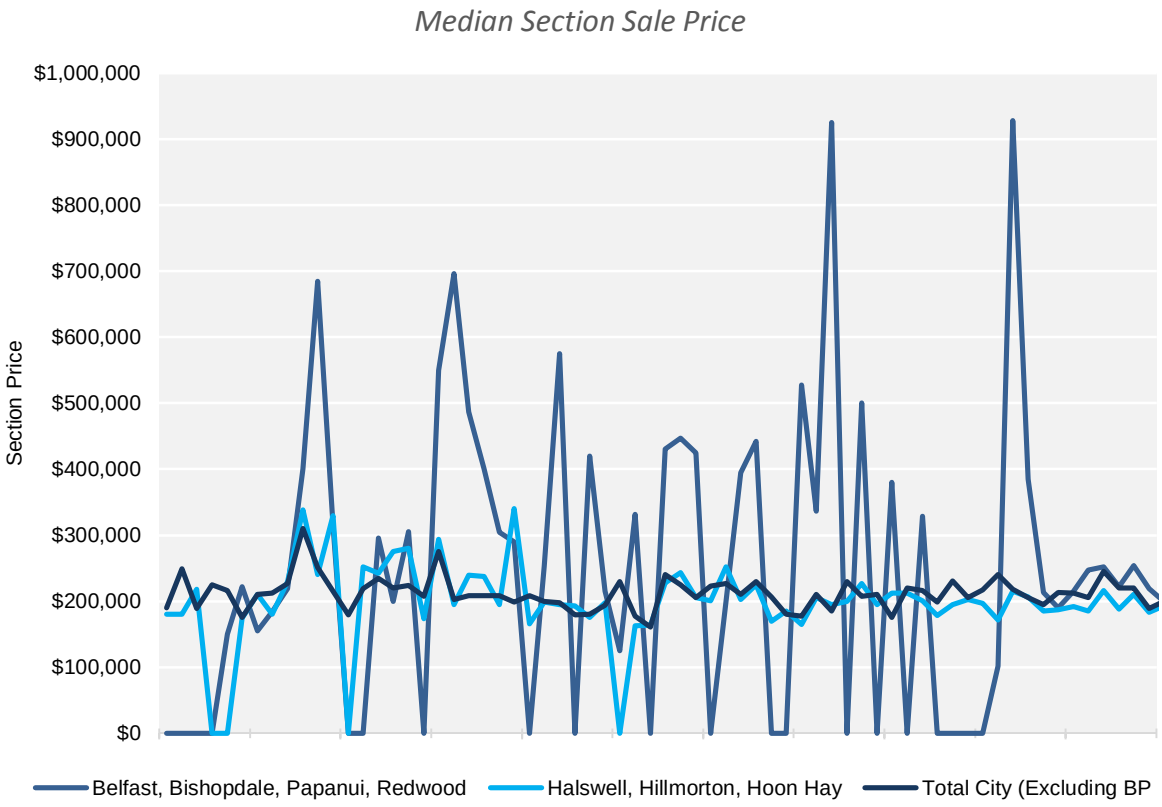

Figure 13: Median Section Sale Price

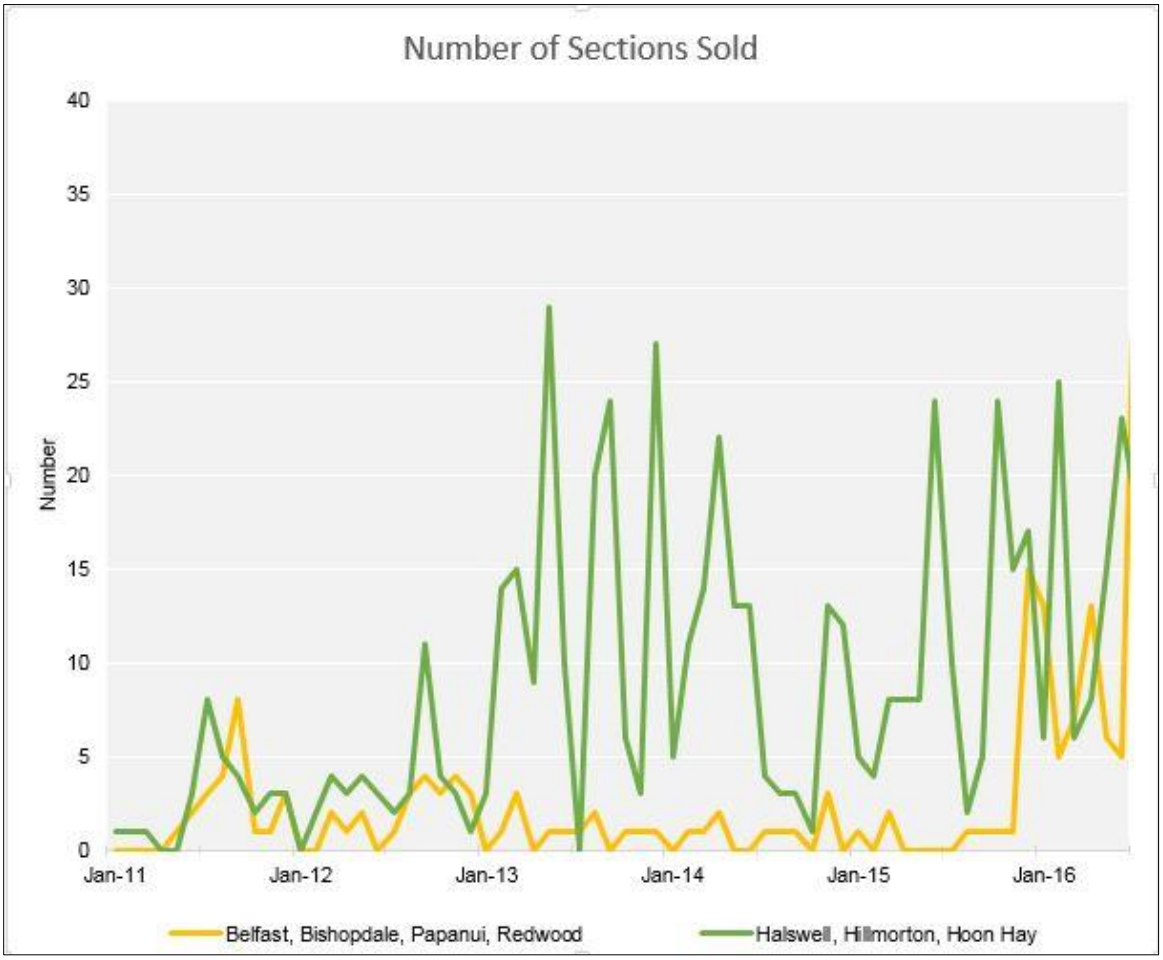

Figure 14: Number of Sections Sold

The comparison of the two areas of the city highlights that increases in land releases will help in keeping median section sale prices lower. Additional residential land enabled in the draft Plan area may reduce the variance in section prices in the short term by increasing supply, particularly for residential medium density.

6.5 Distributional Effects

The potential effects of urban residential development in the draft Plan area on the proposed housing in the Central City East Frame, and the Central City generally, has been considered. Increasing the Central City's permanent resident population is a priority for the Council and on-going decentralisation has the potential to slow down the rate of development in the Central City. Careful consideration needs to be given to whether medium density in the draft Plan area will impact on the marketability or take up of housing in the Central City.

Four factors have been considered in assessing the potential impact of enabling residential medium density in the draft Plan area:

The marginal increase in household numbers being proposed

Based on LURP projections Christchurch's household numbers will increase by around 23,000 over the 2016-28 twelve year period, with 13,000 happening between 2021 and 2028 or at a little under 2,000 per annum across the City. Opinions vary around the percentage of households that will be created through intensification but the assumption used in Section 6.3 was 55% or 7000-8000 households. The draft Plan area could be expected to provide up to 200 of these or 2.5-2.8% over the whole period. However, assuming sales at 50 medium density houses per annum on average in the ODP area, the amount of growth being 'diverted' to the draft Plan area from other existing and potential intensification areas, including the Central City, is around 2.5% for four years only. For context, there are ten KACs or large neighbourhood centres, several residential medium density developments in greenfield areas and residential medium density covers much of the inner suburbs. If there is an impact on other intensification areas the 200 units proposed is likely to affect mainly the Papanui intensification area and other RMD areas in the north west.

Theoretically some development in the draft Plan area could go to the Central City, this is unlikely for the reasons given below, and growth would be absorbed in the suburbs. Moreover, the East Frame development will have already been significantly progressed before development in the draft Plan area gets underway. Also evidence given at the District Plan hearings, and to some extent accepted by the Independent Hearings Panel, was that further provision of residential medium density was needed to ensure an adequate supply of intensification over the next ten years.

In the context of other intensification enabled through the District Plan, including the Enhanced Development Mechanism, and Community Housing Redevelopment Mechanism, the effects of any additional medium density housing enabled in the draft Plan area on these other intensification areas, including the Central City, is likely to be insignificant.

Market difference

Advice from Knight Frank is that one of the strongest drivers of housing preference is location[43]. People chose to live in specific locations for a number of reasons, including historical connections, school zones, or price bracket and affordability. To that extent locations do not really compete against each other, they offer a different lifestyle choice that will appeal to different people. Higher density developments in the inner city are likely to appeal to the investor as much as owner occupiers. Whereas more traditional suburban locations are more likely to appeal to owner occupiers. Knight Frank consider that the prospect of new housing in Papanui or any of the other KAC competing with housing in the inner city, is 'very low'.

Socio economic differences

The advice from Knight Frank, discussed above, is consistent with a comprehensive residents' survey undertaken in 2013 by the Council and IPSOS[44]. The survey was commissioned by the Council to establish who wants to live in the Central City, housing preferences and what would enhance the area as a potential home. Forty –eight per cent of

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43 Letter dated 3 March 2017 from Knight Frank ref LRT CCC 2017 Papanui RMD area.

44 Developing the Central City as a place to live. Who will live there and what they want: Christchurch Central City Living Research — Summary Report Conducted by IPSOS and Christchurch City Council, 2013.

those surveyed said they would consider moving to the Central City at some stage (or are already there) and 14% said they would consider moving during the rebuild. The 14% was roughly split between younger people with no children and more established households, with older children or children left home. With regard to the former group, leisure time is spent socialising at bars, restaurants, shopping, visiting cafes and going to the gym. Tenure preferences were equally weighted towards owning or renting, although typically renters. Slightly more of the latter groups prefer owning (55%) to renting (45%). They want a similar lifestyle to the suburbs with parks and car parking. In their leisure time, they participate in cultural activities, socialise in bars, go to restaurants, shop, visit cafes and parks and go to the gym.

The remaining 52% ('confirmed suburbanites') are a distinct market segment which perceives the Central City to be too cramped, lacking in privacy, too busy and just not appealing. They are also happy living where they are and have everything close that they need.

Timing

If the proposal receives Ministerial sign off in June/July 2017 the first houses are unlikely to be available in Cranford before 2020/21. It is likely that developers will need to spend at least 12 -18 months preparing for and obtaining subdivision consent, and a further 6-12 months site preparation and servicing. Houses will then then need to be built, marketed and occupied. Depending on the rate of sales it could be 2022/23 before the first 100 medium density houses are sold.

The East Frame development has already started and will have significantly progressed by 2022/23. Depending on the popularity of the development the East Frame should have gained sales momentum and therefore will have a competitive advantage in attracting potential households, with a significant number of the proposed 900 units already sold.

Conclusion on distribution effects

None of the above is conclusive proof that there will not be any distributional effects on the Central City arising from the potential residential medium density in the draft Plan area. However, the overall picture is that, at least during the rebuild, the number of potential Central City residents attracted to the draft Plan area is likely to be very small.

6.6 Conclusion on land supply

Christchurch appears well positioned to fulfil its obligations under the NPS-UDC and LURP. Overall there should be no shortage of housing land capacity before 2028 under current assumptions. This is dependent on infrastructure constraints being progressively removed and landowners making their land available for development. It is also dependent on further work to quantify the level of feasible capacity (rather than theoretical) and the capacity for different forms of housing types (demand).

The information in this section suggests that there could be a potential shortfall in land supply in the northern part of Christchurch if development of planned areas does not start happening in the near future. Trends in median house prices surrounding the draft Plan area reflect those for Christchurch as a whole, but section prices indicate a strong demand and a lack of available land. Anecdotal evidence suggests that houses in the area sell quickly. One justification for "enabling a focused and expedited regeneration process" (the Act Section 3(1)(a)) is the need for additional land for housing in an area experiencing above average land price increases. Another is the lead-in time for development (up to five years). If the plan change process was delayed until after 30 June 2021 (revocation date for the Order) house

building in this location will not be initiated much before 2028, which will exacerbate the local shortage of sections, assuming the CRPS is changed to amend the Projected Infrastructure Boundary. Furthermore, if the CRPS review is initiated in 2020 as planned no development in the Cranford is likely before 2030.

The additional land being proposed for housing, together with the enhancement of the Cranford Basin stormwater management area, will provide additional supply and will contribute to regeneration of parts of the surrounding community. It has potential to provide additional residential medium density development to support the Papanui/Northland KAC and other social infrastructure. Any distributional effects are likely to be insignificant and affect other suburban residential medium density areas rather than the Central City.

PART C. THE PROPOSAL

7 Vision and goals

Taking into account the implications for urban residential development identified in Section 5 and the objectives of the draft Cranford Regeneration Plan specified in the Outline, the following vision and goals have been developed for the proposal. These will guide the assessment of land use options and other methods.

The overall vision for the draft Plan area, is that by 2030 the Cranford Basin stormwater management area will be surrounded by innovative and low impact residential development in conjunction with the enhancement of natural water features, open space networks and walking/cycling connections, all of which will contribute to the recovery and regeneration of Papanui/St Albans and Greater Christchurch.

As a first step towards achieving this vision, the following goals have been set for the Area's regeneration, management and use.

Goal 1: *Residential development, in appropriate areas, that provides for a choice of housing types, sizes and densities to provide for a range of housing needs and help meet the household growth targets for Greater Christchurch.*

Goal 2: *Residential development that promotes sustainability through innovative architecture, low impact urban design and integration with adjoining residential areas.*

Goal 3 *Integration of new residential areas with infrastructure (including the proposed Northern Arterial Extension, public transport, and water and waste networks), walking/cycling networks, and future planned enhancements for Cranford Basin as a major stormwater management facility and public open space asset.*

Goal 4: *Development that is located to avoid recognise or respond to risks from natural hazards and the specific geotechnical conditions of the land.*

Goal 5: *Development that provides for and where possible enhances ecological values particularly in-stream values.*

Goal 6: *Development that enhances, provides for and protects Ngāi Tūāhuriri/ Ngāi Tahu values, including through low impact built development that is sensitive to the geo-hydrological features of the draft Plan Area and surrounding environment.*

Goal 7: *Support the development of the draft Plan area in an efficient and timely manner.*

Goal 8: *Ensure that the relevant resource management documents, specifically the Canterbury Regional Policy Statement and the Christchurch District Plan, and any other applicable Plan[45], strategy, or other RMA document[46], are amended to facilitate and expedite goals 1 to 6 above.*

[45] As defined by the Greater Christchurch Regeneration Act 2016.

[46] As defined by the Greater Christchurch Regeneration Act 2016.

The ultimate land use outcome envisaged is shown in *Figure 15*.

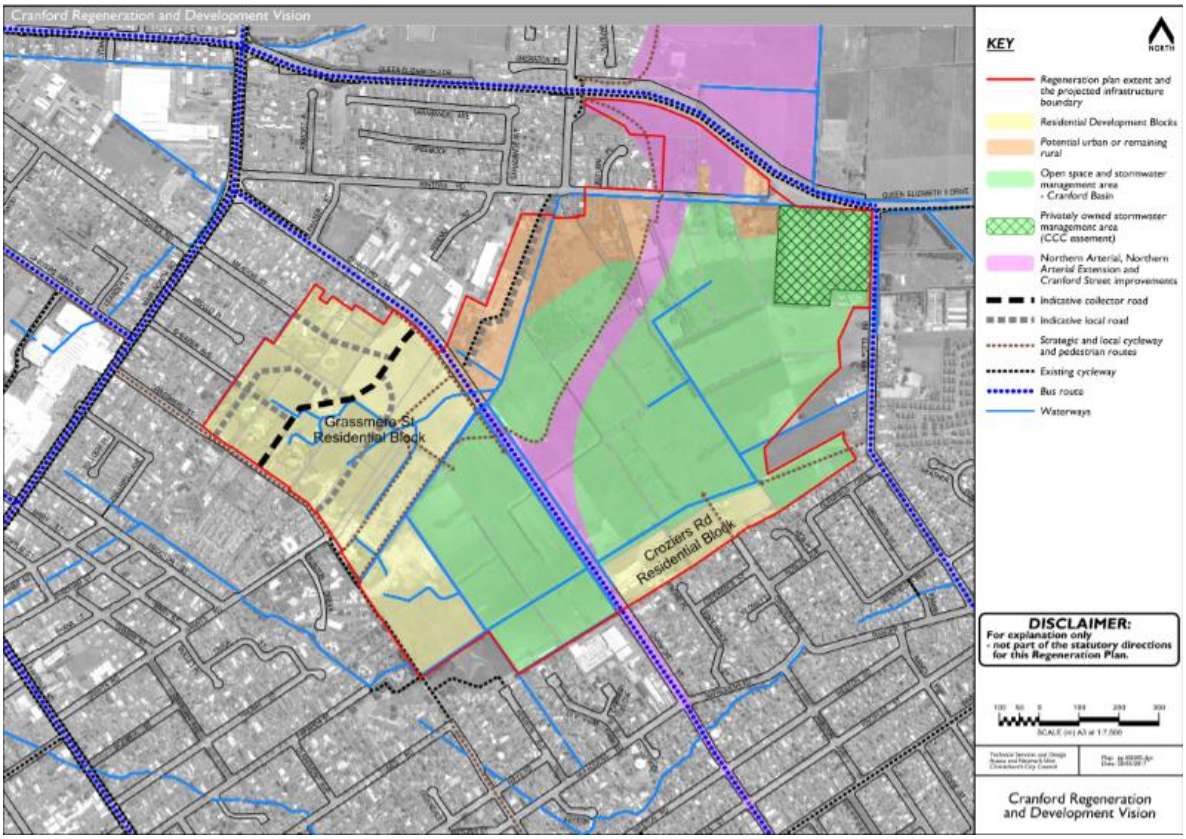

***Figure 15: Overall Vision for Cranford Regeneration Plan Area*.**

8 Alternative Processes

8.1 Assessment of Options for enabling urban residential development in the draft Plan area

The following table compares and contrasts various processes through which urban residential development in the draft Plan area could be pursued, that is remove the restrictions preventing urban residential development from occurring. This is relevant to both whether approval of a draft Regeneration Plan is in accordance with one or more of the purposes of the Act (section 11(1); "enabling a focused and expedited regeneration process" (s.3(1)(a)) and to whether the Minister can reasonably consider it necessary to approve the Regeneration Plan (s.11(2)).

A more detailed assessment of the provisions of the Act is discussed in Section 11.1.2.

OPTION	COMMENT	TIME	ADVANTAGES	DISADVANTAGES
Regeneration Plan Regeneration Plan for CRPS change	Must be in accordance with purpose of GCRA and the Minister must reasonably consider it necessary	Approx. 6 months (from February 2017)	Speed of process means that development can begin much sooner.	No hearings process to independently test robustness of Regeneration Plan

OPTION	COMMENT	TIME	ADVANTAGES	DISADVANTAGES
and CDP plan change (Sections 28-39 of Act).	Changes able to be made to multiple RMA planning instruments (e.g. CRPS, CDP) through single process. Two major phases - Outline (Sections 28-32 of Act) now approved by Minister; and development of draft regeneration plan (Sections 33-39 of Act). Regenerate Christchurch has review and recommendation role.			
Section 71 of Act Section 71 Plan for CRPS change and CDP change (Sections 65-73 of Act)	"Concise draft proposal" to be prepared (Section 65 of Act).	Approx.5 months from February 2017 if the Minister does not decline the proposal.	Short time frames May need to include another round of consultation to overcome risks associated with s69-71 decision.	Is less suited to comprehensive development proposals as the Minister has no power to change proposals following public notification for written comments. Proposal that goes to Minister must be definite. Minister may decline proposal but cannot make changes to document once he receives it.
Section 71 Plan & Regeneration Plan Section 71 Plan for CRPS change and Regeneration Plan for CDP change	Use different processes for changes to the CRPS and CDP. A Regeneration Plan could be developed for the CDP residential development proposal.	See above.	Section 71 may be used for CRPS changes if changes relatively straight forward. Regeneration Plan may be better suited to CDP as changes are more complex and able to accommodate different owners' aspirations.	Doesn't get to end result of developing the land any quicker. More complex process as two concurrent processes are involved – needs to be carefully integrated.

OPTION	COMMENT	TIME	ADVANTAGES	DISADVANTAGES
Review of CRPS	Review scheduled for start around 2020.	Appeals could take further 24 months from 2023.	Follows standard RMA processes.	Does not assist the goal of making land available sooner than that date. Separate process needed to change the CDP if CRPS is amended
Development through resource consent based on current provisions in CDP	Applicants apply for non-complying resource consent to subdivide land for residential purposes without plan changes etc.	Process could take 6-24 months from the time an application is lodged.	Follows standard RMA processes. May be possible to obtain consent for non-complying activity, for minor subdivisions, if case can be made that effects can be avoided, remedied or mitigated and objectives and policies of plans are not undermined. N.B. provisions of CRPS are only required, subject to Part 2 to be "have regard to" (Section 104(1) of RMA). Note that Section 104D (1) still applies.	May be difficult to consent particularly larger subdivisions (see advantages). Applicant takes risk with no certain outcome as decision made by Commissioner. Land use consent for houses and other activities required (including bulk and location etc.) - likely to be complex process particularly for larger subdivisions. Does not facilitate the advantages of integrated development.
Revoke the Order in Council immediately/Alter Schedule 7 (2A) of the Act	The Order is no longer relevant when the Independent Hearings Panel has completed its obligations in relation to any matters referred back to it by the High Court on resolution of appeals.	Depends on the priority given to this by Cabinet in an election year but could be done within six months.	Removes the impediment to changing the District Plan. Would enable proceedings through standard RMA plan change process.	If standard RMA plan change process is used then timeframes are the 9-27 months referred to above following the revocation of the Order or change to clause 4 of the Order. Would still require CRPS to be amended.
Do nothing	Do nothing option results in retention of status quo i.e. no urban development. Change would be dependent on plan	NA	All potential extensions to PIB can be considered at same time	Opportunity costs until the review from rural land that can't be used efficiently. Does not

OPTION	COMMENT	TIME	ADVANTAGES	DISADVANTAGES
	change, subdivision etc. options.		through CRPS review	achieve the regeneration purpose of the Act.

8.2 Summary

In the absence of changing the Order to enable plan changes through the standard RMA process, use of a regeneration plan provides for a focused and expedited process. It enables holistic and integrated planning of changes to the Canterbury Regional Policy Statement and the Christchurch District Plan, provision for integrated development of the area through an outline development plan process, and an overarching guide through the draft Plan for achieving all of the social, cultural, economic and environmental aims of the draft Plan.

Not undertaking a Regeneration Plan means that a plan change to rezone the land in all likelihood need to await the completion of the CRPS review (until at least 2023). Subsequent Schedule 1 processes to change the District Plan, obtaining subdivision consents, issue of title etc. means that houses may not become available to the market until 2030.

9 Land use options assessment

This section provides a planning evaluation of the future land use options under the Christchurch District Plan that could apply to the area outside of the Cranford Basin stormwater management area. The assessment is informed by the land use capabilities and constraints identified in Section 5, supported by technical reports. These are focused on water management, hazard avoidance and low impact urban design to achieve the vision and goals outlined in Section 7. It steps through a series of decisions, from the broad question of whether rural or urban zoning is appropriate down to the detailed question of what type of zoning and limitations should there be in the draft Plan area. The decisions in these steps will determine a preferred option and identify what changes are needed to the Christchurch District Plan and the Canterbury Regional Policy Statement.

Areas referred to in this section make reference to those shown in *Figure 3* in Section 5.

9.1 Decision 1: Rural or Urban Zoning

At the broadest level there are two land use options for the future use of the areas not required for stormwater management purposes: Rural and Urban. Both these options can be considered in the context of the Cranford Basin stormwater management area being transformed into a multi-purpose urban wetland providing for a diverse range of recreation, ecological and cultural values that will attract people to and through it.

In assessing whether changing the current rural zoning is most appropriate for achieving the purpose of the Regeneration Act, particular regard has been given to Section 3 (2)(b) of the Act and whether there would be an improvement in economic outcomes. The Council

commissioned a report from Market Economics Limited[47] to help answer this question. This report complements an earlier report by the same company in 2009 that covered the wider rural area in Christchurch City.

The Rural Urban Fringe Zone permits a range of activities, most of which are directly dependent on the rural land resource, for example:

- Farming
- Rural produce retailing
- Rural produce manufacturing
- Residential activity in association with farming
- Home occupation,
- Conservation activity
- Recreation activity
- Rural tourism activity
- Emergency service facilities
- Veterinary care facility

The 2017 report compared the potential rural economic value of the land against that of a residential development. 'Based on a narrow Cranford area perspective, the move would generate a net positive effect that is estimated to be between $6.5m and $8.0m of Value Added (on an annual basis; depending on the development intensity). However, we anticipate that the bulk of the economic effect will arise due to potential urban efficiency gains. Leaving the land zoned as rural means that these net benefits would be foregone'[48].

In addition to these effects and gains, developing the Cranford area is also expected to contribute positively toward Christchurch's urban form – an important consideration in the regeneration and urban development contexts. Planning decisions have long 'lock in periods' that are difficult to reverse and rectify making it important to deliver regeneration and urban development in a way that contributes to the four well-beings. The assessment points to the importance of the residential market in supporting overall economic activity and the community's economic wellbeing, economic considerations, as well as the link to regeneration and urban development.

Importantly the report notes that these effects are not 'new' to the economy because the growth has arguably been transferred from other potential development areas. However the Report goes on to say: "Nevertheless, when viewed in the light of the potential timing issues (i.e. that enabling development in Cranford area is likely to progress sooner than some of the other development areas), then it is obvious that achieving these effects sooner is more preferable than delaying the point when they realise. Capturing the effects, including the increased retail productivity (through

[47] Market Economics (March 2017): Cranford Regeneration Plan –high level economics assessment.

[48] Ibid Page 13

intensification in the retail catchments), will support the regeneration and urban development drive'[49].

Leaving the land zoned as rural, i.e. status quo with grazing and some market gardening, is not an effective or efficient option for achieving any form of urban regeneration e.g. in contributing to locational choice in the supply of housing in Christchurch. However some of the land outside of the proposed designated areas is not suitable for residential development in the short term, due to incomplete geotechnical investigations, on-going negotiations with landowners over land acquisition or because landowners have no desire to change their current rural land use. This means some of the land will need to be left as rural in the short term at least.

The evidence available to the Council suggests therefore that retaining the potential residential land as rural is not the most appropriate way of achieving the purpose of the Act. Rezoning part of the draft Plan area for urban purposes is the only option that is consistent with the overall policy direction of the CRPS to promote urban consolidation.

The evidence also suggests that there will be downstream positive effects for other areas of Christchurch including the Central City. These indirect effects are difficult to quantify and their existence is based on the assumption that the Cranford area's location relatively close to the Central City compared to other potential areas will lead to some additional expenditure for that area.

9.2 Decision 2: What is the most appropriate urban land use option

Three urban land use options have been evaluated for the future use of the areas outside of the Cranford Basin stormwater management area: industrial, commercial (retail and offices) and residential. The evaluation has assumed that for each option there would be a 'predominant use' of site i.e. would occupy at least two thirds of the entire area. It has been further assumed that an even mix of the three alternative uses is not a likely scenario due to the small size of the site relative to other urban expansion areas around the city, particularly the South-West and Belfast.

9.2.1 Industrial and commercial land use

Property Economics[50] were engaged to provide a high level synopsis of the potential for part of the draft Plan area to be rezoned and developed for commercial and / or industrial activities from a market perspective, and within the context of the RMA. Specific consideration was given to the potential for activity to generate adverse distribution effects (for commercial activity), and the efficient use of the land resource (for industrial activity) in the context of growth and recovery of the city post-earthquakes.

In general, and at a high level, there were three core sectors/activity types given consideration in this overview to determine land use efficiencies of industrial and commercial activity in the context of the potential rezoning of the draft Plan area from Rural to Urban. These were:

[49] Ibid Page 12.

[50] Property Economics (2015?): Cranford Basin – Commercial Potential Overview.

a. Retail

The net additional retail demand that would be generated from development in the draft Plan area is not considered significant in itself. For the most part, existing centres in the network would more efficiently meet this demand i.e. the Papanui/Northlands KAC with associated convenience shops on Main North Road. The most appropriate retail (and office) activity, and opportunity for development in the draft Plan area, is considered to be a relatively small convenience commercial offer (retail and commercial services), i.e. a centre designed to primarily meet the frequently required convenience needs of its core localised market. Such a centre would be small in scale e.g. approximately 1,000m^2 GFA in size. This equates to a net commercial land requirement of 0.2-0.3ha, excluding land for any community facilities, urban parks, transport interchange, etc. if these are considered appropriate. Note that the 1000m^2 includes provision for convenience commercial and professional service activities (e.g. doctors, physio). From a trading perspective, a centre of this type would be best situated on a main road through the area such as Cranford Street or on a proposed new link road through to Winters Road. This would enable a better opportunity to 'tap' into the drive-by market and increase the economic viability of the centre.

b. Offices

Stand-alone commercial office activity (or an office park) is not considered efficient nor appropriate in terms of the 'centres based 'approach in the District Plan. Such development would represent increased inefficiency in the market and would likely result in increased community costs that are unlikely to be outweighed by community benefits particularly in the context of the Central City recovery.

c. Industrial

Previous economic analysis and future industrial modelling undertaken indicates that there is currently in excess of 1,000 ha of land available for industrial activities in the City, while additional industrial land demand to 2031 based on projected industrial growth may be in the order of 370ha[51]. At the city wide level, there is ample vacant capacity of industrial zoned land (both existing and proposed new greenfield land as identified within the LURP within the city) to accommodate all of Christchurch's foreseeable industrial demand well into the future.

In relation to heavy industrial activity, there is sufficient land provision in Christchurch to satisfy such demand without requiring additional land in the draft Plan area. However, in regard to light industry and trade based activity, an extension of the existing Placemakers trade node could have merit, and could complement the development of residential activity if managed appropriately. This is likely to generate economic efficiencies in the network and a more effective and balanced city wide provision.

9.2.2 Evaluation

Five criteria have been used to evaluate the three urban options of industrial, commercial and residential: housing recovery, regeneration, infrastructure capacity, market 'acceptability' and integration with the surrounding environment (amenity effects and effects on community coherence). These criteria reflect the strategic directions contained in the LURP, CRPS, and the operative Strategic Directions of the Christchurch District Plan.

[51] Cranford basin – Christchurch Commercial Potential Overview Property Economics March 2015 p8

Predominant Use	Contribution to Housing Recovery	Contribution to Regeneration	Infrastructure Capacity	Market Acceptance	Amenity/ Community coherence
Industrial	Could make Highsted and Highfields greenfield areas more attractive by providing employment in proximity, and generate local employment opportunities.	Would attract jobs and investment to the city if development was new investment, particularly export or technology orientated. Well located for access to strategic transport network.	Would have only a minor impact on sewer if 'dry' industry. Wet industry could not be accommodated. Roading access would need to be from Cranford Street on amenity grounds. Would require first flush stormwater treatment.	Already a significant pool of vacant industrially zoned land, so could be slow take-up.	Residential zones on most boundaries. Would likely detract from the amenity and recreational values of the stormwater facility. Likely to Increase heavy vehicles on road network in the area.
Commercial	No direct impact, other than employment opportunities.	Assuming no distribution effects, would create local employment opportunities.	Depending on location and the commercial mix, there is likely to be moderate to significant pressure on the local road network .There would need to be careful integration of accesses with traffic flows,	Essentially within catchment of Papanui KAC. Distribution effects on other local convenience shopping strips.	
Residential	Add up to 360 houses to housing stock in short term Likely to be mostly above medium house price due to convenient location and wetland/open space outlook, and	Could be a point of difference that provides a catalyst or model for future housing in similar environments around the City e.g. Highfields, Henderson's Basin. Likely to act as a catalyst for renewal	Need on-site first flush treatment of stormwater Likely adverse traffic impact until NAE and intersection improvements built. Gradual	There is theoretically sufficient vacant land, but Highfield land is unlikely to be developed in the near future. Would be a popular location for living, as relatively close	Least impact on/most compatible with surrounding residential environment.

Predominant Use	Contribution to Housing Recovery	Contribution to Regeneration	Infrastructure Capacity	Market Acceptance	Amenity/ Community coherence
	higher development costs. Close to Papanui/Northlands KAC and community facilities. Could attract both family and non-family households due to convenience of location.	of older housing stock between Basin and the Papanui KAC.	increases in traffic volumes on surrounding road network. Can be well integrated with local transport network, cycle paths etc.	to CBD and Papanui/ Northlands KAC.	

Summary

Based on the evaluation above, and previous assessments in other sections of this document, the overall conclusion is that all of the draft Plan area should be recognised as being inside the Projected Infrastructure Boundary in the CRPS, and some of the land should be zoned for residential in the Christchurch District Plan, as the preferred urban land use.

9.3 Decision 3: Scale and Intensity of Residential Development

The policy framework in the LURP and CRPS seek urban consolidation achieved through three main policy directives: an 'urban limit'; identification of existing urban zoned areas for intensification with minimum densities of 30 households per net ha; and requiring greenfield priority areas to meet a minimum density of 15 hh/net ha. The draft Plan area, in statutory terms, is a potential greenfield priority area. However, in terms of the City's overall urban form it can also be seen as an infill/consolidation area. There is the potential opportunity for intensification over and above standard greenfield densities to residential medium densities in Area A, where it is close to a KAC and public transport routes. This would complement the residential medium density area to the southeast of Main North Road, including the additional residential medium density area recently added around Apollo and Meadow Streets. The traffic assessment also favours intensified development as it takes greater advantage of a convenient and accessible location; but even after the Northern Arterial is in place, increased traffic could result in local amenity and possible safety issues.

However, there are several matters arising from the technical reports that suggest a lower density residential development would be more appropriate in Area A. There are a number of springs and seeps in Area A. Ground conditions need further detailed investigation at subdivision stage and it may be that particularly in the south-east of Area A, ground conditions are not suitable for higher densities. The geotechnical and soils analysis suggests that high loadings will squeeze out water, causing subsidence and potentially dewatering. There is anecdotal evidence that the ground is still moving in the area, and there could be some pockets of land that are not suitable for further housing intensification.

All of these constraints, recommended densities and integrated development can be included on an Outline Development Plan (ODP). If Area A is identified as a greenfield priority area, an ODP will be

required. A geo-hydrological management plan is recommended for Area A (as per discussion in Section 5) and would apply to the entire ODP area prior to any subdivision being applied for. Its purpose would be to demonstrate how subdivision and the construction of buildings will be managed to maintain spring and seepage flows, and maintain the quality, levels and flows of groundwater.

9.3.1 Residential land use options and evaluation

Figure 3 in Section 5 divided the draft Plan area into four spatial areas for consideration of urban residential development. Three areas are described below (Area D is the Cranford Basin stormwater management area):

Area A

This area compromises approximately 33ha and can be distinguished by the following:

- The area was the subject of submissions to the Replacement CDP requesting rezoning to residential. All landowners in the area, which number nine, support a rezoning.
- There is sufficient technical data to support a rezoning.

Area B

This area compromises approximately 4.7ha and can be distinguished by the following

- The area was the subject of submissions to the CDP requesting rezoning to residential. The two landowners support a rezoning.
- There is sufficient technical data to support a residential rezoning.

Area C

This area compromises approximately 15 ha and can be distinguished by the following

- The area was not the subject of any submissions to the CDP. Consultation with landowners indicate that the Rural Urban Fringe zoning is appropriate in the short term and that in the longer term a residential rezoning may be appropriate.
- There is insufficient technical data at present to support a residential rezoning.
- Property negotiations have yet to be completed (as at March 2017) with some land owners and therefore final none boundaries cannot be delineated.

Based on the constraints of the existing environment of the draft Plan area and the varying degrees of appropriateness of urban residential development, the following land use options have been considered for Areas A and B:

. *Area A – East Papanui (33ha)*

	Option 1	Option 2	Option 3	Option 4
Option description	**Residential Large Lot Zone or Peat constraint overlay** This option involves re-zoning to Residential	**Suburban density residential (Residential Suburban Zone).**This option involves sites of a minimum 450m^2 for RS,	**Mix of low to higher densities (Residential New Neighbourhood Zone)**	**Residential Medium Density Zone** The option would apply RMD minimum site sizes of 200m^2 to those areas

	Option 1	Option 2	Option 3	Option 4
	Large Lot Zone. This is a form of very low density residential development with lots sizes from 2000m^2	although in practice average site sizes are likely to be larger than this.	This option would provide for a mix of medium density and lower density development.	where ground conditions are suitable for this intensity of development.
Potential yield	200-250 houses	At 15hh/ha the development would yield between400-450 houses	Yields could be higher than for RS although there is no obligation to go beyond 15hh/ha. Approximately 400-450 houses.	Could achieve theoretical yield of around 600 houses but not all land can be fully used for this type of development.
Responds to the key considerations	Contributes to urban consolidation but will not achieve the degree of intensification (and associated transport benefits) sought in the vicinity of KACs. Is the most effective option for reducing risks of subsidence and other unforeseen changes to soil and water conditions. This option will moderate effects on sewerage overflows and impacts on the road network. It provides a typology of housing types similar to the opposite side of Grassmere Street and the end of Paparoa Street zoned Living 1B under the previous City Plan. Maintains a less modified outlook and higher levels of amenity for adjoining residents/ property owners. Private benefits for existing land owners -	Achieves consolidation and to some extent intensification objectives of the Christchurch District Plan Lower density maintains more open and landscaped environment, although this zone does allow for different housing typologies. *Costs* Private costs for residents/ property owners adjoining the area who lose a rural outlook and level of amenity that currently exists on the rural-urban fringe compared to very low density options. Costs borne by developers/ landowners to develop land which has constraints in relation to land conditions, wastewater and access.	This option offers more flexibility in lot size and housing type e.g. new neighbourhood provisions promote higher density housing which could be sited in a manner complementary to the scale and character of the wider area, the infrastructure capacity or the ground conditions noted on site. *Benefits* Supports a comprehensive approach to the development of greenfield areas that potentially provides a greater range of housing typologies and better amenity outcome. Housing densities and land modification can be tailored to the site specific environmental conditions.	Public benefits - makes the most efficient use of the land resource of all the residential options in terms of use of space. Potentially higher gross returns from increased yields, which in turn will increase development feasibility. Further water supply pumping required as part of subdivision. Long term transport efficiencies through opportunities to reduce private vehicle use and increase public transport patronage. Likely to provide the most direct and indirect regeneration benefits of all the options. *Costs* Current land owners could resist RMD because of perceived amenity effects. Would delay development. Higher private and public costs associated with land

	Option 1	Option 2	Option 3	Option 4
	these types of sections have been historically sought after in this area. *Costs* Does not achieve consolidation objectives as well as other options. Opportunity cost to landowners/ developers due to lost opportunities for further development of their properties. Need for strengthening of building platforms and ensuring geo-hydrological conditions are not adversely affected is likely to increase development costs, while resulting in a lesser return for developers.		*Costs* Current land owners could resist RMD elements because of perceived amenity effects. Would delay development. Requires more comprehensive planning which requires additional consenting. More pronounced change to the landscape.	remediation and infrastructure upgrades including roading (should be able to be recovered from development contributions). Significant risk from effects of intensive development affecting surrounding properties and traffic generation.
Achieves the Regeneration Plan vision and goals	Unlikely to have significant regeneration benefits for surrounding area, and hard to justify in terms of 'regeneration'.	Achieves some urban consolidation but apart from the CRPS boundary issues, this type of development could proceed in due course without a Regeneration Plan. Does not promote a full range of housing types, sizes and densities nor a comprehensive and innovative approach to development. Likely to be targeted by less experienced developers on a piecemeal basis.	Closest match to Regeneration Plan vision and goals. Most likely to promote environmentally sensitive and sustainable development.	Does not provide for a full range of housing types, sizes and densities. Likely that some of the land cannot be developed at RMD densities and therefore some areas of the basin could remain undeveloped.in the long term, reducing overall benefits to the community.

	Option 1	Option 2	Option 3	Option 4
Amendment to CRPS	Requires amendment to PIB identified on Map A.	Requires amendment to PIB identified on Map A.	Requires amendment to PIB identified on Map A. Best achieves Policy 6.3.5 Integration of land use and infrastructure. Also likely to better achieve good urban design and meet Policy 6.3.2 Development Form and Design.	Requires amendment to PIB identified on Map A. Risk of not achieving Policy 6.3.5 or optimal integration of land use and infrastructure e.g. likely pinch points in roading and service provision.
Amendment to CDP	Requires rezoning from rural.	Requires rezoning from rural. CDP does not automatically require an ODP for new RS and RSDT areas, so an ODP would need to be provided. However this would not backed up with a comprehensive subdivision and land use consent process, and development could be fragmented unless a bespoke rule inserted.	Requires rezoning from rural. Process of comprehensive subdivision and land use consent has already been trialled in other areas.	Requires rezoning from rural. CDP does not automatically require an ODP for new RMD areas, so an ODP would need to be provided. However this would not backed up with a comprehensive subdivision and land use consent process, and development could be fragmented.

Area B – Cranford Street/Croziers Road (4.7ha)

	Option 1	Option 2	Option 3
Option description	**Residential Large Lot Zone** This option involves rezoning Area B to Residential Large Lot Zone. This is a form of very low density residential development with lots sizes from 2000m^2	**Suburban density residential (Residential Suburban Zone or Density Transition Zone** This option involves sites of a minimum 450m2 for RS, and 330 m2 for RSDT although in practice average site sizes are likely to be larger than this.	**Mix of low to higher densities (Residential New Neighbourhood Zone)** This option would provide for a mix of medium density and lower density development.

	Option 1	Option 2	Option 3
Potential yield	15-20 households depending on roading required, and effect of 10m setback from watercourse.	Theoretically around 45 households for RS but more likely 40 or less to allow for retention of two current houses and first flush retention. For RSDT 50-60 potential households but more likely to be around 50 given site constraints and the need for first flush treatment.	35-50 households
Responds to the key considerations	Available information about ground conditions does not indicate the need for such a low density of development. However as with the other options, access from Cranford St will need careful design and restrictions on number of trips using it., as will subdivision earthworks.	Development requirements under the Regeneration Plan can be applied to this land as appropriate e.g. the overall geo-hydrological plan to be prepared for the area before subdivision will need to include this land. Part of the land is in a Flood Management Area and Flood Ponding Management Area so raised floor levels are likely to be required under CDP rules, and filling of the Ponding Management area would need to be avoided.	It is not generally considered necessary for there to be a detailed ODP for areas of this size, or for there to be a range of densities provided for. Could be part of the ODP for entire regeneration plan area. Would need careful design to create adequate openness around the dwellings and integrate into existing and future environment.
Achieves the Regeneration Plan vision and goals	Does not make a particular contribution to regeneration.	As with all housing options including for Area A would need to incorporate some lower cost housing option, and sustainable housing element (Homestar etc.). Will provide support for local shops.	Would need to incorporate some lower cost housing option, and sustainable housing elements (Homestar etc.). Will provide support for local shops. Provides opportunity for range of housing typologies.
Amendment to CRPS	Would require amendment to PIB.	Would require amendment to PIB. Does not provide for a full range of densities but Policy 6.3.5 Integration between land use and infrastructure, may be able to be met.	Would require amendment to PIB. Risk of not achieving Policy 6.3.2 Development Form and Design, and Policy 6.3.5.
Amendment to CDP	Would require rezoning from rural.	Would require rezoning from rural. Normal subdivision processes and DP development controls for RS and RSDT	Would require rezoning from rural. Development would need to be carefully undertaken due to servicing

	Option 1	Option 2	Option 3
		zones are likely to be adequate to ensure an integrated development.	and access issues for a larger number of households.

There are private and public benefits and costs common to all options. These include

- Benefits for the economic and social well-being of landowners due to increased land values and opportunities for further development of their properties.
- Public benefits accrue through a more efficient utilisation of the urban land resource, and through potential transport savings from being close to key services.
- Avoids the need for the costs and delays resulting from private plan change applications to rezone
- Additional requirements proposed in regard to geo-hydrology should assist in achieving sensitive and least impact development.

9.3.2 Preferred residential land use options

i. Preferred Option – Area A (Grassmere Block)

The Residential New Neighbourhood Zone (RNN), including RNN Constrained, is the preferred zone for Area A because of the flexibility it provides to tailor provisions to the constraints identified for Area A. This preferred option:

a. provides the closest match to the objectives of the Outline;

b. enables densities to be managed to maximise the opportunities of developing in this location, while minimising or avoiding adverse effects on the natural conditions of the land and on adjoining neighbourhoods;

c. enables developers (using comprehensive development approaches through an ODP) to manage development in a manner that obtains a positive return on investment; and

d. is capable of providing a development capacity that makes a significant contribution to meeting housing needs in an area where demand is likely to be high compared to other potential intensification areas.

ii. Preferred Option Area B

The Residential New Neighbourhood Zone is the preferred zone for Area B because it **c**omplements the range of housing typologies in Area A and enables the potential for a greater range of housing typologies that could be provided.

However, a cap on the number should be considered on amenity grounds, both for future residents and adjoining neighbours, and on traffic grounds in view of the limited access to the site. There is no upper limit for RNN so the 15hh/ha minimum for RNN is an appropriate limit. This equates to approximately 60 houses. There is also a need to limit the number of vehicles entering and leaving onto Cranford Street. Evidence presented at the District Plan Hearings by the traffic experts ranged from no access to providing for up to 8-10 houses. The Planning

expert chose the middle ground because in his opinion it was the most appropriate means to achieve the purpose of the RMA, and this did not appear to be contested by the landowners.

iii. Preferred Option - Remaining Land (Areas C and D)

The remaining land will retain its existing Rural Urban Fringe Zone until such time the Council is in a position to rezone it to a more appropriate zone.

9.3.3 Scale of Development

There are likely to be differing effects from different parts of Area A, particularly relating to when or if the Top 10 Holiday Park is developed. That area has future potential for around 100 houses at 15hh/ha. Given it has three potential access points (Cranford St Meadow St and the link road) it seems likely that the effects of this part of the development area on the local network to the south will be less, and long term.

On balance, taking into account the minimum density requirements of the District Plan, the results of traffic modelling and geotechnical constraints around 320 households could be allocated to Area A immediately, and allowance made for a further 105 households for the Top 10 site in the longer term.

The main limiting factors for Area B are access (for the Case property in particular), the presence of flood management and ponding areas on the Case land (the effects of which could be mitigated), and limited amount of area. The need for an open and sensitive interface with the Cranford Basin stormwater management area is another consideration. On balance it is concluded that an upper limit of 60 household units should be imposed, with no more than six accessed from Cranford Street.

9.3.4 Quality of development

Two fundamental goals of this Plan concern the diversity, quality and sustainability of housing and these must be achieved In order to meet the purpose of the Greater Christchurch Regeneration Act

Goal 1 of this is *Residential development, in appropriate areas, that provides for a choice of housing types, sizes and densities to provide for a range of housing needs and help meet the household growth targets for Greater Christchurch.*

Goal 2 Plan is '*Residential development that promotes sustainability through innovative architecture, low impact urban design and integration with adjoining residential areas'.*

The first goal is to be achieved through the RNN Zone and associated rules, Outline Development Plan (ODP) and guidance. The ODP is particularly important because it allocates the different densities according to the nature and constraints of the ground conditions.

The second goal will achieved through requiring a comprehensive approach to subdivision and land use that ensures integration both within the new housing area, and with the surrounding housing and proposed wetland area. Piecemeal development is not an option.

The sustainability and innovative architecture is to be provided through promoting 'exemplar' qualities including Lifemark and Homestar design features. These will be implemented through the land use and subdivision rules in a manner that provides integration between the two.

10 Proposed Changes to the Christchurch District Plan and the Canterbury Regional Policy Statement

To facilitate the preferred land use options outlined in Section 9, changes are required to the CRPS and CDP. These are explained below.

10.1 Canterbury Regional Policy Statement

It is proposed to amend Map A Greenfield Priority Areas on page 64 of the CRPS as follows:

a. Remove the Projected Infrastructure Boundary from the draft Plan area

b. Show Areas A and B (Refer to figure 3 above) of the draft Plan area as "Greenfield Priority Area –Residential".

c. Show Areas, C and D of the draft Plan area as "Existing Urban Area".

d. Amend the Legend with the following (strikethrough):

Existing Urban Area ~~– Pre 2011~~

Explanation

The changes proposed result in the removal of the PIB on Map A Greenfield Priority Areas from around the draft Plan area. This potentially enables urban activities to occur and be considered through the Christchurch District Plan. This will mean that Policy 6.3.1(4) will not apply, which limits any new urban activities to those areas identified as existing urban areas or greenfield priority areas.

Areas A and B are to be shown as a "Greenfield Priority Area –Residential" which requires development on the site to comply with the requirements of Policy 6.3.3 and the preparation of an Outline Development Plan.

Area C is to be shown as "Existing Urban Area". This area is deemed suitable in policy terms subject to further geotechnical assessment for urban development although strictly they are not existing and accordingly it is proposed to remove the "Pre-2011" from the Legend.

The Cranford Basin stormwater management area (Area D) will also be shown as existing urban area. This is similar to the existing Travis Wetland in eastern Christchurch which is shown as existing urban within the PIB. Given the existing designation and its essential stormwater management function for the adjoining urban area the site will not be developed for urban purposes.

10.2 Christchurch District Plan

It is proposed to amend the Christchurch District Plan as follows:

a. Amend Planning Map 24 by rezoning Area A from Rural Urban Fringe (RuUF) to Residential New Neighbourhood (RNN).

b. Amend Planning Map 25 by rezoning Area B from Rural Urban Fringe (RuUF) to Residential New Neighbourhood.

c. Insert a new provision under Rule 8.3.2.2 Restricted discretionary activities

d. Insert the East Papanui Outline Development Plan and narrative into Chapter 8 as Appendix 8.6.31

Explanation

Area A is proposed to be rezoned to RNN which will enable an ODP to be implemented over the site. Given the large area and the number of owners the zoning and ODP process are considered essential in order to achieve integrated development of Area A. A number of rules are proposed to address specific issues on site including:

- Geotechnical
- Traffic
- Services

Area B is proposed to be rezoned to Residential New Neighbourhood Zone given its small area and the indicative subdivision plans that have been submitted for development of the site to enable a greater range of housingtypologies.

Area C is proposed to remain Rural Urban Fringe with the possibility the site can be rezoned to residential at a later date when further technical information is available and/or rezoning is considered desirable by the landowners.

Area D is proposed to also remain Rural Urban Fringe. The designation provides certainty for the works and facilities required for the Cranford Basin stormwater management area. Rezoning of the area to an appropriate open space zone may be considered in future.

11 Overall Assessment of Proposal

11.1 Is the proposed development in the draft Plan area regeneration?

11.1.1 Regeneration: What is it?

One of the key issues considered by the proponent, and discussed throughout this document, is whether or not Ministerial approval of a draft Cranford Regeneration Plan would be in accordance with one or more of the 'regeneration' purposes of the Act.

The Act defines 'regeneration' as (Section 3(2)):

(a) rebuilding, in response to the Canterbury earthquakes or otherwise, including—

(i) extending, repairing, improving, subdividing, or converting land:

(ii) extending, repairing, improving, converting, or removing infrastructure, buildings, and other property:

(b) improving the environmental, economic, social, and cultural well-being, and the resilience, of communities through—

(i) urban renewal and development:

(ii) restoration and enhancement (including residual recovery activity)

The related definition of "urban renewal" is (section 3(2)):

urban renewal means the revitalisation or improvement of an urban area, and includes—

(a) rebuilding:

(b) the provision and enhancement of community facilities and public open space.

Traditional understandings of urban regeneration in planning disciplines focuses on approaches that encompass improvements to the areas' physical environments, their economic bases, and the social and economic conditions of their residents. It is often undertaken with direct public funding on former contaminated industrial 'brownfield' sites, and is usually associated with inner city areas blighted by unemployment, poor housing and socially excluded from more prosperous districts. Whilst based on late 20th century paradigms, this view still has validity.

The definition of 'regeneration' in the Act, however, takes a broader approach so as to focus on the context of regeneration of Greater Christchurch following the earthquakes. That approach is consistent with more recent trends in urban policy development which arguably focuses on environmental sustainability and resilience which is more relevant to Christchurch's setting in an environment dominated by water related issues.

Urban regeneration is a way to re-organise and upgrade existing places rather than planning new urbanisation[52]. It contributes towards sustainable resource management through the re-use of land and buildings, as well as reducing demand for peripheral urban growth and facilitating intensification and compactness of existing urban areas – the cornerstone of successive urban development strategies in Christchurch and Greater Christchurch over the past 50 years.

Accordingly, within the context of Greater Christchurch, and Christchurch City in particular, the Council regards urban regeneration as part of sustainable resource management. The purpose of regeneration planning is to promote actions, policies and processes which address often complex technical, spatial and socio-economic issues in an integrated manner including in order to reduce environmental impact, mitigate environmental risk, improve environmental quality of urban systems and promote resilience.

This view of urban regeneration has support in the academic press. For example Roberts sees urban regeneration as

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52 Puppim de Oliveira J.A. and Balaban, O. (2013), Climate-friendly Urban Regeneration: Lessons from Japan. Development & Society: Asia, Climate Change, Urban Development. 2013/08/28. United Nations University. Available at: http://ourworld.unu.edu/en/climate-friendly-urban-regeneration-lessons-from-japan; in Sustainable regeneration in urban areas , URBACT II capitalisation, April 2015 Published by URBACT 5, Rue Pleyel, 93283 Saint Denis, France http://urbact.eu.

'(having) a major role to play in promoting higher environmental standards and better management of resources. Key issues include the promotion of better urban drainage and flood management, the provision of open space and the use of enhanced design in order to mitigate the effects of climate change'[53]*.'*

He goes on to define regeneration as:

'.. comprehensive and integrated vision and action which seeks to resolve urban problems and bring about lasting improvement in the economic, physical, social and environmental condition of an area that has been subject to change, or offers opportunities for improvement''

Such a vision is consistent with the outcomes sought in the draft Cranford Regeneration Plan. Nevertheless the Council needs to be satisfied that a draft Regeneration Plan, in meeting the purpose of the Act, falls within the definition of regeneration, requires an expedited process, and that preparing a regeneration plan is the most appropriate process.

11.1.2 In terms of the Act

a. Regeneration and Renewal - Overview

Development of a Regeneration Plan to enable urban residential development in the draft Plan area will enable **regeneration and development** of residential opportunities, **restoration** of ecological values and **enhancement** of opportunities for passive recreation and community connections. These outcomes will improve the four well-beings of communities. It facilitates the **on-going planning** of Greater Christchurch by helping to implement the urban development strategy contained in the Regional Policy Statement and District Plan. It does this particularly by providing for growth in close proximity to a Key Activity Centre.

Moreover, there is an aspect of **urban renewal** achieved by the proposal. The land within the Cranford area including the land being proposed for housing, has become difficult to profitably use for productive economic activities and, when compared to residential value added, contributes only marginally to the economic and social wellbeing of the Greater Christchurch area[54]. This has become even more so now that much of the land is to be used as part of the urban transport and flood mitigation systems, with the resulting irregular shape of land parcels. The proposed development will lead to the removal of redundant farm buildings and replace them with modern housing units that contributed to post earthquake regeneration.

b. Enabling a focused and expedited regeneration process

A focused and expedited process requires comparison between the use of a regeneration plan and other regeneration planning options and assessment of whether the use of a regeneration plan process is **focused** and **expedited** in comparison to those alternatives. Other processes that have been considered were compared and assessed in Section 8.

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[53] Peter Roberts, The Evolution, Definition, and Purpose of Urban Regeneration in ***Urban Regeneration***,(2nd Edition) Peter Roberts, Hugh Sykes, and Rachel Granger (Eds) Sage 2017.

[54] Market Economics High Level Economic Assessment 2017 Concluding Remarks.

While the Regeneration Plan process will deliver a quicker decision, it may not on its own deliver immediate development. The actual timing of development depends on many factors beyond the Council's control for example market conditions, fragmented land ownership, whether there is developer finance available and land banking.

A number of proposals to address these issues are discussed in the Productivity Commission's report on Using Land for Housing[55]. These generally require central Government action (e.g. establishing Urban Development Authorities, land taxes), but an option for Councils is to use rating powers to discourage land banking.

One option is for the land to revert to I rural zoning if development hasn't occurred by a specified date.Two vexing questions are (in relation to land banking): what is the trigger for Council action – is when a developer fails to lodge a consent by a certain time? Initiate subdivision works? Build houses? The second question is what is the penalty? A revocation of zoning might not be in the interests of the City, particularly in the case of the Cranford area which would not be considered for rezoning for another six to seven years. Because of the possibility of perverse outcomes this approach is not supported. The preferred method is to enter into a Memorandum of understanding with land owners that genuine efforts will be made to expedite the development once the zoning on the residential zoning coming into effect.

c. Facilitating the on-going planning and regeneration of Greater Christchurch

The draft Plan area is well within the Greater Christchurch urban area, and is part of the urban environment. It is in close proximity to the Papanui/Northlands Key Activity Centre, local transport connections and critical social infrastructure such as schools. The residential development, new transport connections, ecological enhancement and passive recreation opportunities enabled by the draft Cranford Regeneration Plan would there assist to revitalise and improve this part of the Greater Christchurch Urban area and enable people to move from their current housing situation into smaller land holdings in the same community.

The Plan would provide for restoration and enhancement that improves the environmental, economic, social and cultural wellbeing of communities by protecting and enhancing taonga including springs which are of value to Tangata whenua. A cultural impact assessment has identified sites which Te Ngāi Tūāhuriri Rūnanga wishes to see protected. These include springs which will be protected and enhanced by returning to a more natural state. There is a greater opportunity to manage effects in an integrated manner if planning for the surrounding land use occurs concurrently with planning for the stormwater basin and northern arterial extension design, in particular the long term vision for the stormwater facility.

Although at 'headline' level residential land supply figures show that Christchurch City has sufficient land to meet medium term needs (to 2028) there are uncertainties over when at least two significant greenfield priority areas (e.g. Highfield and East Belfast) in north Christchurch areas will be developed. While the Council has little influence over the timing of development in the Plan area, some of the landowners of the land subject to the Regeneration Plan have informed the Council that they intend to develop over 100 units upon the Plan having effect. The superior location of this land compared to other alternatives is likely to mean a higher demand for sections.

[55] New Zealand Productivity Commission, see Chapter 12.4 in particular.

More importantly, the land's proximity to a Key Activity Centre, and greenfield nature provides a unique opportunity to create a well-designed medium density development normally only available at the City's edge. Notwithstanding some site development challenges, that site is likely to develop more quickly than other zoned RMD area in and around the Papanui KAC.

In summary the proposal will convert, subdivide and rebuild inefficiently used, isolated and economically unviable former agricultural land around the fringes of parts of Cranford Basin for residential purposes in a manner that is integrated with the proposed multi-purpose stormwater facility and transport projects. Appropriate land use zoning and its subsequent development, which is integrated with the proposed adjacent infrastructure, will result in the urban renewal and development of this area, and improve the environmental, economic, social, and cultural wellbeing of the local community.

d. Enabling community input into decisions on the exercise of powers under section 71 and the development of Regeneration Plans

The provision for community input into the development of a regeneration plan is integral to the Act. The Act provides that community input to the development of the proposed Cranford Regeneration Plan will be provided in the following ways:

- There was public notice of the Outline[56];
- There will be public notice of a draft Cranford Regeneration Plan [57];
- The public notice will invite written comments on the draft Cranford Regeneration Plan [58];
- The Christchurch City Council must make publicly available, at the same time as the public notice of the draft Cranford Regeneration Plan, a concise statement recording the views on the draft Cranford Regeneration Plan of the Canterbury Regional Council, Te Rūnanga o Ngāi Tahu, Regenerate Christchurch, Ōtākaro Limited and the chief executive of the DPMC[59];
- The Christchurch City Council must consider the written comments received and make any changes to the draft Cranford Regeneration Plan that it thinks appropriate as a result of those comments before submitting the final Cranford Regeneration Plan to Regeneration Christchurch for the Minister's approval[60];

[56] Section 31(3) of the Act.

[57] Section 34(1)(a) of the Act.

[58] Section 34(1)(b) of the Act.

[59] Section 34(3) of the Act.

[60] Section 35(1)(a) and (b) of the Act.

- When submitting the final draft Cranford Regeneration Plan to Regenerate Christchurch, the Christchurch City Council will also provide a concise record of the views expressed in the written comments[61];

- When reviewing that draft Cranford Regeneration Plan, Regenerate Christchurch will be considering the views expressed by members of the community in the written comments following the public notice;

- Regenerate Christchurch has discretion to amend the draft Plan, subject to seeking the views on those amendments of Canterbury Regional Council, Te Rūnanga o Ngāi Tahu, Regenerate Christchurch, Ōtākaro Limited and the chief executive of the DPMC and possibly people who have made written comments[62];

- When Regenerate Christchurch submits the draft Cranford Regeneration Plan to the Minister, Regenerate Christchurch will include in its report:

    a) advice on whether the Christchurch City Council has provided any additional opportunity for community input[63],

    b) a copy of the Christchurch City Council's record of the views expressed in the written comments on the notified draft Plan[64],

    c) a record of the views on anyone who Regenerate Christchurch engaged with on amendments to the Plan[65];

    d) advice on how the views referred to in (b) and (c) above have been considered and, if relevant, addressed by the Christchurch City Council or Regenerate Christchurch making changes to the Cranford Regeneration Plan[66];

- When the Minister decides whether to approve, decline or amend the draft Plan, he will be considering all of the material in the Regenerate Christchurch report, including all of that regarding the community input[67]; and will be considering whether the Plan is in the public interest[68];

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[61] Section 35(2)(a) of the Act.

[62] Section 36(2)-(4) of the Act.

[63] Section 37(2)(a) – advice on whether the Plan has been developed in accordance with this Outline.

[64] Section 37(2)(b) of the Act.

[65] Section 37(2)(d) of the Act.

[66] Section 37(2)(e) of the Act.

[67] Section 38(2)(a)(ii) of the Act.

[68] Section 38(2)(e) of the Act.

- If the Minister declines the Cranford Regeneration Plan and the Christchurch City Council decides to modify it, there will be community input through the same channels as those described above for the earlier draft[69].

The statutory requirements described above that enable community input to the draft Cranford Regeneration Plan, and that require consideration of that input, of themselves ensure that the development of the proposed draft Cranford Regeneration Plan enables community input.

Section 34 of the Act does not specify the period that the public notice must provide for written comments on the draft Plan. The Christchurch City Council proposes that this will be a period of 20 working days.

The Council also proposes that the public notice of the draft Plan make clear that there are a range of means by which people can make written comments.

The proponent also notes that opportunities for community input started prior to the development of the Outline.

Accordingly, the development of the draft Cranford Regeneration Plan would achieve the purpose of enabling community input to the development of regeneration plans.

A disadvantage of the Regeneration Plan process however is the absence of any obligation to hold hearings, one of the functions of which are to publically test the rigour and validity of the Plan. However, as described in 2.2 above there have been three public processes under the RMA where development in this area have been considered and evaluated, and as described in the following Section, there is an opportunity for community input during the development of the Regeneration Plan. While it is acknowledged that previous hearings have been held under different legislation, the planning issues remain largely the same.

11.1.3 Recognising the local leadership of Canterbury Regional Council, Christchurch City Council, Regenerate Christchurch, Selwyn District Council, Te Rūnanga o Ngāi Tahu, and Waimakariri District Council and providing them with a role in decision making under this Act

The references in this "purpose" to the Selwyn District Council and to the Waimakariri District Council are not relevant to development of a regeneration plan for the Christchurch District, as those councils are not included on the list of bodies whose views must be sought for under section 29 of the Act for developing an Outline and draft regeneration plan for the Christchurch district.

The Christchurch City Council is the authority with the most direct statutory responsibility for decision making regarding the use of land in the Cranford Basin. The land is in the Christchurch District. Cross-boundary issues do not arise. Under the Resource Management Act, land use planning for the Christchurch District is the role of the Christchurch City Council.

The Christchurch City Council has resolved to seek changes to its district plan and to the Canterbury Regional Policy Statement that enable a change to land use in the Cranford area. By that resolution that Council is showing a desire to advance the regeneration objective of the Act for the Cranford area and for its surrounding communities. Enabling the Christchurch City Council to prepare a draft Cranford Regeneration Plan that addresses land use in that

[69] Section 39(3) of the Act.

area achieves the purpose of recognising the local leadership of the Christchurch City Council in relation to such matters.

The Canterbury Regional Council and Regenerate Christchurch will be engaged in the process throughout the development of the draft Plan. Engagement with those parties began in the third quarter of 2016. The Canterbury Regional Council will be involved in the manner required by the Act as a strategic partner, with its views considered throughout the process. This recognises its leadership and provides it with a role in decision making.

Regenerate Christchurch will be making crucial decisions throughout the development of the draft Cranford Regeneration Plan:

- It commented on a draft of the Outline[70];
- It reviewed the Outline and decided whether to recommend it to the Minister for approval[71];
- It exercising discretion on whether to amend the Outline before recommending it to the Minister[72];
- It exercised the discretion as to whether to decline to recommend the Outline to the Minister[73];
- Review of the draft Cranford Regeneration Plan when presented to it by the Christchurch City Council following written comments[74];
- Exercising discretion over whether to amend the Plan before making a recommendation to the Minister[75]; and
- Reporting to the Minister with recommendations on whether he should approve the draft Cranford Regeneration Plan[76].

Those decision making and recommendation roles in the development of the Outline and the Cranford Regeneration Plan recognise the local leadership of Regenerate Christchurch and provides it with a crucial role in the decision making on the place of land use planning for Cranford Basin in the regeneration of greater Christchurch.

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[70] Section 29(1) of the Act.

[71] Section 30(1) of the Act.

[72] Section 30(3) of the Act.

[73] Section 30(4)(b) of the Act.

[74] Section 36(1) of the Act.

[75] Section 36(3) of the Act.

[76] Section 37 of the Act.

Accordingly, enabling the development of the Cranford Regeneration Plan recognises the local leadership of these organisations and provides them with a role in decision making under the Act.

11.1.4 Conclusion on how the Cranford Regeneration Plan will achieve one or more of the purposes of the Act

The Cranford Regeneration Plan will achieve the overall purpose of supporting the regeneration of greater Christchurch as that term is used in the Act, which is not in a traditional sense of being confined to generating economic development or employment. It will however enable environmental restoration and enhancement, and revitalise and improve the area through promoting a low impact, high quality housing development. It will do so in a focused and expedited manner, compared to the alternatives. Use of the Regeneration Plan facilitates the planning and regeneration of greater Christchurch as it assists the regeneration aim more efficiently and effectively than do the other available methods. Community input will be enabled throughout the process as a result of the Act's requirements. Enabling the development opportunities sought in the Cranford Regeneration Plan recognises the local leadership of the Christchurch City Council for land use planning in the Christchurch District, recognises the regional planning function of the Canterbury Regional Council and provides those councils and Regenerate Christchurch with a crucial role in decision making under the Act.

Development of the Cranford Regeneration Plan thereby achieves five of the purposes of the Act.

11.2 Is this proposal 'Regeneration'?

The proposal falls within several limbs of the Act's definition of regeneration and is consistent with the approach being put forward by Roberts (as mentioned earlier). Section 3(2)(b) of the Act provides one of the two meanings of "regeneration and is about urban renewal and development, or restoration and enhancement, that improves the four well-being's and community resilience.

The long term vision and goals for the draft Plan area are about restoration and enhancement. Redundant agricultural land is being restored to its former function as a natural wetland. The heavily modified drainage system is proposed to be sequentially replaced and enhanced through naturalisation of waterways that will benefit ecosystems and the surrounding community. These works will mostly be undertaken by the Council.

The proposed residential development in Area A and Area B is an integral part of this vision. It will improve social and economic well-being by bringing to the market a diverse range of housing types of various price levels where and when they are needed. This will assist in meeting the Greater Christchurch intensification targets and facilitate the provision of community infrastructure, such as cycle and pedestrian links to amenities such as schools, and access to public open space. For these reasons, the draft Cranford Regeneration Plan meets the definition of regeneration.

The delivery of regeneration outcomes will be enabling development through a zoning change, spatial integration through an outline development plan, and other methods including the Council's capital program, and on-going liaison with developers and land owners.

11.2.1 Assessment of whether the Minister can reasonably consider it necessary to approve the Cranford Regeneration Plan

Section 11(2) is in all material respects the same as the equivalent requirement in section 10(2) of the Canterbury Earthquake Recovery Act 2011.

The Court of Appeal in *Independent Fisheries* considered the application of section 10(2) of the Canterbury Earthquake Recovery Act 2011 to decisions of the Minister, and stated that[77]:

[18] In our view, the meaning of the provision is clear when the focus is on its text and purpose in the context of this Act. In short, two elements are involved:

(a) The Minister must consider the exercise of the power "necessary", that is, it is needed or required in the circumstances, rather than merely desirable or expedient, for the purposes of the Act.

(b) The Minister must consider that to be so "reasonably", when viewed objectively, if necessary by the Court in judicial review proceedings such as these. The Minister must therefore ask and answer the question of necessity for the specific power that he intends to use. This means that where he could achieve the same result in another way, including under another power in the Act, he must take that alternative into account.

The Court of Appeal heard argument as to whether "necessary" should be interpreted to mean "expedient or desirable" at one extreme, or "indispensable, vital, essential" at the other extreme. The Court of Appeal preferred "…*the primary, ordinary meaning of "needed" or "requisite", which in turn is defined as "required by circumstances*"[78].

The Court of Appeal noted that the expression used in this statutory test is not, as is commonly the case, "reasonably necessary". The "reasonably" qualifies "consider", not "necessary". It must be objectively reasonable for the Minister to consider it necessary to use the power[79]:

This will involve the Court being satisfied that the Minister did in fact consider that the exercise of the particular power was necessary to achieve a particular purpose or purposes of the Act at the time the power was exercised, taking into account the nature of the particular decision, its consequences and any alternative powers that may have been available.

The question, then, is whether it can be reasonable for the Minister to consider it necessary to use a regeneration plan for Cranford to achieve one or more of the purposes of the Act taking into account any alternative powers that are available. As described earlier in this report, no other options currently available facilitate and expedite this regeneration process for the Cranford Basin.

The Act enables a streamlined planning process compared to conventional planning processes. In this regard Council is unable to undertake plan changes before 2021 and resource consent processes to facilitate development are highly unlikely to meet the statutory tests for resource consent applications under the Resource Management Act due to the current content of the Canterbury Regional Policy Statement. The use of alternative powers is discussed in Section 8 above.

The PIB and rural zoning were in place while the Stormwater and Northern Arterial Extension issues were resolved. The respective designations have been confirmed and consequently

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[77] *Canterbury Regional Council v Independent Fisheries Limited* [2012] NZCA 601, [2013] 2 NZLR 57 at [18].

[78] Oxford English Dictionary (online edition), definitions of "necessary" and "requisite".

[79] *Independent Fisheries* at [22].

there is not any significant reason why the residual land cannot be considered for redevelopment now rather than later, particularly given historical expectations and land owner support. Use of a Regeneration Plan will enable the changes to the Canterbury Regional Policy Statement and the Christchurch District Plan to be considered at the same time as an integrated process.

Planning restrictions on development of the area for residential development represents an opportunity cost. The existing rural use is compromised by its size, fragmentation, reverse sensitivity effects, area and ground conditions. These collectively make the Projected Infrastructure Boundary and rural zoning an inefficient use of a scarce (land) resource. Development of an area that consolidates the urban form rather than extensions on the periphery (which is currently occurring) represents a better return in terms of infrastructure.

Enabling development now rather than in several years will provide greater choice, particularly in a locality in which proposals on Highfield, East Belfast and Highsted Greenfield Priority Areas are not occurring at the rate anticipated for various financial, servicing and land ownership reasons.

Adequacy of land supply in greater Christchurch is **not** the primary issue for assessment of whether the use of the Cranford Regeneration Plan is objectively necessary to achieve one or more of the purposes of the Act. The definition of "regeneration" and the concept of "urban renewal" does not require that there be a "need" for more houses in order for use of the power to achieve subdivision, development and rebuilding to be reasonably considered necessary. The Act is not a housing supply statute. It is a regeneration statute. Enabling development now offers better opportunity for an integrated development with the improvements to the adjoining stormwater basin area and the northern arterial extension, projects which are to commence shortly. As a result of the assessment above the Council considers that the Minister can reasonably consider it necessary to approve a regeneration plan for the Cranford area so as to achieve one or more of the purposes of the Act.

11.3 In terms of Strategic Planning Policy (more detailed assessment contained in Appendix 3)

The CRPS Chapter 6 contains objectives and policies which, i*nter alia*, are directed towards preventing the outward spread of Christchurch in favour of promoting urban consolidation through infill and intensification[80]. One of the instruments used to achieve the objective is the Projected Infrastructure Boundary as identified on Map A of the Canterbury Regional Policy Statement.

The draft Plan area is not located within the Projected Infrastructure Boundary or identified as an existing urban area. To facilitate urban activities in the draft Plan area amendment to the Canterbury Regional Policy Statement is required to include this area inside the existing urban limit on Map A, and the Rural Urban Fringe zone changed to Residential in the Christchurch District Plan. Within this context, the development being proposed can properly be seen as 'greenfield development'[81]. However, in spatial terms, in the context of Christchurch's urban

[80] Canterbury Regional Policy Statement Objective 6.2.2 and Explanation

[81] Greenfield land is undeveloped land in a city or rural area either used for agriculture, landscape design, or left to evolve naturally. These areas of land are usually agricultural or amenity properties being considered for urban development (Wikipedia)

structure, development of the draft Plan area can also be seen as infill or intensification. Either way, there is no rural part of Christchurch which, if developed, is so compatible with the objectives and policies for urban growth in the CRPS due to:

- Its location being close to a KAC
- Its proximity to the central city relative to the urban edge
- Being completely encircled by existing or planned urban development

There is therefore a unique opportunity to provide a comprehensive development that implements the key objective of the CRPS and assists in meeting UDS intensification targets.

11.4 In terms of Environmental Effects and Outcomes, and effects on infrastructure

This assessment is a summary based on the information contained in Section 5 of this document, and the technical reports attached.

Potential adverse effects

a) Transport – local network

Traffic modelling has identified potential adverse effects of development on the efficiency of the network, particularly the intersections with Main North Road and Cranford Street prior to the opening of the Christchurch Northern Corridor.

Increased traffic volumes will also, over time, affect the amenity of residential areas along certain streets, particularly Shearer Avenue, Grassmere Street and Grants Road. The change in traffic volumes will be gradual over the development period and unlikely to be noticed. However, once a connection is established between Cranford Street and Grassmere Street there could be an immediate noticeable change in traffic volumes along Grants Road and adjoining streets. This increase in traffic volumes could need to be managed through traffic calming measures. The increase in volumes is unlikely to significantly alter the level of service and accompanied by traffic calming measures, supported by Main North Road public transport improvements and completion of the Papanui Parallel Major cycle route, and is unlikely to trigger re-classification of the roads affected.

b) Groundwater and subsoil

The advice from the technical investigations is that geotechnical and hydrogeological conditions are extremely challenging. There is a risk that earthworks, infrastructure and housing could adversely affect the current flows of groundwater and cause new springs. Careful consideration needs to be given to development elevations and how utilities can be constructed and operated effectively in the low lying areas underlain by compressible and liquefaction prone soils with high groundwater. These risks will need to be addressed through the subdivision rules in the District Plan and requirements imposed by the Infrastructure Design Manual.

c) Flooding and stormwater management

Flooding risk is not a significant issue for the draft Plan area except where new springs emerge and the Flood Ponding Area on the Case property (Area B). Some parts of Area A and Area B are however subject to floor level rules. There is a desire by Ngai Tahu to prevent natural spring water from mixing with potentially contaminated spring water. Taken in the context of the hydrogeological conditions

there is a clear need for a comprehensive and integrated planning approach to managing surface and sub-surface water

d) Water supply
Providing water supply mains are installed to connect Grassmere Street, Shearer Street and Cranford Street, there are no water supply issues with the proposed draft Plan area in terms of the current water supply zone.

e) Wastewater Overflows
Installing a smart pressure sewer system, will mean that any proposed development will not lead to an increase in overflows during heavy rain events.

f) Community Infrastructure
The area is well serviced by amenities including community facilities, schools and public transport services. The additional development is not expected to place additional pressure on these but their adequacy should be regularly monitored.

11.5 Risks

There are four main potential risks for enabling urban residential development in the draft Plan area: the risk posed by geotechnical conditions if proper care is not taken during the site development and building stage; risk to Ngai Tahu values if not properly addressed; risks surrounding costs, timing and feasibility of development; and "precedent" type risks associated with the use of the Act.

11.5.1 Geotechnical risks

Investigations have highlighted the challenging nature of this land and the likelihood of ongoing subsidence. Piecemeal subdivision is likely to result in changes in groundwater conditions and the emergence of new springs that are likely to cause adverse effects for third parties. These risks can be managed through a comprehensive approach to stormwater management, springs protection and earthworks; and use of a Regeneration Plan to provide Christchurch District Plan provisions that facilitate and require integrated development.

11.5.2 Ngai Tahu Values

The Council is confident that the draft Regeneration Plan, coupled with the requirements of the Christchurch District Plan and the North East Papanui ODP, will enable the issues raised in the Cultural Impact Assessment to be addressed in a manner that is consistent with the objectives and policies of the CRPS and District Plan. A more detailed assessment is contained in Appendix 4.

However, Ngai Tahu has made it clear that it doesn't want any further stormwater discharges into Horseshoe Lake. Currently there are no other practical options, and although an alternative can be built into the regeneration plan for the Avon/Ötäkaro river corridor, there are no commitments in the LTP or other Council document. However, as part of the Otakaro/Avon River Corridor process and the Global Stormwater Discharge Permit Application Council will investigate options for addressing the discharge of stormwater into Horseshoe lake from the Upper Dudley Creek Diversion.

11.5.3 Costs, feasibility, integration and timing

In the Outline there is an expressed intent to include analysis of timing and integration across multiple landowners.[82] The challenging ground conditions and fragmented land ownership are impediments that need to be overcome if a resilient and integrated development is to be created. Development costs, and therefore housing costs are likely to be at the higher end of the housing market, which could narrow the potential market. High upfront costs and the need for an integrated water management system may require Council support through a cost share scheme. This exposes the Council to unbudgeted financial commitments if subdivision does not proceed expeditiously.

The timing of development will be spread over at least 10 years. The first stage 2017-20 is expected to begin immediately at the south eastern –middle part of Grassmere Street and Case /Crozier block which will deliver around 160 units. The second stage is expected to be the medium density and constrained areas, in the 2023-28 period following the completion of the internal link road, delivering another 220 units. The timing of the final stage, development of the Top 10 Holiday Park site, is not anticipated within the next 10 years unless there is a dramatic downturn in domestic and international visitor numbers.

Consideration should be given to bonds, sunset clauses on development rights, or other measures to incentivise first stage developers to develop quickly. One option is to set a date by when certain development must be committed and if that is not complied with, then the zoning reverts to rural, or some other penalty is triggered. The risk with this approach is that development might be well down the track but hasn't met the required action (eg issues of S224 certificates) and it would be impractical to revert to a rural zone under those circumstances. An alternative could be to request a bond from the landowners, and this money would be used to complete the works that had been agreed. However, there are difficulties in setting the amount for the bond as the works needed to be completed would depend on how far development had proceeded. Another possibility, and one that is most favoured by the Council, and an MOU (Memorandum of Understanding) which doesn't necessarily bind the parties but rather relies on them acting in good faith.

These are mechanisms that will exist outside of the District Plan, for example the Long Term Plan. (See also 11.1.2(b) above for further discussion on this matter.).

11.5.4 "Precedent" type process risk

This risk relates to the potential for other landowners around the City to submit that the development opportunities facilitated by the draft Regeneration Plan should also apply to their land.

A considerable number of submissions were received on the Replacement District Plan including from Cranford landowners requesting that rural land be rezoned residential. The Independent Hearings Panel decided against allowing these submissions on the basis that the land was outside of the Projected Infrastructure Boundary and the rezoning for urban residential would not give effect to the CRPS. Consideration needs to be given to whether the proposed residential/rezoning will lead to landowners on the urban edge to also seek to have their land rezoned.

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[82] Outline for Proposed Cranford Regeneration Plan Page 7.

While some of those submissions on the Replacement District Plan had merit in terms of the RMA, none offer the opportunities for the environmental enhancement, and regeneration offered by the draft Plan area. Refer to the comparative assessment in Appendix 4. The key factors which sets it apart from other areas that were submitted on are:

- Its strategic location relation to a KAC, public transport, strategic road network and social infrastructure.
- It's potential to generate a range of housing types in a comprehensive and integrated manner using sustainable development practices.
- The environmental and community ties between the proposed residential area and construction of the multi-purpose Cranford Basin stormwater management area.

These opportunities were not apparent in any of the other proposals put to the Independent Hearings Panel.

12 Conclusion

The technical analysis contained in this report confirms that the main site specific constraints that have impeded urban development in parts of the draft Plan area can now be lifted, or in the case of geotechnical matters are better understood. The confirmation of the delineation of the Cranford Basin stormwater management area through the designation has determined the potential area where urban residential development can be considered.

The appropriateness of enabling urban residential development at the edges of the Cranford Basin stormwater management area has been investigated and various land use options have been assessed identifying a preferred option. The investigations have led to development of a draft Regeneration Plan, based on sustainable development principles with both short term and long term goals and actions which will underpin current and future land use, and expenditure decisions for both the public and private sectors. The assessments included evaluation of options in terms of the sub regional and district planning frameworks and found that appropriately managed urban residential development will not only implement these frameworks, but will complement the future establishment of a multi-purpose wetland that will promote the social, cultural and environmental well-being of local communities and Christchurch generally. These will have downstream economic benefits for the local community through increased property values, and support for local businesses and social infrastructure.

In order to facilitate urban residential development in parts of the draft Plan area amendments are necessary to the Canterbury Regional Policy Statement and the Christchurch District Plan. The draft Regeneration Plan will also however depend on on-going engagement with the local community and a commitment by both the Council and community groups to the long term vision of the Cranford Basin stormwater management area.

The report has also discussed reasons why enabling urban residential development in parts of the draft Plan area is regeneration and will achieve the purpose of the Act.

Glossary of terms and abbreviations

draft Plan area	All of the land currently zoned Rural Urban Fringe and outside of the current Projected Infrastructure Urban Boundary covered by the draft Regeneration Plan (approx. 125 ha) (Figure 1)
Cranford Basin	The land designated or acquired for the Cranford Basin stormwater management area and facility (approx. 60ha)
Remaining land	All the land between the Cranford Basin and current Projected Infrastructure Boundary, which is potentially available for urban zoning (approx. 55ha)
Council	Christchurch City Council
CRPS	Canterbury Regional Policy Statement
CDP	Christchurch District Plan
ODP	Outline Development Plan
RMD	Residential Medium Density Zone
RNN	Residential New Neighbourhood
UDS	Greater Christchurch Urban Development Strategy
LURP	Land Use Recovery Plan
PIB	Projected Infrastructure Boundary as identified on Map A in the Canterbury Regional Policy Statement

Appendix 1 – Technical documents informing the planning assessment [83]

Technical Reports

- Geotechnical Report on Proposed 12.5-hectare Residential Subdivision, Grants Road, Papanui, Bell Geoconsulting Ltd [BGL] (April 2013)
- Cranford Basin Spring Identification, PDP (September 2013)
- Landscape Ecology Report-Notice of Requirement (Stormwater Purposes) for Cranford Basin, CCC October 2013
- Cranford Basin Geotechnical Desktop Report GHD (February 2015)
- Cranford Basin –Christchurch Commercial potential Overview Property Economics (March 2015)
- Desktop Geotechnical Review 340 Cranford Street, St Albans, Elliot Sinclair and Partners Ltd (April 2015)
- Cranford Basin Proposed Rezoning Transport Assessment, QTP (2 April 2015)
- Cranford Basin Proposed Rezoning-Waste water Report, Opus (May 2015)
- Cranford Basin Rezoning-Initial Review of Economic Effects, Market Economics Ltd (June 2015)
- Geotechnical Report for proposed Plan change ,340 Cranford St and 60 Croziers road, St Albans, Elliot Sinclair and Partners (June 2015)
- Cranford Basin Geotechnical Investigation Report GHD (September 2015)
- Section 32 Report Rural-Cranford Basin, CCC (July 2015)
- Rezoning at Cranford Basin –Noise Aspects, Marshall Day Acoustics (22 August 2016)
- Contamination Assessment – Cranford Basin, Beca (August 2016)
- Cranford Basin Rezoning-Review of Geotechnical, Hydrogeology and Stormwater Evidence, Beca (8 September 2016)
- Cultural Impact Assessment, Mahaanui Kurataiao Ltd (September 2016)
- Freshwater Ecology, EOS Consultants (September 2016)
- Peer Review–Cranford Basin Rezoning Transport Assessment, Beca (September 2016)
- Cranford Basin Rezoning – Preliminary Geotechnical Assessment Beca 22 December 2016
- Spring Identification and Groundwater Management for potential rezoning at the Grassmere Block, Final, prepared for the Christchurch City Council, Beca 22 December 2016.
- Cranford Regeneration Plan Updated Water Supply Assessment OPUS, January 2017
- Cranford Regeneration Plan High Level Economic Assessment, Market Economics March 2017
- Cranford Area. Economic Assessment, Property Economics May 2017
- Cranford Regeneration Plan, Integrated Transport Assessment May 2017

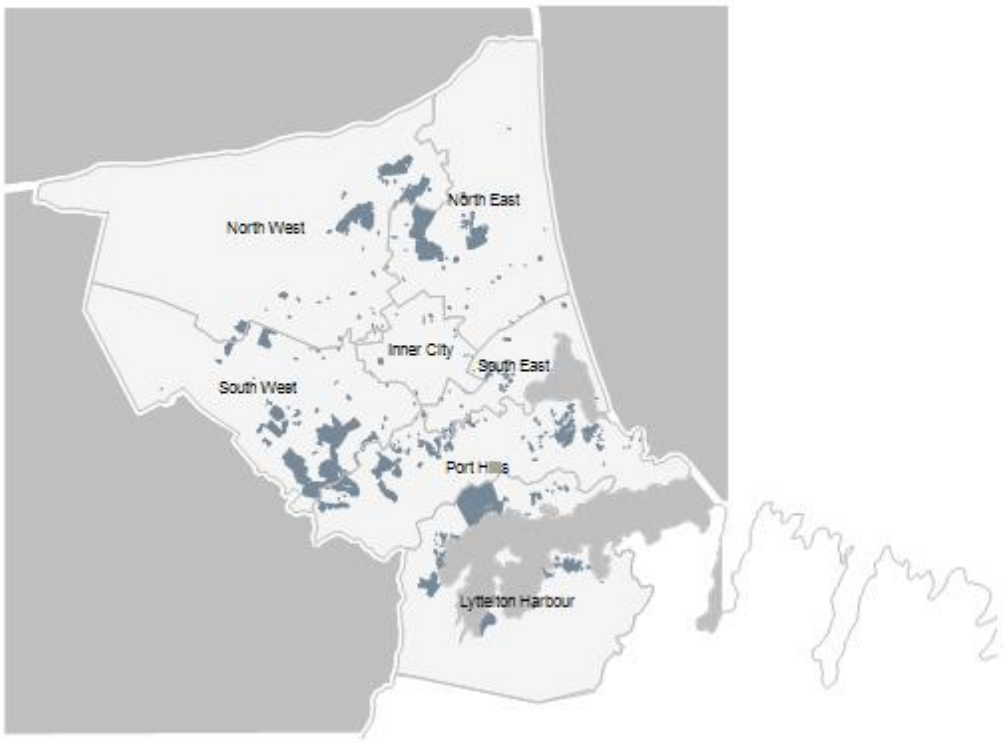
[83] Note: For clarification, references to 'Cranford Basin' in the title of these documents should be interpreted to mean the area proposed for rezoning around the Cranford Basin stormwater management facility unless otherwise stated in the report.

Technical Evidence

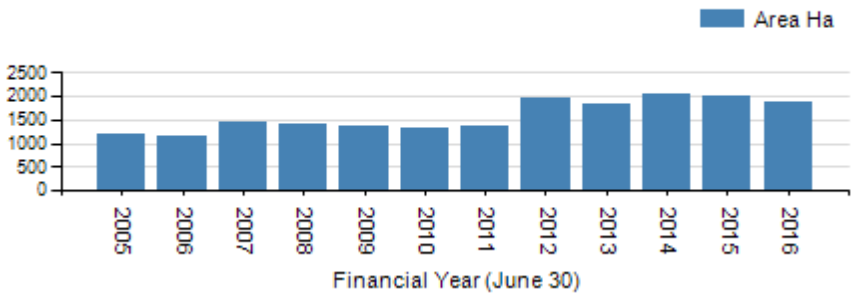
- Technical evidence on geotechnical by Samantha Webb dated 10 December 2015. This evidence related to the Grassmere (submission 3193), Crozier (submission 3268) and Case (submission 3280)
- Technical evidence on hydrogeology by Stephen Douglass dated 10 December 2015 This evidence related to the Grassmere (submission 3193), Crozier (submission 3268) and Case (submission 3280)
- Technical evidence on planning by Ivan Thomson, dated 10 December 2015. This evidence related to the Grassmere (submission 3193), Crozier (submission 3268) and Case (submission 3280)
- Technical evidence on stormwater by Paul Dickson, dated 10 December 2015. This evidence related to the Grassmere (submission 3193), Crozier (submission 3268) and Case (submission 3280)
- Technical evidence on transport by Timothy Wright, 10 December 2015. This evidence related to the Grassmere (submission 3193), Crozier (submission 3268) and Case (submission 3280)
- Technical evidence on water and waste water by Bridget O'Brien, 10 December 2015. This evidence related to the Grassmere (submission 3193), Crozier (submission 3268) and Case (submission 3280).

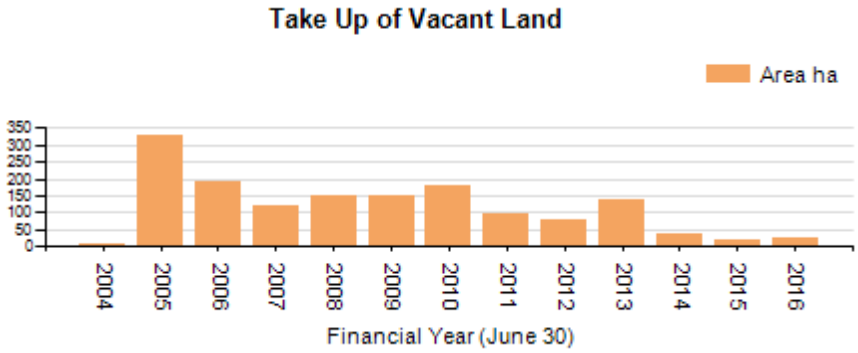
Appendix 2: Vacant land in Christchurch

Metropolitan Area



Vacant Land




Take Up of Vacant Land
Area ha
350
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250
200
150
100
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2004
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2007
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2013
2014
2015
2016
Financial Year (June 30)

Appendix 3: Statutory Policy Assessment

The following table provides an assessment of the proposal against the relevant provisions of the Canterbury Regional Policy Statement and the Christchurch District Plan.

Provision Number	Provision	Assessment
Canterbury Regional Policy Statement		
Chapter 4 – Provision for Ngāi Tahu and their Relationship with Resources (note: the tools below are specifically relevant but not an exhaustive list that have been considered).		
4.3.15	Territorial authorities will include provisions for the relationship between Ngāi Tahu, their culture and traditions, and their ancestral lands, water, sites, wāhi tapu and other taonga within district plans.	A Cultural Impact Assessment (CIA) was undertaken to inform this proposal. The CIA identified concerns with mixing of waters, discovery of artefacts water quality, contamination, discharges, impacts on taonga species, and future consultation at subdivision stage. The draft Plan area has not been identified in a Site of Ngai Tahu Cultural Significance in the Christchurch District Plan, which is the main mechanism used to recognise provision 4.3.15.

Provision Number	Provision	Assessment
4.3.16	Territorial authorities will include methods for the protection of Ngāi Tahu ancestral lands, water, sites, wāhi tapu and other taonga within district plans.	The draft Cranford Regeneration Plan introduces specific District Plan provisions that require the separation of spring water conveyance from stormwater discharges for the draft Plan area in addition to existing provisions that manage earthworks and accidental discovery protocols. This tool is given effect through Chapter 3 of the District Plan – Strategic Directions.
Chapter 6 – Recovery and Rebuilding of Greater Christchurch		
Objective 6.2.1 – Recovery Framework	Recovery, rebuilding and development are enabled within Greater Christchurch through a land use and infrastructure framework that: (1) identifies priority areas for urban development within Greater Christchurch; (2) identifies Key Activity Centres which provide a focus for high quality, and, where appropriate, mixed-use development that incorporates the principles of good urban design; (3) avoids urban development outside of existing urban areas or greenfield priority areas for development, unless expressly provided for in the CRPS; (4) protects outstanding natural features and landscapes including those within the Port Hills from inappropriate subdivision, use and development; (5) protects and enhances indigenous biodiversity and public space; (6) maintains or improves the quantity and quality of water in groundwater aquifers and surface water bodies, and quality of ambient air;	Some parts of this objective, and framework, are delivered through the CRPS and are given effect through the Strategic Directions in the District Plan. The draft Cranford Regeneration Plan specifically gives effect to clauses 5, 6, 8-10, 11 through the ODP and associated rules and assessment matters. The draft Regeneration Plan proposed change to Map A of the CRPS will identify the draft Plan area as being within the urban area. This will ensure that the District Plan changes will then give effect to this objective.

Provision Number	Provision	Assessment
	(7) maintains the character and amenity of rural areas and settlements; (8) protects people from unacceptable risk from natural hazards and the effects of sea-level rise; (9) integrates strategic and other infrastructure and services with land use development; (10) achieves development that does not adversely affect the efficient operation, use, development, appropriate upgrade, and future planning of strategic infrastructure and freight hubs; (11) optimises use of existing infrastructure; and (12) provides for development opportunities on Māori Reserves in Greater Christchurch.	

Provision Number	Provision	Assessment
Objective 6.2.2 – Urban Form and Settlement Pattern	The urban form and settlement pattern in Greater Christchurch is managed to provide sufficient land for rebuilding and recovery needs and set a foundation for future growth, with an urban form that achieves consolidation and intensification of urban areas, and avoids unplanned expansion of urban areas, by: (1) aiming to achieve the following targets for intensification as a proportion of overall growth through the period of recovery: (a) 35% averaged over the period between 2013 and 2016 (b) 45% averaged over the period between 2016 to 2021 (c) 55% averaged over the period between 2022 and 2028; (2) providing higher density living environments including mixed use developments and a greater range of housing types, particularly in and around the Central City, in and around Key Activity Centres, and larger neighbourhood centres, and in greenfield priority areas and brownfield sites; (3) reinforcing the role of the Christchurch central business district within the Greater Christchurch area as identified in the Christchurch Central Recovery Plan; (4) providing for the development of greenfield priority areas on the periphery of Christchurch's urban area, and surrounding towns at a rate and in locations that meet anticipated demand and enables the efficient provision and use of network infrastructure; (5) encouraging sustainable and self-sufficient growth of the towns of Rangiora, Kaiapoi, Woodend, Lincoln, Rolleston and Prebbleton and consolidation of the existing settlement of West Melton; (6) Managing rural residential development outside of existing urban and priority areas; and (7) Providing for development opportunities on Māori Reserves.	Development in the draft Plan area is well placed to give effect to this objective, given it is surrounded by urban land and is not on the periphery of Christchurch per se. Development will include provision of residential medium density development close to the Papanui/Northlands KAC and contribute to the intensification targets, particularly in the 2022-28 period. The proposed rezoning of the draft Plan area from rural to urban consolidates urban form, rather than expands it and whilst it is 'greenfield' in terms of statutory definition, the proposed development is more akin to infill. The inclusion of part of the draft Plan area as a greenfield priority area will provide for demand and will take advantage of existing network infrastructure and planned upgrades/improvements.

Provision Number	Provision	Assessment
Objective 6.2.3 - Sustainability	Recovery and rebuilding is undertaken in Greater Christchurch that: (1) provides for quality living environments incorporating good urban design; (2) retains identified areas of special amenity and historic heritage value; (3) retains values of importance to Tangata Whenua; (4) provides a range of densities and uses; and (5) is healthy, environmentally sustainable, functionally efficient, and prosperous.	As outlined in this document, and in the draft Regeneration Plan, it is considered the proposal will provide for high quality urban design outcomes, with good access to sustainable transport modes, the Papanui/Northlands KAC and public access into the stormwater management area. A Cultural Impact Assessment has been prepared as part of the process and the response to those matters is outlined in section 5 of this document. The proposed urban land use will enable a range of densities and the provisions will encourage environmentally sustainable outcomes. Urban design assessment matters will be included in the ODP to be inserted into the District Plan which will give effect to this objective and associated policies.
Objective 6.2.4 – integration of transport infrastructure and land use	Prioritise the planning of transport infrastructure so that it maximises integration with the priority areas and new settlement patterns and facilitates the movement of people and goods and provision of services in Greater Christchurch, while: (1) managing network congestion; (2) reducing dependency on private motor vehicles; (3) reducing emission of contaminants to air and energy use; (4) promoting the use of active and public transport modes; (5) optimising use of existing capacity within the network; and	As noted within this document, the draft Plan area is well served by sustainable travel modes, with good accessibility to both public transport and major cycle routes. The Papanui/Northlands KAC is accessible on foot from Area A in the draft Plan area. As the proposal is promoting urban consolidation and development near a KAC, and will enable transport choice, this strategic objective is being given effect to.

Provision Number	Provision	Assessment
	(6) enhancing transport safety.	
Policy 6.3.1 – Development within the Greater Christchurch area	In relation to recovery and rebuilding for Greater Christchurch: (1) give effect to the urban form identified in Map A, which identifies the location and extent of urban development that will support recovery, rebuilding and planning for future growth and infrastructure delivery; (2) give effect to the urban form identified in Map A (page 64) by identifying the location and extent of the indicated Key Activity Centres; (3) enable development of existing urban areas and greenfield priority areas, including intensification in appropriate locations, where it supports the recovery of Greater Christchurch; (4) ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS; (5) provide for educational facilities in rural areas in limited circumstances where no other practicable options exist within an urban area; and (6) avoid development that adversely affects the function and viability of, or public investment in, the Central City and Key Activity Centres.	The proposal gives effect to the overall urban form on Map A under clause (1) as it will amend the CRPS to include the draft Plan area within the urban area. Without this change the proposal would not be giving effect to clause (3) and (4). Any urban residential development in the draft Plan area will not affect the function or viability of the Central City and it will contribute positively to the adjacent KAC.
Policy 6.3.2 – Development form and urban design	Business development, residential development (including rural residential development) and the establishment of public space is to give effect to the principles of good urban design below, and those of the NZ Urban Design Protocol 2005, to the extent appropriate to the context: (1) Tūrangawaewae – the sense of place and belonging – recognition and incorporation of the identity of the place, the context and the core elements that comprise the place. Through context and site analysis, the following elements	The ODP, its narrative, and assessment matters give effect to, as appropriate, all the matters listed under Policy 6.3.2. CPTED has not been specifically addressed because that is largely a matter of detailed design. Tūrangawaewae will also be largely a matter for operational initiatives such as street naming and interpretation panels.

Provision Number	Provision	Assessment
	should be used to reflect the appropriateness of the development to its location: landmarks and features, historic heritage, the character and quality of the existing built and natural environment, historic and cultural markers and local stories. (2) Integration – recognition of the need for well integrated places, infrastructure, movement routes and networks, spaces, land uses and the natural and built environment. These elements should be overlaid to provide an appropriate form and pattern of use and development. (3) Connectivity – the provision of efficient and safe high quality, barrier free, multimodal connections within a development, to surrounding areas, and to local facilities and services, with emphasis at a local level placed on walking, cycling and public transport as more sustainable forms of transport. (4) Safety – recognition and incorporation of Crime Prevention Through Urban Design (CPTED) principles in the layout and design of developments, networks and spaces to ensure safe, comfortable and attractive places. (5) Choice and diversity – ensuring developments provide choice and diversity in their layout, built form, land use housing type and density, to adapt to the changing needs and circumstances of the population. (6) Environmentally sustainable design – ensuring that the process of design and development minimises water and resource use, restores ecosystems, safeguards mauri and maximises passive solar gain. (7) Creativity and innovation – supporting opportunities for exemplar approaches to infrastructure and urban form to lift the benchmark in the development of new urban areas in the Christchurch region.	
Policy 6.3.4 – Transport effectiveness	Ensure that an efficient and effective transport network that supports business and residential recovery is restored, protected and enhanced so that it	The strategic transport assessment (discussed in Section 5 of this document) states that the location and form of the

Provision Number	Provision	Assessment
	maintains and improves movement of people and goods around Greater Christchurch by: (1) avoiding development that will overload strategic freight routes; (2) providing patterns of development that optimise use of existing network capacity and ensuring that, where possible, new building projects support increased uptake of active and public transport, and provide opportunities for modal choice; (3) providing opportunities for travel demand management; (4) requiring integrated transport assessment for substantial developments; and (5) improving road user safety.	proposed urban residential development in Areas A and B supports the achievement of clauses (2) (3) and (4) of this policy. The proposal has no direct relationship with the other parts of the policy.
Policy 6.3.5 – Integration of land use and infrastructure	Recovery of Greater Christchurch is to be assisted by the integration of land use development with infrastructure by: (1) Identifying priority areas for development to enable reliable forward planning for infrastructure development and delivery; (2) Ensuring that the nature, timing and sequencing of new development are co-ordinated with the development, funding, implementation and operation of transport and other infrastructure in order to: (a) optimise the efficient and affordable provision of both the development and the infrastructure; (b) maintain or enhance the operational effectiveness, viability and safety of existing and planned infrastructure; (c) protect investment in existing and planned infrastructure; and (d) ensure new development does not occur until provision for appropriate infrastructure is in place;	The Council is giving effect to this policy through expenditure programmes for wastewater, stormwater and transport in the LTP. The proposal takes account of these infrastructure programmes and there is capacity within existing/upgraded infrastructure to cater for development. There is close land use integration within the proposal through timing and urban design with the development and design of the Cranford Basin stormwater management facility.

Provision Number	Provision	Assessment
	(3) Providing that the efficient and effective functioning of infrastructure, including transport corridors, is maintained, and the ability to maintain and upgrade that infrastructure is retained; (4)…..; (5) Managing the effects of land use activities on infrastructure, including avoiding activities that have the potential to limit the efficient and effective, provision, operation, maintenance or upgrade of strategic infrastructure and freight hubs.	
Policy 6.3.7 – Residential Location, Yield and Intensification	In relation to residential development opportunities in Greater Christchurch: (1) Subject to Policy 5.3.4, residential greenfield priority area development shall occur in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028. (2) Intensification in urban areas of Greater Christchurch is to be focused around the Central City, Key Activity Centres and neighbourhood centres commensurate with their scale and function, core public transport routes, mixed-use areas, and on suitable brownfield land. (3) Intensification developments and development in greenfield priority areas shall achieve at least the following residential net densities averaged over the whole of an ODP area (except where subject to an existing operative ODP with specific density provisions): (a) 10 household units per hectare in greenfield areas in Selwyn and Waimakariri District; (b) 15 household units per hectare in greenfield areas in Christchurch City; (4) Intensification development within Christchurch City to achieve an average of: (a) 50 household units per hectare for intensification development within the Central City;	The proposal will give effect to and actively support all of the matters listed under Policy 6.3.7, including clause (1) with the amendment of Map A. The RNN zoning and ODP have been designed to achieve the required densities and be planned comprehensively.

Provision Number	Provision	Assessment
	(b) 30 household units per hectare for intensification development elsewhere. (5) Provision will be made in district plans for comprehensive development across multiple or amalgamated sites.	
Chapter 9 – Ecosystems and Indigenous Biodiversity		
Objective 9.2.2 – Restoration or Enhancement of Ecosystems and Indigenous Biodiversity	Restoration or enhancement of ecosystem functioning and indigenous biodiversity, in appropriate locations, particularly where it can contribute to Canterbury's distinctive natural character and identity and to the social, cultural, environmental and economic well-being of its people and communities.	Will be given effect to through the ODP and the restoration of land and waterbodies subject to the stormwater designation.
Objective 9.2.3 – Protection of Significant Fauna and Indigenous Habitat	Areas of significant indigenous vegetation and significant habitats of indigenous fauna are identified and their values and ecosystem functions protected.	No areas have been identified in the draft Plan area however with improvement to waterbodies and vegetation associated with residential development and the stormwater management area over time it may provide habitat for indigenous fauna.
Policy 9.3.4 – Promote Ecological Enhancement and Protection	To promote the enhancement and restoration of Canterbury's ecosystems and indigenous biodiversity, in appropriate locations, where this will improve the functioning and long term sustainability of these ecosystems.	Will be given effect to through the ODP and the restoration of land subject to the stormwater designation.
Chapter 11 – Natural Hazards		
Objective 11.2.1 – Avoid New Subdivision, Use and Development	New subdivision, use and development of land which increases the risk of natural hazards to people, property and infrastructure is avoided or, where avoidance is not possible, mitigation measures minimise such risks.	Parts of the proposed residential area in Area A are underlain by peat. Whilst there is no evidence of geotechnical aspects which cannot be overcome by engineering for Area A and Area B, it does pose a risk to

Provision Number	Provision	Assessment
of Land that increases Risks Associated with Natural Hazards		development. The consequential effects of the ground conditions on development have been addressed through the ODP and provisions to be introduced through the draft Cranford Regeneration Plan. There are also existing provisions in Chapter 5 (Natural Hazards) and 8 (Subdivision) of the Christchurch District Plan that will apply.
Objective 11.2.2 – Adverse Effects from Hazard Mitigation are Avoided or Mitigated	Adverse effects on people, property, infrastructure and the environment resulting from methods used to manage natural hazards are avoided or, where avoidance is not possible, mitigated.	Technical assessments have made a number of recommendations covering geotechnical, hydrogeology and stormwater that need to be had particular regard to as part of any subdivision consent. These have been included in the ODP provisions to be inserted into the Christchurch District Plan.
Policy 11.3.1 – Avoidance of Inappropriate Development in High Hazard Areas	To avoid new subdivision, use and development (except as provided for in Policy 11.3.4) of land in high hazard areas, unless the subdivision, use or development: (1) is not likely to result in loss of life or serious injuries in the event of a natural hazard occurrence; and (2) is not likely to suffer significant damage or loss in the event of a natural hazard occurrence; and (3) is not likely to require new or upgraded hazard mitigation works to mitigate or avoid the natural hazard; and (4) is not likely to exacerbate the effects of the natural hazard; or (5) is proposed to be located in an area zoned or identified in a district plan or Chapter 6 of the CRPS for urban residential, industrial or commercial use, at	The draft Cranford Regeneration Plan has not identified any areas for urban residential development that occur within high flood hazard management areas. The Cranford Basin stormwater management area aligns with the high flood hazard management area and will not be providing for any urban residential development.

Provision Number	Provision	Assessment
	the date of notification of the CRPS, in which case the effects of the natural hazard must be mitigated.	
Policy 11.3.2 – Avoid Development in Areas Subject to Inundation	In areas not subject to Policy 11.3.1 that are subject to inundation by a 0.5% AEP flood event; any new subdivision, use and development (excluding critical infrastructure) shall be avoided unless there is no increased risk to life, and the subdivision, use or development: (1) is of a type that is not likely to suffer material damage in an inundation event; or (2) is ancillary or incidental to the main development; or (3) meets all of the following criteria: (a) new buildings have an appropriate floor level above the 0.5% AEP design flood level; and (b) hazardous substances will not be inundated during a 0.5% AEP flood event, provided that a higher standard of management of inundation hazard events may be adopted where local catchment conditions warrant (as determined by a cost/benefit assessment.) When determining areas subject to inundation, climate change projections including sea level rise are to be taken into account.	Further investigations are required at the subdivision stage on issue of land drainage for the areas identified for residential development. This should include: consideration of the effects on groundwater levels at the sites when the Cranford Basin is converted to a forested stormwater management area; appropriate levels of service; options for reducing groundwater levels; and the effects of these options. The Christchurch District Plan identifies natural hazard overlays, including flood management areas, and provisions relating to development within those areas, which includes minimum floor levels. Any development within the draft Plan area will need to meet these provisions.
Chapter 17 – Contaminated Land		
Policy 17.3.1 – Identify Potentially Contaminated Land	To seek to identify all land in the region that was historically, or is presently, being used for an activity that has, or could have, resulted in the contamination of that land, and where appropriate, verify the existence and nature of contamination.	If the sites are to be developed for urban residential development, further work will be needed to develop an understanding of the contamination status of the sites, including potential site investigation. The need for the additional work will depend on the nature of any future activities proposed to determine whether consents would be required under the Resource Management National

Provision Number	Provision	Assessment
		Environmental Standard for Assessing and Managing Contaminants in Soils to Protect Human Health Regulations 2011.

Provision Number	Provision	Assessment
Christchurch District Plan (Operative provisions unless otherwise identified)		
Chapter 3 – Strategic Directions		
Objective 3.3.1 – Enabling Recovery and Facilitating the Future Enhancement of the District	The expedited recovery and future enhancement of Christchurch as a dynamic, prosperous and internationally competitive city, in a manner that: a. Meets the community's immediate and longer term needs for housing, economic development, community facilities, infrastructure, transport, and social and cultural wellbeing; and b. Fosters investment certainty; and c. Sustains the important qualities and values of the natural environment.	The areas for urban residential development in the draft Plan area will meet immediate and long term needs in this locality by increasing housing choice and help foster investment certainty making it clear what the long term function of the draft Plan area is, and will maintain and improve the water and ecological systems.
Objective 3.3.3 – Ngāi Tahu Manawhenua	A strong and enduring relationship between the Council and Ngāi Tahu Manawhenua in the recovery and future development of Ōtautahi (Christchurch City) and the greater Christchurch district, so that: a. Ngāi Tahu Manawhenua are able to actively participate in decision-making; and b. Ngāi Tahu Manawhenua's aspirations to actively participate in the revitalisation of Ōtautahi are recognised; and c. Ngāi Tahu Manawhenua's culture and identity are incorporated into, and reflected in, the recovery and development of Ōtautahi; and d. Ngāi Tahu Manawhenua's historic and contemporary connections, and cultural and spiritual values, associated with the land, water and other taonga of the district are recognised and provided for; and e. Ngāi Tahu Manawhenua can retain, and where appropriate enhance, access to sites of cultural significance.	Ngāi Tahu Manawhenua is one of the statutory parties to the Regeneration Plan process and have been involved with on-going liaison through Te Ngäi Tüähuriri Rünanga and Maahanui Kurataiao Limited. A Cultural Impact Assessment has been prepared which raised the specific issues listed in Section 5.6 above. The issues that were raised centred in water quality and the potential threats from wastewater discharges, and the mixing of natural spring water contaminated stormwater (Objective 3.3.3 d). Provisions in the subdivision chapter of the District Plan as well as bespoke provisions governing stormwater and waterbodies in the

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	f. Ngāi Tahu Manawhenua are able to exercise kaitiakitanga.	Cranford area address these issues. Wastewater concerns will be addressed through requirements for a smart wastewater system
Objective 3.3.4 – Housing Capacity and Choice	a. For the period 2012 to 2028, an additional 23,700 dwellings are enabled through a combination of residential intensification, brownfield and greenfield development; and b. There is a range of housing opportunities available to meet the diverse and changing population and housing needs of Christchurch residents, including: i. a choice in housing types, densities and locations; and ii. affordable, community and social housing and papakāinga.	Development will include provision of more residential medium density development close to the Papanui/Northlands KAC and contribute to the intensification targets particularly in the 2022-28 period. The residential development in the draft Plan area will provide for a range of housing types and densities, particularly in Area A.
Objective 3.3.6 – Natural Hazards	1. New subdivision, use and development, shall: 1. be avoided in areas where the risks of natural hazards to people, property and infrastructure are assessed as being unacceptable; and 2. otherwise be undertaken in a manner that ensures the risks of natural hazards to people, property and infrastructure are appropriately mitigated; 2. Except that new strategic infrastructure may be located in areas where the risks of natural hazards to people, property and other infrastructure are assessed as being unacceptable, provided that: 1. there is no reasonable alternative; and 2. the strategic infrastructure has been designed to maintain, as far as practicable, its integrity and form during natural hazard events.	The ODP has identified areas where development is unacceptable in terms of the hydrogeological conditions and development avoided.
Objective 3.3.7 – Urban Growth, Form and Design	A well-integrated pattern of development and infrastructure, a consolidated urban form, and a high quality urban environment that: 1. Is attractive to residents, business and visitors; and 2. Has its areas of special character and amenity value identified and their specifically recognised values appropriately managed; and	The draft Cranford Regeneration Plan: - Will require a change to the CRPS to include the draft Plan area within the urban are and identify part as a greenfield priority area;

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	3. Provides for urban activities only: 1. within the existing urban areas; and 2. on greenfield land on the periphery of Christchurch's urban area identified in accordance with the Greenfield Priority Areas in the Canterbury Regional Policy Statement Chapter 6, Map A; and 4. Increases the housing development opportunities in the urban area to meet the intensification targets specified in the Canterbury Regional Policy Statement, Chapter 6, Objective 6.2.2 (1); particularly: 1. in and around the Central City, Key Activity Centres (as identified in the Canterbury Regional Policy Statement), larger neighbourhood centres, and nodes of core public transport routes; and 2. in those parts of Residential Greenfield Priority Areas identified in Map A, Chapter 6 of the Canterbury Regional Policy Statement; and 3. in suitable brownfield areas; and 5. Maintains and enhances the Central City, Key Activity Centres and Neighbourhood Centres as community focal points; and 6. Identifies opportunities for, and supports, the redevelopment of brownfield sites for residential, business or mixed use activities; and 7. Promotes the re-use and re-development of buildings and land; and 8. Improves overall accessibility and connectivity for people, transport (including opportunities for walking, cycling and public transport) and services; and 9. Promotes the safe, efficient and effective provision and use of infrastructure, including the optimisation of the use of existing infrastructure; and 10. Co-ordinates the nature, timing and sequencing of new development with the funding, implementation and operation of necessary transport and other infrastructure.	- Will increase housing development opportunities around a KAC. - Promotes the re-use and redevelopment of land, albeit currently zoned rural. - Will promote the use of public transport and active transport because of its location and proposed ODP - Will make efficient use of existing infrastructure and coordinate development.
Objective 3.3.12 - Infrastructure	1. The social, economic, environmental and cultural benefits of infrastructure, including strategic infrastructure, are recognised and provided for, and its	The proposed residential area can be serviced both with sewer and water supply. Wastewater servicing will need

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	safe, efficient and effective development, upgrade, maintenance and operation is enabled; and 2. Strategic infrastructure, including its role and function, is protected by avoiding adverse effects from incompatible activities, including reverse sensitivity effects, by, amongst other things: 1. avoiding noise sensitive activities within the Lyttelton Port Influences Overlay area; and 2. managing activities to avoid adverse effects on the National Grid, including by identifying a buffer corridor within which sensitive activities will generally not be provided for; and 3. avoiding noise sensitive activities within the 50dBA Ldn noise contour for Christchurch International Airport, except: 1. within an existing residentially zoned urban area; or 2. within a Residential Greenfield Priority Area identified in the Canterbury Regional Policy Statement Chapter 6, Map A; or 3. for permitted activities within the Open Space 3D (Clearwater) Zone of the Christchurch City Plan, or activities authorised by a resource consent granted on or before 6 December 2013; and 4. managing the risk of bird strike to aircraft using Christchurch International Airport; and 3. The adverse effects of infrastructure on the surrounding environment are managed, having regard to the economic benefits and technical and operational needs of infrastructure.	to be through a smart pressure sewer system to hold back wastewater during periods of heavy rainfall. There will be a gradual increase of traffic on the local road network. Funding will need to be set aside for demand management works to mitigate this increase and the natural increase that will occur from existing growth areas
Chapter 5 – Natural Hazards		
Objective 5.1.1 – Natural Hazards	a. New subdivision, use and development (other than new critical or strategic infrastructure to which paragraph b. applies): i. Is to be avoided in areas where the risks from natural hazards to people, property and infrastructure are assessed as being unacceptable; and	Assessments of potential risks from natural hazards have been extensive and peer reviewed. The overall conclusion from these investigations is that, from a geotechnical, seismic and

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	ii. In all other areas, is undertaken in a manner that ensures the risks of natural hazards to people, property and infrastructure are appropriately mitigated. b. New critical or strategic infrastructure may be located in areas where the risks of natural hazards to people, property and infrastructure are otherwise assessed as being unacceptable, but only where: i. there is no reasonable alternative; and ii. the strategic or critical infrastructure has been designed to maintain, as far as practicable, its integrity and form during natural hazard events; and iii. the natural hazard risks to people, property and infrastructure are appropriately mitigated. c. There is increased public awareness of the range and scale of natural hazard events that can affect Christchurch District. d. The repair of earthquake damaged land is facilitated as part of the recovery.	land drainage perspective, there are no areas, apart from the areas to be identified as RNN Constrained on the ODP, where risks from natural hazards to people, property and infrastructure have not been assessed as being unacceptable. However, there needs to be further site specific investigations at the subdivision and building stage to ensure the natural hazard risks to people, property and infrastructure are appropriately mitigated. These will be required as part of any subdivision consent.
Policy 5.2.1.1 – Avoid New Development Where there is Unacceptable Risk	Avoid new subdivision, use and development, including new urban zonings, where the risk from a natural hazard is assessed as being unacceptable.	See assessment of Objective 5.1.1
Policy 5.2.1.2 – Manage Activities to Address Natural Hazard Risks	Manage activities in all areas subject to natural hazards in a manner that is commensurate with the likelihood and consequences of a natural hazard event on life and property.	See assessment of Objective 5.1.1
Policy 5.2.1.4 – No Transferring of Natural Hazard Risk	Ensure that subdivision, use and development (including proposals for hazard mitigation works or hazard removal) do not transfer or create unacceptable natural hazard risk to other people, property, infrastructure or the natural environment.	See assessment of Objective 5.1.1

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Policy 5.2.1.5 – Natural Features Providing Hazard Resilience	Protect natural features which assist in avoiding or reducing the risk of natural hazards, such as natural ponding areas, coastal dunes, wetlands, waterway margins and riparian vegetation from inappropriate subdivision, use and development and where appropriate restore, maintain or enhance the functioning of these features.	The key feature in the draft Plan area is the Cranford Basin stormwater management area which is a natural ponding area protected through a designation. The hydrogeology system support the Cranford Basin will be protected through requirements in the ODP and as part of applications for subdivision consents.
Policy 5.2.1.8 – Assessment of Hazards	Ensure that the level of assessment undertaken for plan changes, subdivision or development reflects the potential scale and significance of the hazard; and the nature and scale of the re-zoning, subdivision or development and its susceptibility to those hazards.	The proposed development has been assessed by Council's technical experts and external consultants. Further assessment will occur as part of any subdivision consent applications.
Chapter 8 – Subdivision, development and earthworks		
Chapter 14 - Residential		
Objective 14.1.1 – Housing Supply	a. An increased supply of housing that will: i. enable a wide range of housing types, sizes, and densities, in a manner consistent with Objectives 3.3.4(a) and 3.3.7; ii. meet the diverse needs of the community in the immediate recovery period and longer term, including social housing options; and iii. assist in improving housing affordability.	The development will increase housing supply but not significantly address the housing affordability limb of the objective, although there will be houses suited to first home buyers in the development of Area B.
Policy 14.1.1.1 – Housing Distribution and Density	a. Provide for the following distribution of different areas for residential development, in accordance with the residential zones identified and characterised in Table 14.1.1.1a, in a manner that ensures:	The proposed development will implement this policy – see above assessments on CRPS and Objective 3.3.7 Strategic Directions.

Provision Number	Provision	Assessment
	i. new urban residential activities only occur in existing urban areas or in greenfield priority areas identified in Map A of the Canterbury Regional Policy Statement; ii…… iii. medium density residential development in and near identified commercial centres in existing urban areas where there is ready access to a wide range of facilities, services, public transport, parks and open spaces, that achieves an average net density of at least 30 households per hectare for intensification development; iv. a mix of low and medium residential density development in greenfield neighbourhoods, that achieves a net density (averaged over the Outline Development Plan) of at least 15households per hectare; v. greenfield land that is available for further residential development up to 2028;….	
Objective 14.1.4 – High Quality Residential Environments	a. High quality, sustainable, residential neighbourhoods which are well designed, have a high level of amenity, enhance local character and reflect the Ngāi Tahu heritage of Ōtautahi.	These matters have partly been addressed in development of the ODP and will be assessed further when subdivision/land use consent is applied for.
Policy 14.1.4.1 – Neighbourhood Character, Amenity and Safety	a. Facilitate the contribution of individual developments to high quality residential environments in all residential areas (as characterised in Table 14.1.1.1a), through design: i. reflecting the context, character, and scale of building anticipated in the neighbourhood; ii. contributing to a high quality street scene; iii. providing a high level of on-site amenity; iv. minimising noise effects from traffic, railway activity, and other sources where necessary to protect residential amenity; v. providing safe, efficient, and easily accessible movement for pedestrians, cyclists, and vehicles; and	These matters have partly been addressed in development of the ODP and will be assessed further when subdivision/land use consent is applied for. The provisions of the RNN and RS zone will also achieve this policy.

Provision Number	Provision	Assessment
	vi. incorporating principles of crime prevention through environmental design.	
Policy 14.1.4.2 – High Quality, Medium Density Residential Development	a. Encourage innovative approaches to comprehensively designed, high quality, medium density residential development, which is attractive to residents, responsive to housing demands, and provides a positive contribution to its environment (while acknowledging the need for increased densities and changes in residential character), through: i. consultative planning approaches to identifying particular areas for residential intensification and to defining high quality, built and urban design outcomes for those areas; ii. encouraging and incentivising amalgamation and redevelopment across large-scale residential intensification areas; iii. providing design guidelines to assist developers to achieve high quality, medium density development; iv. considering input from urban design experts into resource consent applications; v. promoting incorporation of low impact urban design elements, energy and water efficiency, and life-stage inclusive and adaptive design; and vi. recognising that built form standards may not always support the best design and efficient use of a site for medium density development, particularly for larger sites.	These matters have partly been addressed in development of the ODP and will be assessed further when subdivision/land use consent is applied for. The provisions of the RNN and RS zone will also achieve this policy.

Appendix 4: Methodology

The particular ground conditions in draft Plan area require careful consideration. It is the Council's priority to minimise effects on natural processes, particularly the hydrogeology of Cranford Basin and the wider area.

1. Consider the effects of residential development on the hydrogeology (springs, subsurface flowpaths and groundwater levels) as potential constraints.

2. Identify and set aside areas required for surface and sub-surface water environmental management (blue network).

3. Identify opportunities to integrate reserves and green linkages into water environmental management, including connecting the adjoining stormwater basin area with existing residential neighbourhoods.

4. Overlay key cycle, pedestrian and road links in a manner that integrates with the water and reserves networks, provides public transport opportunities, maximises multi modal accessibility and minimises effects on the local road network.

5. Identify servicing and traffic network capacity constraints.

6. Allocate residential development densities and yields into the above framework having regard to the information available and the objectives and policies of the Canterbury Regional Policy Statement and the CDP.

7. Apply appropriate zones and provisions, including rules to address site specific issues (e.g. ground conditions).

This approach has been used elsewhere in Christchurch where potential water and other constraints have been successfully integrated with a development.

Appendix 5 – Evaluation of other potential greenfield areas

There were a significant number of submissions heard by the IHP that sought residential development in the rural zones adjacent to the Projected Infrastructure Boundary. In order to assist with reducing the risks identified in Section 11.5.4, a high level assessment has been undertaken of the comparative merits of these proposals against the preferred option for urban residential development in the draft Plan area using the criteria below. Although this methodology uses a subjective scoring system, it is not a precise science, however, it does broadly show how each proposal performs against one another, and the relative merits of the draft Plan area in particular. The relative suitability of these areas can be further assessed through a sensitivity testing if required.

Criteria for evaluating urban zoning proposals outside of the projected infrastructure boundary

1. *REGIONAL / STRATEGIC SIGNIFICANCE*

   Whether the scale or extent of the proposed development will significantly alter the urban form in a way that could undermine the urban development strategy. Factors considered include whether there is a defensible boundary preventing further incremental outward spread, potential yield .

   0 = potentially high impact

   5= unlikely to be of any significance.

2. *CONTRIBUTION TO CONSOLIDATED URBAN FORM & DESIGN*

   Whether the location is in an area that at least partially enclosed by urban development and the extent to which the development will integrate into an existing neighbourhood, could provide a safe and efficient internal layout.

   0 = not attached to boundary
   5 = completely enclosed

3. *NATURAL HAZARDS / GROUND CONDITIONS*

   Whether the proposed site is constrained by factors such as flooding, inundation, poor ground, mass movement rockfall, contamination

   0 = severely constrained and difficult to remediate or mitigate

   5 = no evidence of hazards

   REVERSE SENSITIVITY

   Whether there are legally established activities that could be adversely affected if residential development were to be permitted.

   0 = Adverse effect on strategic infrastructure

   5 = No likelihood of any adverse effect other than amenity of adjoining residences.

4. PROXIMITY TO KAC OR NEIGHBO0D CENTRE

Whether the development will provide transport choice through being close to a significant centre

0 = isolated

5 = close proximity

5. SERVICING

Whether the proposed development can be readily served with a sewer, water supply, stormwater disposal, and property access.

0 = cannot be serviced by any of the above

5 = Can be readily serviced with each

6. OUTSTANDING LANDSCAPE OR CULTURAL FEATURES

Whether the development will potentially adversely affect any Section 6 (RMA) feature

0 = Potential major effect

5 = no effect.

7. *REGENERATION OPPORTUNITIES*

Note: a 1-3 range has been used to avoid double counting with some of the other indirectly related criteria.

0 = low potential

3 = high potential

8. CONTRIBUTION TO HOUSING SUPPLY AND CHOICE

The number, typology and income mix of housing that could potentially be generated.

1= few houses, little choice,

3 = significant number of houses with potential mix

9. *OTHER MATTERS*

This could be whether a landowner has already expended significant amount of money in previous planning processes and circumstances have changed.

0 = no previous planning history

5 = long involvement, circumstances have altered

Assessment matrix

Rezoning - Preliminary Merits

RNN

Criteria		1	2	3	4	5	6	7	8	9	10	
Address	**Area (ha)**											
126 Sparks road, 17 Northaw Street, 36 Leistrella Road and 200 Cashmere Rd	6.6	4	4	3	4	3	4	4	3	2	4	35
236 Cashmere Rd	14	4	4	3	4	3	3	3	3	3	4	34

Hills

Address	**Area (ha)**											
26 Peninsula View	0.4795	5	1	4	4	1	2	1	0	0		18
22 Sanscrit Place, 138 Richmond Hill Road, 20 Sanscrit Place, 138A Richmond Hill Road and 138B Richmond Hill Road	n/a	4	1	4	5	1	4	3	0	0		22
296, 298 and 304 Worsleys Rd	n/a	4	4	1	4	3	3	3	1	0		23
	n/a			1	4							
200 Huntsbury Ave	0.9755	2	0	4	2	0	2	0	0	0	0	10
28 Morgans Valley	n/a	5	3	1	1	2	5	2	0	0	3	22
68 Harry Ell Drive	6.8	2	3	n/a	5	2	3	1	1	1	4	22
195 Port Hills Rd	5.9	2	3	2	0	2	4	4	1	1	4	23
353 Worsleys Rd	4.1	1	0	2	4	1	3	1	0	0	4	16
51 Heberden Ave	0.2757	4	4	0	5	2	4	2	0	0		21
79 Shalamar Dr	4.1	4	4	2	5	3	4	4	2	1		29
353, 355, 357, 359, 361 Worsleys Rd	20	1	0	2	4	1	3	1	0	1		13
33, 33A, & 35 Avoca Valley Rd, 8 Vega Pl, & 241 Port Hills Rd	6.5	2	3	4	1	4	4	4	1	2	4	29

84 Park Terrace, Lyttelton	1.74	5	0	0	5	1	1	0	0	0		12

Flat Land

Address	**Area (ha)**											
25A Greenhaven Dr	1.3	3	3	3	5	2	5	5	0	1	0	27
3 Barters Rd, 738, 740, 742, 746, 748, 750, 752, 754, 756, 762 Main South Rd	2.5	1	1	4	3	3	3	5	2	1		23
9A Dickeys Rd	0.9066	3	2	4	4	3	4	5	2	1		28
50, 52, & 54 Johns Rd	1.1089	4	3	4	4	3	4	5	2	1		30
	5.82											

Cranford Basin

Address	**Area (ha)**											
31, 41, 43, 45, 45A, 57, 59, 63 & 69 Grassmere Rd and 471 & 503 Cranford St	33	5	5	1	4	5	3	5	4	3	3	38
340 Cranford St 60 Croziers Rd	4.7	4	3	3	4	2	4	5	1	1	4	31