

STAGE 3 - SECTION 32

CHAPTER 17

RURAL - CRANFORD BASIN

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EXECUTIVE SUMMARY

The Cranford Basin has been under significant development pressure for the past two decades. Landowners have been seeking urban rezoning for over two decades, including through Proposed Change 1 to the Regional Policy Statement, through the LURP and more recently through submissions on the Proposed Replacement District Plan. It has previously been assessed (as part of developing the Urban Growth Strategy for the Operative City Plan) as being consistent with a consolidated urban form, but has been withheld from development due to four site constraints: peat ground conditions; access, susceptibility to flooding and ponding, and the condition of the northern relief sewer catchment.

These site constraints are now being addressed as follows:

- the NOR for the Northern Arterial Extension has been lodged with CCC and if confirmed will provide an opportunity for access from Cranford St;
- the NOR for the Cranford stormwater detention area has been lodged with CCC and if confirmed will provide onsite storage opportunities for much of the area around the periphery of the Basin;
- infrastructural improvements to the Northern Relief sewer catchment, and on-site pressure systems will reduce the risk of sewer overflows into the Avon River;
- there is a clearer understanding now of sub surface conditions, and geotechnical risks associated with development.

A number of landowners lodged submissions to Proposed Change 1 (PC1) to the Regional Policy Statement in 2009 seeking residential rezoning over parts of the Basin. The Commissioners' recommendations and subsequently the Regional Council's decision recognised the opportunities for development but considered more investigative work was needed and identified the area as a Special Treatment Area, and placed the Basin inside the Urban Limits. Ground conditions, stormwater management and future significant road connections required an approach via an Outline Development Plan involving particularly close integration between these elements and business and residential land uses. However the Draft Land Use Recovery Plan, which replaced PC1 following the Canterbury Earthquakes, excluded the area from the urban area and submitters once again unsuccessfully sought its inclusion. However, Council Officer's responses to submissions recommended that future consideration be given to rezoning those parts of the Basin for residential purposes that were not needed for stormwater detention.

Three Submissions seeking residential development have been received on Stage 1 of the Replacement District Plan. These have been rejected by the Independent Hearings Panel on the basis they are out of scope and will be dealt with through the third stage of the DPR when this proposal has been submitted. City Council officers in responding to these submissions need to reach a conclusion as to what is the most appropriate outcome to achieve the purpose (section 5) of the Act in this area.

There appear to be are sound resource management grounds for enabling a low density form of development in certain parts of the Cranford Basin. Those parts that are being considered currently are the areas for which the Council is satisfied that reliable geotechnical analysis has been undertaken and those areas outside the proposed designations for stormwater and roading. The evidence available to the Council suggests that there is potential for urban development, subject to completion of wastewater and water supply infrastructure works. Retaining that remaining land as rural is not the most appropriate way of achieving the purpose of the Act, having particular regards to Section 7(b) and Section 7(c) Market Economic Report, supported by the assessment by Property Economics, also discount commercial and/or industrial as potential activities other than small scale (e.g. land) retail outlets.

Moreover the overall intent of the strategic planning framework is to promote urban consolidation, and avoid any further outward spread of the urban area. The Cranford Basin is surrounded by existing urban development, although it is not itself identified as an urban area due to site specific constraints. In relation to the consolidation objectives of the CRPS and Strategic Directions outlined within the pRDP, urban development within the Cranford Basin could contribute to the achievement of the housing recovery targets as a proportion of overall growth of Greater Christchurch and avoid the need for expansion of peripheral areas. There is however no urgency to do this to meet any shortage land supply.

However, any urban development proposal within this area is inconsistent with the Land Use Recovery Plan and does not give effect to the Canterbury Regional Policy Statement. Any rezoning for urban activities cannot be implemented until the LURP amends the Projected Infrastructure boundary. Furthermore the delineation of boundaries (and rezoning of non-residential land) within the Basin must await the decisions on the NoRs. Decisions are unlikely before the end of the year.

Because of these other decisions, rezoning the Cranford Basin for urban purposes would be contrary to contrary to higher order documents and premature. Therefore through Stage 3 of the District Plan Review, the Cranford Basin is proposed to remain rural (Rural Urban Fringe). Depending on the outcome of the LURP review, and decisions on the NORs, there may be an opportunity to re-zone this area if the CRPS is amended such that the Basin is brought within the Projected Infrastructure boundary, and the extent of areas to be designated for public works is confirmed in a timely manner.

1. INTRODUCTION

1.1 PURPOSE OF THIS REPORT

The purpose of this report is to document the research and Section 32 (Evaluation) process which has been undertaken by the Christchurch City Council in determining the most appropriate land use zoning for the Cranford Basin (referred to in full or as 'Basin' throughout this report) area in Papanui, Christchurch Figure 1). The zoning of the Cranford Basin is being considered as part of Stage 3 of the Proposed Christchurch City Proposed Replacement District Plan. The proposal area relates to up to approximately 55 hectares of land, zoned Rural 3 in the Operative Plan, being the remainder of the 175 hectare Basin not required for the proposed Northern Arterial Extension (NAE) or proposed Cranford Basin stormwater detention area, both of which are currently progressing through the designation process. This proposal investigates rezoning options for the Basin.

1.2 STATUTORY REQUIREMENTS UNDER SECTION 32

Section 32 of the Resource Management Act 1991 (RMA or Act) prescribes the analysis which must be undertaken to assess the appropriateness of rezoning. It requires an evaluation of whether the objectives are the most appropriate way to achieve the purpose of the Act by identifying other reasonable practicable options, assessing the efficiency and effectiveness of the provisions in achieving the objectives, and summarising the reasons for deciding on the provisions. The assessment must identify and assess the benefits and costs of environmental, economic, social and cultural effects that are anticipated from the implementation of the provisions, including opportunities for economic growth and employment. The assessment must if practicable quantify the benefits and costs and assess the risk of acting or not acting if there is uncertain or insufficient information available about the subject matter.

The requirements of section 32 and an assessment of the rezoning against those requirements are contained in this report.

1.3 RESEARCH

The Council has commissioned technical assessments and sought advice from various internal and external experts and utilised this, along with internal workshops and stakeholder feedback, to inform the development of the land use zoning for the Cranford Basin area. Key research documents are listed in the Table below.

Title	Author	Description of Report
Cranford Basin Rezoning – Wastewater Review	Opus	Wastewater Constraints
Cranford Basin Rezoning – Water Supply	Opus	Water Supply
Cranford Basin Proposed Rezoning Transport Assessment	QPT	Transport Assessment
Cranford Basin Rezoning – Initial review of Economic Effects	Market Economics	Rural Land Use feasibility

Title	Author	Description of Report
Cranford Basin Geotechnical Desktop Report	GHD	Geotechnical
Cranford Basin - Commercial Potential Overview	Property Economics	Commercial and Industrial Land Use Potential
Cranford Basin Residential Proposal - Parks Planning Assessment	Council Assets and Networks	Open Space and Parks

1.4 CONSULTATION

The RMA requires the Council to consult with the Minister for the Environment, other Ministers of the Crown who may be affected by the plan, local authorities who may be affected, the tangata whenua of the area affected, and any customary marine title group in the area. The Council may also consult with anyone else during the preparation of the plan.

Consultation undertaken and feedback specific to the Cranford Basin Rezoning is summarised below:

- Several meetings have been held with CERA and Environment Canterbury (ECan) in relation to the proposed rezoning to outline the scope of the proposal, outcomes of the technical assessments, the issues and overall approach.
- A Collaborative Advisory Group (CAG) comprising representatives of the Canterbury Regional Council, Selwyn District Council, Waimakariri District Council, Canterbury Earthquake Recovery Authority, New Zealand Transport Agency, Ngāi Tahu and the Ministry for Environment (in an advisory role), has provided feedback in April 2015, on the scope of the proposal, the issues and overall approach.

Ngāi Tahu was invited to the CAG meeting outlined above but were not in attendance. A letter was sent to Ngāi Tahu inviting feedback on the rezoning proposal, and a meeting took place with the Runanga Focus Working Group in the Kōhanga Reo Room, Rehua Marae, on 8 June 2015. Concerns were raised about the stormwater detention area that was subject to the Notice of Requirement. There was a particular concern that the Runanga had not been consulted on this, a matter that was followed up with staff dealing with that matter.

There has been no formal community consultation with land owners on Cranford basin prior to notification, and no further discretionary consultation was undertaken subsequent to the Council decision to adopt a truncated process (from February 2015). Statutory consultation was undertaken following this date with CERA and ECan.

1.5 PLANNING HISTORY

Development in the Cranford Basin 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 Basin, but these were rejected by the Council, and no appeals were lodged. From around 2002 several approaches were made by the Case family and others seeking rezoning in the Basin due to problems being experienced with farming the land but these did not progress for a variety of reasons including access restrictions, insufficient sewer capacity and stormwater issues.

A number of landowners lodged submissions to Proposed Change 1 (PC1) to the CRPS in 2009 seeking residential rezoning over parts of the Basin. The Commissioners' recommendations and subsequently the Regional Council's decision recognised the opportunities for development but considered more investigative work was needed and identified the area as a Special Treatment Area, and placed the Basin inside the Urban Limits. Ground conditions, stormwater management and future significant road connections required an approach via an Outline Development Plan involving particularly close integration between these elements and business and residential land uses. However the Draft LURP, which replaced PC1 following the Canterbury Earthquakes, excluded the Basin from the urban area and submitters once again unsuccessfully sought its inclusion. However, Council Officer's responses to submissions recommended that future consideration be given to rezoning those parts of the Basin for residential purposes that were not needed for stormwater detention.

2. STATUTORY CONTEXT

2.1 SECTION 74/75, RESOURCE MANAGEMENT ACT

Section 74 of the RMA outlines that a district council must prepare and change a district plan in accordance with:

- Its functions under section 31;
- The provisions of Part 2;
- The obligation to prepare and have particular regard to an evaluation report under section 32;
- Any regulations;
- A direction given under section 25A.

Sections 74 and 75 of the RMA require that a number of planning policy documents must be given effect to or taken into account in preparing a District Plan. These include the following:

- National and regional policy statements and plans, with which the district plans must be consistent;
- National policy statements on matters of national significance;
- National environmental standards for natural resources;
- Regional policy statement and regional plans.

In preparing a district plan a local authority is also required to have regard to:

- Any proposed regional policy statement;
- Any proposed regional plan of its region;
- Any management plans and strategies prepared under other Acts;
- Any relevant entry in the New Zealand Heritage List;
- Regulations ensuring the sustainability of fisheries resources;
- Consistency with the policy statements and plans of adjacent councils;
- The need to take into account any relevant iwi planning documents;
- The extent to which the district plan needs to be consistent with the plans or proposed plans of adjacent territorial authorities.

Furthermore, the district council must not have regard to trade competition or the effects of trade competition (s.74(3)).

2.2 OTHER LEGISLATION

The development of RMA plans and evaluation reporting under section 32 sit within a broader local government framework. These set the strategic framework, vision and outcomes for a region or district. The RMA requires that territorial authorities take into account management plans and strategies prepared under other Acts, making this wider strategic framework relevant when determining what is 'most appropriate'.

Local Government Act 2002

Council's Long Term Plan is prepared under this legislation and the new ten year plan will be adopted in July 2015. It will have an important bearing on the completion of works affecting the Cranford Basin including wastewater infrastructure, the proposed stormwater retention area, and the Northern Arterial extension and other transport improvements.

Land Transport Management Act 2003

The Land Transport Management Act 2003 sets out requirements for the operation, development and funding of the land transport system. The purpose of the LTMA is to contribute to the aim of achieving an affordable, integrated, safe, responsive and sustainable land transport system.

Canterbury Earthquake Recovery Act 2011

In response to the disaster of Canterbury's earthquakes and the recovery task that now faces the country, Parliament has passed the Canterbury Earthquake Recovery Act 2011 (the CER Act).

The CER Act requires the Canterbury Earthquake Recovery Authority (CERA) to plan and execute a recovery strategy for greater Christchurch and gives CERA significant powers to make that possible.

The CER Act lists several purposes, but broadly, these fall into the following categories:

- The provision of appropriate institutions, powers and support to enable greater Christchurch to be rebuilt and otherwise recover as quickly and fully as possible
- The involvement of communities and the public in the decisions made about the rebuilding of their own area
- The restoration of the greater well-being of Christchurch communities.

Broadly, the CER Act encourages collaborative decision-making, particularly at higher levels, and the emphasis throughout is on a successful, swift and complete recovery.

Canterbury Earthquake (Christchurch Replacement District Plan) Order

The process for the District Plan Review (DPR) is prescribed by the 'Order in Council' made by Government on 7 July 2014, under the CER Act. The Order in Council modifies the RMA to provide a streamlined process for the review of the Christchurch District Plans and preparation of a replacement District Plan. The Order in Council states that the Council must have particular regard to the Statement of Expectations (schedule 4 of the Order in Council).

3. POLICY DOCUMENTS AND OTHER STRATEGIC CONSIDERATIONS

3.1 REGIONAL POLICY STATEMENT

Chapter 6 Recovery and Rebuilding of Greater Christchurch

The Land Use Recovery Plan (LURP) was approved by the Minister for Canterbury Earthquake Recovery and was gazetted on 6 December 2013, taking effect that day. It is a statutory document that directed ECan to make changes to the Canterbury Regional Policy Statement (CRPS). Those changes included inserting Chapter 6, "Recovery and Rebuilding of Greater Christchurch" and glossary definitions into the CRPS.

Chapter 6 of the CRPS requires Council to, in relation to the recovery and rebuilding of Greater Christchurch, give effect to the urban form identified on Map A, which identifies the location and extent of urban development that will support recovery, rebuilding and planning for future growth and infrastructure delivery.

The following provisions in the CRPS relate to urban development:

"Objective 6.2.1 Recovery Framework

Recovery, rebuilding and development are enabled within Greater Christchurch through a land use and infrastructure framework that:

...

(3) avoids urban development outside of existing urban areas or greenfield priority areas for development, unless expressly provided for in the CRPS;

..."

Policy 6.3.1(4) Development within the Greater Christchurch area:

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;

The Cranford Basin is not an existing urban area and is also not identified as a greenfield priority area in the CRPS.

Chapter 11 Natural Hazards

The approach to natural hazards, in particular for High Hazard Areas, in the CRPS is a policy constraint to urban development within a small portion of the Cranford Basin. Policy 11.3.1 in particular is relevant:

"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.”

Part of the Cranford Basin will be subject to the High Hazard Overlay, however for the most part this overlay is located within the proposed stormwater designation area. Therefore, no part of the proposal area is subject to the High Hazard Overlay.

3.2 CANTERBURY EARTHQUAKE RECOVERY STRATEGY

The Recovery Strategy lists six components of recovery each with associated goals. Those goals that are relevant to this proposal include:

- a. facilitating a timely and efficient recovery, including intervening where necessary to remove impediments, resolve issues and provide certainty;
- b. supporting people, in particular those facing hardship and uncertainty, by providing quality housing, education and health services;
- c. acknowledging and celebrating the rich and diverse Ngāi Tahu, colonial and other heritages and connections;
- d. supporting innovative urban design, buildings, technology and infrastructure to redefine greater Christchurch as a safe place for the future;
- e. rebuilding infrastructure and buildings in a resilient, cost effective and energy efficient manner;
- f. zoning sufficient land for recovery needs within settlement patterns consistent with an urban form that provides for the future development of greater Christchurch; and
- g. having a range of affordable housing options connected to community and strategic infrastructure that provides for residents participation in social, cultural and economic activities.

3.3 LAND USE RECOVERY PLAN

The LURP puts land use policies and rules in place 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.

The LURP requires the DPR to provide for housing choice, affordability, community facilities, intensification, revitalising neighbourhood centres, improved accessibility, the building of new communities, and streamlining regulation. It sets a target of 23,700 additional households to be created in Christchurch City by 2028.

As outlined earlier, the LURP directed changes to the CRPS requiring Council to give effect to the urban form identified on Map A. The Cranford Basin is not located within this urban boundary. However, it is noted that the LURP is currently being reviewed by ECan in collaboration with the strategic partners through the process outlined in section 5.4 of that document.

3.4 STATEMENT OF EXPECTATIONS

When preparing proposals for the DPR, the Council must have particular regard to the statement of expectations set out in the Order in Council (outlined above). The statement of expectations sets out the expectations of the Minister for the Environment and the Minister for Canterbury Earthquake Recovery (the "Ministers") for the replacement district plan. The expectations include that the replacement district plan articulates how decisions about resource use and values will be made. This must be consistent with an expectation to reduce reliance on resource consent processes, development controls and design standards, and requirements for written approval and notification.

3.5 REGIONAL LAND TRANSPORT STRATEGY

The Canterbury Regional Land Transport Strategy (RLTS) sets the strategic direction for land transport within the Canterbury region over a 30 year period. The role of the RLTS is to contribute towards the government's overall vision of achieving an integrated, safe, responsive and sustainable land transport system. The NAE is identified as a planned road in this strategy.

3.6 MAHAANUI IWI MANAGEMENT PLAN

The Mahaanui Iwi Management Plan directs that participation and particular interests of Ngāi Tahu Papatipu Runanga are recognised and provided for in urban and township planning. Recognising and providing for sites and places of importance and special values to tangata whenua.

Recognising and providing for papakāinga and marae, and activities through including objectives that specifically identify the importance of papakāinga development to the relationship of Ngāi Tahu and their culture and traditions to ancestral land; and zoning and housing density policies and rules that are specific to enabling papakāinga and mixed use development; and that avoid unduly limiting the establishment of papakāinga developments through obligations to avoid, remedy or mitigate adverse effects on the environment.

3.7 OPERATIVE CHRISTCHURCH CITY PLAN

Land Use zoning

The proposal area is zoned Rural 3 (Styx-Marshland Zone) in the Operative Plan. The surrounding area is zoned Living 1 and Living 1B, with Living 2 zoning located nearer the Key Activity Centre of Papanui, and there are localised areas of commercial development along Cranford Street. There is also an existing Scheduled Activity located towards the west of the proposal area – Top 10 Holiday Park.

Notices of Requirement

Two Notices of Requirement (NoRs) have been submitted by Council to designate land within Cranford Basin for the Northern Arterial Extension (NAE) and for Water Quality Treatment and Stormwater Detention. These requirements were publicly notified on 15 November 2014 with the submission period closing on 19 December 2014. Hearings were conducted in April but were adjourned, and at the time of preparing this report, had not been reconvened.

The NAE is a new roading connection extending from the southern end of the Northern Arterial at Winters Road across Cranford Basin to Cranford Street, and proposed works include four laning Cranford Street to Innes Road. Approximately 6.2ha of land in the Basin is required for the NAE designation. Stormwater from the NAE is proposed to be discharged to swales adjacent to the road (within the Stormwater Detention designation area) which will eventually discharge to Cranford East.

The proposed Stormwater Detention designation, comprising some 60 hectares, will enable Council to undertake a number of stormwater related functions on the site, including an extensive planting programme. The extent of the designated area specified by the NoR is generally consistent with the area of land required to accommodate the 2% AEP (24hr) event.

The extent of the proposed designations within the Cranford Basin are shown in Figure 2 below.

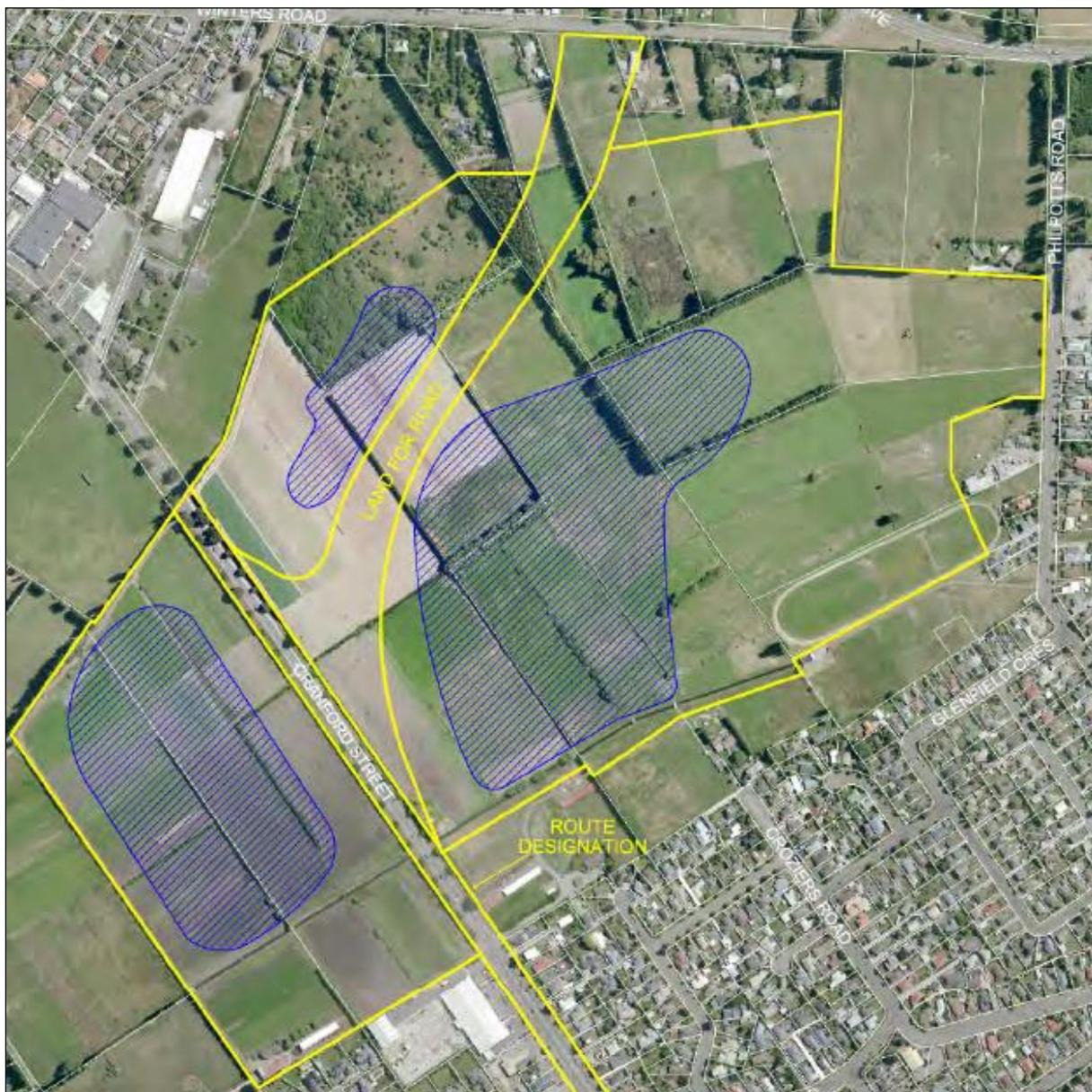


Figure 2 – Location of proposed Council Roading and Stormwater designations within Cranford Basin

3.8 PROPOSED REPLACEMENT DISTRICT PLAN

Land Use zoning

There is little material change to the operative zoning proposed in the pRDP. The surrounding area is zoned Residential Suburban in the, with Residential Medium Density zoning located nearer the Key Activity Centre of Papanui, and there are localised areas of commercial development along Cranford Street. There is also an existing Scheduled Activity located towards the west of the proposal area that is proposed to remain in the pRDP which will be addressed through Phase 2 of the DPR (Guest Accommodation – Top 10 Holiday Park).

Strategic Directions

The decision on the Strategic Directions Proposal was released by the Independent Hearings Panel on 26 February 2015. Evidence presented in relation to housing capacity and choice demonstrated that very significant pressures have been put on housing demand, supply and affordability and that those pressures are in large part from the enormous damage resulting from the earthquakes, in addition pressures have arisen from changing demographics. The panel outlined that the evidence demonstrated there was a consequential need for the Plan to allow for additional housing capacity – 23,700 dwellings between 2012 and 2028, to be achieved through a “combination of residential intensification, brownfield and Greenfield development” and additional housing opportunities – including “a choice in types, densities and locations and affordable, community and social housing and papakāianga (Refer Objective 3.3.4 (Housing capacity and choice)).

Objective 3.3.7 seeks to provide a well-integrated pattern of development and infrastructure, a consolidated urban form, and a high quality urban environment that, amongst other matters:

(d) 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:

- (i) 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*
- (ii) in those parts of Residential Greenfield Priority Areas identified in Map A, Chapter 6 of the Canterbury Regional Policy Statement; and*
- (iii) in suitable brownfield areas*

It also provides for urban activities “only within the existing urban areas or on Greenfield land on the periphery of Christchurch’s urban area identified in accordance with the Greenfield Priority Areas in the CRPS, Chapter 6, Map A.” Further to this is requires the co-ordination of “the nature, timing and sequencing of new development with the funding, implementation and operation of necessary transport and other infrastructure”.

The strategic direction in relation to natural hazards (Objective 3.3.6) recognises the importance of the avoidance of unacceptable risk, and that subdivision, use and development is to be undertaken in a manner that ensure natural hazard risks to people, property and infrastructure are appropriately mitigated. It also allows for strategic infrastructure where risks to people, property and infrastructure are assessed as unacceptable, provided two prerequisites are met (no reasonable alternative and designed to maintain integrity and form during natural hazards).

Residential (Chapter 14)

Chapter 14 (Stage 1) outlines the Residential Proposal. The objectives (Objective 1) for this proposal outline that there is a need to ensure an increased housing supply that will:

- a. enable a wide range of housing types, sizes, and densities;
- b. meet the diverse needs of the community in the immediate recovery period; and longer term, including social and temporary housing options; and
- c. assist in improving housing affordability.

Further to this, Objective 2 requires short-term residential recovery needs are met by providing opportunities for:

- i. an increased supply throughout the lower and residential medium density areas;
- ii. higher density comprehensive redevelopment of sites within suitable lower and residential medium density areas;
- iii. medium density comprehensive redevelopment of community housing environments; and
- iv. new neighbourhood areas in greenfields priority areas.

The Stage 2 Residential proposal does not affect Cranford Basin.

Natural Hazards (Chapter 5)

Chapter 5 outlines the Natural Hazards Proposal. The Floor Level and Fill Management Area covers a portion of the proposed rezoning site to the south west. Therefore, of particular relevance to the Cranford Basin are provisions requiring minimum floor levels. In addition parts of the rezoning area are covered by a Flood Ponding Area. Provisions relating to compensatory storage are relevant in this regard. Part of the Cranford Basin is also subject to the High Hazard Overlay, however for the most part this overlay is located within the proposed stormwater designation area. Areas that are subject to the High Hazard Overlay are not subject to the proposal area.

Rural (Chapter 17)

Should the site remain Rural, it would become part of the proposed Rural Fringe Zone. The provisions for this zone are in general terms not dissimilar to the current Rural 3 Zone with a strong emphasis on rural production and economy. One significant difference is that subdivision below 4 hectares (but not less than 1 ha) is proposed to be a discretionary activity, not non complying.

3.9 NEED FOR FURTHER HOUSING LAND

One of the key strategic issues is whether the rezoning of land in Cranford Basin for housing is needed for recovery, not only for Christchurch but also for the UDS area as a whole (refer to Section 3.2.1 in the LURP). This will also be a consideration for CERA and ECan in consideration whether or not to amend the CRPS and LURP respectively to enable the proposed zoning to be put into the Replacement District Plan.

The projected land use needs for housing (recovery) are contained in Section 3.2.1. Strong demand for housing is anticipated in the future due to three drivers: temporary accommodation; accommodation for

rebuild workers; and household growth from the existing population and migration. Projections for household growth in the LURP are for an additional 36150 households for Greater Christchurch by 2028 of these Christchurch is to provide 23,700. These are severed Actions in the LURP that provided, with a strong emphasis on intensification.

Whether land is further greenfields land is needed is largely a decision of the market but the Plan has a role in providing sufficient opportunities to enable market needs to be met. This involves a balancing exercise involving assessments of demand and supply of greenfields residential land, and an evaluation of location options against urban growth policies, including the efficient servicing of that land. Consideration also needs to be given to whether zoning land in addition to the Greenfields Priority Areas will have planning implications for the development of existing areas identified for development in both Christchurch and the UDS area as a whole, including intensification areas.

A further matter, which was raised by the Ministers in their comments on stage 3 proposals¹, is whether or not the Cranford Basin is an appropriate location for additional greenfields land, compared to other options. There hasn't been any comprehensive comparative analysis of greenfields development options at a local since the preparation of the UDS², and although that assessment of options was undertaken more towards a sub- regional scale, it did evaluate infrastructure costs associated with different 'growth pockets'. The IBD identified the potential for some 3300 household covering the entire Basin. The Section 32 Evaluation on greenfields growth areas for the Operative City Plan³, which was not challenged, was the most recent wide ranging assessment of greenfields pockets against a suite of urban growth objectives. That analysis identified the Cranford Basin as being the area that best met the overall objective of urban consolidation in terms of urban form.

Demand for greenfields land

Greenfields sections are one means of meeting projected housing demand. The key question is: how many (or what percentage) of the projected numbers of households will form in 'greenfield' sites as opposed to infilling, and how does this translate into amount of land needed? This can be matched to the projected supply of greenfields land and a judgement made as to whether the additional land in the Basin (or other areas) is needed for recovery. There may be, of course, other resource management reasons that support a rezoning.

Two key variables in making this judgement are the percentage of household growth going to greenfields (as opposed to infill/ intensification); and the density at which greenfields development takes place. Table 1 below illustrates the high sensitivity of land need under different assumptions.

Table 1 Sensitivity of land need to percentage of household growth to greenfields and greenfields density

% of growth in Greenfields (total 23,700)	Density (hh/ha)	HA needed 2028
30 (70)	15	474

¹ Ministers' Comments on Draft Stage 3 Proposals Proposed Replacement District Plan May 2015

² Inquiry by Design, Final Report Greater Christchurch Urban Development Strategy 2007.

³ Urban Growth Section 32 Report 5, Evaluation of Growth Options, CCC 1994.

% of growth in Greenfields (total 23,700)	Density (hh/ha)	HA needed 2028
55 (45)	15	869
75 (25)	15	1185

(Numbers in brackets is the percentage of growth occurring through intensification)

The 70% intensification figure is the upper limit proposed by Mr Douglas Fairgray in his evidence to the Independent Hearings Panel, while the 25% is approximately to lowest intensification recorded on over the past 10-15 years.

The City Council's vacant land register currently has 1990 hectares shown as vacant zoned residential land. This is made up of land in the greenfields priority areas, greenfield land rezoned in the Operative City Plan but not yet developed out (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. The vacant land register does not include FUDAs or rural areas identified in the CRPS as Greenfields Priority Areas that have yet to be rezoned - some 440 hectares. Relating this vacant land figure back to Table 1, it seems clear that there is no shortage of vacant residential land until 2028.

It is important however in the Christchurch context to recognise four broad categories of vacant land (Table 2). For assessing the need for Cranford Basin to be rezoned the vacant area on the 'flat' is most pertinent.

Table 2 Categories of vacant land (Rounded)

Christchurch 'flat' areas	970
Christchurch Port Hills	500
Banks Peninsula	340
Remainder	200
Rural but a priority area	100 (Highsted)
Future development	440

Refer to Appendix 9 (vacant land register)

Stage 2 of the pRDP proposes to rezone the remainder of the Highsted blocks and the Future Urban Development Areas to Residential New Neighbourhood. This will, if they become operative increase the amount of vacant residential zoned land in Christchurch on the 'flat' to around 1670 hectares.

The 'true' availability of residential land could be moderated by factors including developers facing delays in obtaining all the necessary purchasing contracts from land owners in areas that have ownership fragmentation. It also needs to take account of infrastructure constraints and other landowner-related impediments eg Highfields.

Actual Take up rates

The average rate of take up of vacant residential land over the past 10 years has been 77 hectare / annum. However there are significant variances both over the period and within each residential zone. A closer examination of Appendix 8 reveals that for the various Living 1 and Living G Zones the rate of take up averages around 60 hectares per annum. Projecting this rate of take up out to 2028 the amount of vacant land taken up would be around 700 ha, providing for 10500 houses of the 23,700 required (assuming 15 hh/ha) (Appendix 9). This is equivalent to 44% of projected growth being greenfields, and 56 intensification. Historically the percentage of new residential development has not exceeded this and given the amount of greenfields land available a 44/56 split seems reasonable. Under these assumptions, there would be 800 ha of vacant flat land left in 2028.

Under these take up rates there would be 800 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, including for earthquake recovery.

Note: Greenfields for the former Christchurch City means land that was undeveloped and zoned as 'greenfields' land following the decision on the City Plan in 1999.

Sections

Appendix 10 provides details on the potential number of sections that could be developed in the main greenfields areas⁴. It also contains figures on the various stages in the development process which sections are at, and infrastructure constraints.

Since February 2011, land for around 10,592 sections has already been rezoned for housing, over half the number of sections anticipated to be needed. No new areas have been given an operative zoning since the last update provided to Council at the end of 2014 as most if not all of the remaining priority areas will be rezoned through the Replacement District Plan.

The number of sections that have been given subdivision consent, or for which consent has been applied for in greenfield priority areas, has increased by 127 bringing the total number of sections consented in greenfield priority areas to 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. In addition there are over 1200 consented sections located in areas, such as Aidenfield, that were rezoned and under development prior to greenfields priority areas being identified.

There are 11,470 potential sections still subject to some form of infrastructure constraint, mostly in the South West growth area. Of these constrained sections 8,870 are yet to be rezoned. The remaining 2,600 are located in Prestons and Highfields, while 797 in Awatea await a decision regarding the kart club. Infrastructure projects to enable further subdivision continue to be progressed with the number of sections constrained by infrastructure reducing by 300 since the last update to Council.

⁴ Christchurch City Council Land Availability Report (April 2015)

4.0 SUMMARY / CONCLUSION

The overall intent strategic planning framework is to promote urban consolidation, and avoid any further outward spread of the urban area. The Cranford Basin is surrounded by existing urban development, although it is not itself identified as an urban area due to site specific constraints. In relation to the consolidation objectives of the CRPS and Strategic Directions outlined within the pRDP, the Basin is the most suitable location for urban development of any rural land left in the City, and in comparative terms, superior to most if not all of the existing greenfields priority areas.

There is clear evidence that the number of potential sections that can be theoretically generated from existing priority areas is more than sufficient to meet the projected additional gross housing demand in the LURP⁵. However, providing that new urban development in the Basin would not divert public infrastructure away from existing planned areas (including in adjoining districts) then arguably new housing here would contribute to earthquake recovery in the same way as intensification does.

Provided that infrastructure constraints are progressively removed, the present trends indicate that Council is on track to meet the projected demand for greenfields sections until 2028 as required by the LURP.

⁵ Land Use Recovery Plan, UDS Partners 2013 3.2.1 Table 1.

4. SITE DETAILS

4.1 DESCRIPTION

The proposal area is located within the Cranford Basin. The Cranford Basin is 170 hectares of low lying rural land located to the north of 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 Basin.

The Cranford Basin represents an anomaly within the urban setting of Christchurch – previously a wetland; the Basin was drained in the 1960s to accommodate flood mitigation programmes and to provide access to the horticultural potential of the underlying peat soils. Suburban development now surrounds the Basin however it remains a rural landscape as a result of its low lying topography, compacting peat soils and high water table. It 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 canals.

4.2 PHYSICAL CHARACTERISTICS

Land conditions and geotechnical considerations

The Cranford Basin is a naturally low-lying area surrounded by higher ground. The whole of the Basin covers some 340ha with the perimeter of the outer Basin area at approximately RL15.1-15.3.

A desktop geotechnical study prepared by Christchurch Geotechnical Database (GHD) in 2015 (refer Appendix 1) outlines that extensive parts of the area are known to be underlain by swamp derived deposits comprising soft silts, organic silts and peat. From the investigations available from the ECan well database and CGD, the site has been determined to comprise alluvium, underlain by swamp derived deposits. This is further underlain by alluvium, underlain by the Riccarton Gravels. Additional 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 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. Groundwater 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).

The site is located within a Liquefaction Assessment Area 1 in the pRDP. The site is considered to have a minor to moderate susceptibility to liquefaction (GHD, 2015). GHD advised that liquefaction analysis of relevant CPT's has indicated liquefaction induced settlement for most of this area as equivalent to TC2 land, with some CPT's indicating TC2/TC3 hybrid land. TC2 ground conditions for this zone are considered appropriate as minimal liquefaction has been observed following the Canterbury earthquake sequence.

The shallow soils 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. There are complexities arising from development of an area where competent ground is at depth. However, there are instances of developments that have occurred around the periphery of the Cranford Basin with similar ground conditions. 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 be 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 across the site and will require further specific investigations and specific design. However, it is likely that the lower alluvium will provide a suitable strata for pile embedment, therefore piling depths could range from 5-10 m bgl (GHD, 2015). 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.

The Council has also had made available to it a report prepared on behalf of some of the landowners in the south end of the Basin by Bell Geoconsulting Ltd (BGL). That report was peer reviewed on behalf of the Council by GHD Ltd, having particular regard to the MBIE Guidelines.⁶ The main findings from that report are as follows:

- 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.
- 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 is based on data obtained from twelve CPTs and numerous boreholes and hand augers completed across the site by various parties.
- 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.
- 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.
- 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. Liquefaction susceptibility is low.
- 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 than 100mm. A TC2 land classification is considered appropriate based on our analysis of the liquefaction evaluation data.

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- An assessment against RMA Section 106 requirements identified that the site is not subject to falling debris, erosion or slippage because of the flat nature of the land. This is consistent with observations that the land has not been subject to ejection of liquefaction materials or inundation as a result of earthquakes.
- 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 our 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.

BGL consider that the ~12.5ha area is suited to one or two-storey residential dwellings with appropriate shallow ground improvement for the soft soils and organic material. Site-specific foundation design and related structural engineering considerations are critical to successful subdivision of this site.

Contaminated land

The activities that have occupied this area traditionally have consisted of small-scale agricultural and horticultural uses such as market gardening, orchards and small-scale pastoral farming.

A brief search of the ECan Listed Land Use Register (LLUR) identified several properties have Hazardous Activities and Industries List (HAIL) activities including:

- Livestock dip or spray race operations;
- Persistent pesticide bulk storage or use (multiple properties); and
- Storage tanks or drums for fuel, chemicals or liquid waste (GHD, 2015).

Change of the use of land from its current use to residential, would require Preliminary Site Investigations and subsequent Detailed Site Investigations to classify contamination presence. This work could be undertaken at any future subdivision stage.

Natural hazards

Part of the area for possible rezoning is located within the Floor Level and Fill Management Area. This is not seen as a barrier to development provided the requirements of the rules associated with flood hazard are able to be met (i.e. new development will require resource consent which will require appropriate floor levels to be established). In addition, detailed assessment work will be required to be undertaken to determine whether there will be any flooding effects associated with the necessary filling to satisfy minimum floor levels. Parts of the rezoning proposal area will be located within Flood Ponding areas. Provided compensatory storage can be provided it is considered that this does not represent a barrier to development of the area.

No part of the proposal area is located within a High Flood Hazard Overlay.

Landscape/ ecological context

A report prepared by Poppelwell, 2003 outlines that the landscape southwest of Cranford Street is characterised by the open space, tilled soils and clipped hedgerows of market gardens. North to Winters Road the landscape displays the characteristics of a picturesque landscape due to the presence of open pasture, horse grazing and unclipped rows of established shelterbelt trees.

Therefore, the landscape is considered to be significantly modified from its original pre-European/ pre-Maori state, with few remnants of native fauna and/or flora remaining.

Cultural heritage values

There are no sites of heritage or cultural values and the existing landscape has been highly modified. Although there are no specific sites of significance to tangata whenua – it is understood the health and life giving force of waterways and wetlands is of concern to Ngāi Tahu (Poppelwell, 2003).

4.3 SERVICES/ INFRASTRUCTURE

Three infrastructure constraints - site access, wastewater disposal, and stormwater disposal - have been major historical impediments to development in the Cranford Basin. Proposed works being promulgated through NoRs for stormwater and the NAE will to a large extent overcome the stormwater and access issues, and proposed works in the Northern Relief sewer catchment will eventually reduce the frequency of sewer overflows. There will still be a possible issue with the water supply until pipe and pump station upgrades are carried out.

In order to evaluate more precisely infrastructure constraints impact on potential development options, effects on transport, wastewater and water supply infrastructure, three potential development scenarios were modelled:

- Scenario 1: Living 1 B density 200-250 houses;
- Scenario 2: Living 1 density at 15/ha - 650-750 houses; and
- Scenario 3: Living 3 standards - 1500 houses.

The outcomes of this modelling are included in the following discussion.

Wastewater

Cranford Basin is part of the upper Northern Relief trunk sewer catchment. There are three constructed overflows on the trunk sewer itself, two of these are incorporated into the Council overflow discharge consent with ECan. One overflow is located adjacent the Rutland Reserve (Grassmere) and discharges into the Dudley Creek Diversion. There are also a number of constructed, consented and unconsented overflows in the gravity and pump station catchments which contribute flows to the Northern Relief.

Prior to the seismic events of 2010/11, the Northern Relief overflows spilled, on average, once to twice per year. With the additional infiltration into the upstream network, this frequency has increased. In addition to this, the lower sections of the Northern Relief trunk sewer have sustained significant damage. In its current damaged state, the trunk sewer continues to provide a good level of service, albeit with a reduced hydraulic capacity. The repairs are unlikely to be completed before 2023.

In order to expedite the repairs to the Northern Relief, the Council fast-tracked a major upgrade project -the Wairakei Diversion. This project provides a diversionary connection between an upper collector sewer of the Northern Relief trunk system (known as the Wairakei Collector) and the newly constructed Western Interceptor trunk sewer. Once completed, this project will enable significant flows from the Northern Relief catchment to be diverted across to the Western Interceptor, thus reducing the number of overflows from the Northern Relief to the Avon River. The primary driver is to assist with repairs to the Northern Relief itself. However, modelling suggests that this, and other upgrades will also reduce overflows from the Northern Relief to below consented levels, and create sufficient capacity to cater for the development of the Cranford Basin

In response to the post -earthquake challenges outlined above, Council has been working closely with ECan for more than a year on the development of an interim over flow discharge consent compliance strategy. This strategy has been agreed and signed by both parties and commits Council to on -going refinement and recalibration of the wastewater model as the infrastructure rebuild progresses. Council will continue to monitor the consented overflow sites and will install monitoring equipment in any new sites that are indicated to overflow more than once every two years in the hydraulic model. At the end of 5 years, Council will re-run the model to take account of all of the rebuild work and trunk sewer upgrade work that has been carried out over that time. If, following that review the model suggests that the wastewater system is complying with the conditions of the discharge consent, the compliance strategy will terminate and Council will continue to ensure compliance for the remainder of the consent period. If, following that 5 year review, the model suggests that the wastewater system is not in compliance with the conditions of the discharge consent, the Council will be required to apply for a new consent at that time. In either case, it is expected that the ultimate containment standard required for the wastewater system will be no more than an average 1 overflow event in two years.

OPUS Consultants were asked to assess the potential impacts of development around the edge of the Basin under the three scenarios (refer Appendix 2). They advised that development of any of the re-zone areas are predicted to result in moderate or major impacts to the performance of the wastewater network, if unmitigated. The impacts predicted include increases to volume lost from manhole or constructed overflows. The south west portion of the proposed rezoning would connect into the Northern Relief, which is currently predicted to be heavily surcharged during wet weather flows (WWF), and the Grassmere overflow downstream is predicted to overflow. Any addition in flow into the Northern Relief has a corresponding increase in volume lost out the Grassmere overflow. Selection of alternative connection points is unlikely to significantly alter these conclusions due to the current status of the network issues in the area and the proximity to the Grassmere overflow location. Areas north east of Cranford Street are able to connect into existing reticulation in the PS6 catchment. However, due to surcharging in this catchment during wet weather flows, any increase in flows during wet weather results in an additional manhole overflow and freeboard issues. The following is an outline of the recommended constraints to the rezoning of the 3 sites located within the Cranford Basin:

1. For the Grassmere site (Site A), consideration should be given to the timing of any potential development to be in line with or following on from the timing of proposed upgrades at the Grassmere overflow. If the development of the rezoned area occurs prior to the upgrades, the volume lost at the Grassmere overflow during wet weather is predicted to increase.
2. For the Case and Crozier sites (Sites B and C), it is recommended that no development occur prior to Council undertaking further assessment to determine if pipe upgrades are required immediately

upstream of PS6 (refer results for specific pipes) and allowing for the implementation of these upgrades to take place if required.

3. For all re-zoned sites it is recommended that a pressure or vacuum wastewater system be considered rather than gravity.

For all re-zoned sites a system that is able to attenuate flows during wet weather should be considered. To avoid the risk of overflow and freeboard issues, attenuating WWF from the new developments until after peak WWF passes in the network is necessary.

Water supply

Any new development in the Cranford Basin will be supplied from the Saint Albans water supply zone after rezoning of the Christchurch water supply is carried out.

Water supply servicing for the development in the Cranford Basin is challenging because of the lack of pump capacity in the area, and a lack of significant sized pipes around the Grassmere pump station. The deficit of available capacity in the area near the Cranford Basin means currently pumps operate at flows above their normal operating ranges during peak demand. The pump operation results in substantial pressure drops in the zone. The lack of local pumping capacity will continue to be an issue with the proposed rezoning to create the Saint Albans water supply zone. Any additional development in the Cranford Basin will increase the deficit and reduce system performance in the Saint Albans water supply zone. Each of the three development scenarios tested are able to be serviced, but require upgrades to the source capacity and network to meet Level of Service (LOS) requirements (refer Appendix 3).

Stormwater

Cranford Basin is an extensive low-lying area with high winter groundwater levels. The peaty soils within the Basin 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. Considerable ground subsidence has occurred over this period. The bearing capacity of the soil is very low and it is very sensitive to lowering of groundwater levels. Historically the floor of the 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 and the frequency of inundation has increased. The bearing capacity of the soil is very low and it is very sensitive to lowering of groundwater levels.

The Basin comprises two extensive ponding areas, one north of Queen Elizabeth II (QEII) Drive (Cranford North) drains north to the Styx River, while the Basin south of QEII Drive drains south-east to the Avon River. There is a control structure on Winters Road Drain near Winters Road intersection with QEII Drive that 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 Styx River via Horners Drain, depending on the circumstances.

Public pressure to relieve flooding downstream in the suburbs of Mairehau and St Albans gradually mounted as the city expanded to the north and west of Cranford Basin in the 1960s and 1970s. The Christchurch

Drainage Board embarked on a series of flood improvement projects from the mid-1970s which culminated in construction of the Upper Dudley Creek Diversion.

The Upper Dudley Creek Diversion is a timber-lined channel flowing east through Cranford Basin to Pumping Station 219 (PS 219) from where water is pumped into a 1,350 mm diameter pipeline in Philpotts Road. The project was completed in 1989 to relieve flooding downstream in areas of St Albans such as the Flockton Street precinct. During significant rainfall events the Diversion overflows and water ponds in Cranford Basin. The outflow discharge from Cranford Basin into the stormwater network downstream is controlled by the pumps at PS 219 which have a combined capacity of 2.5 m³/s.

A new pumping station PS 202 has been built in Kensington Avenue to alleviate flooding in the Flockton Basin, resulting from earthquake-induced land settlement. PS 202 will discharge stormwater into the Dudley Creek Diversion downstream of Philpotts Road. Capacity limitations in the Dudley Creek Diversion are likely to require reduced pumping by PS 219 and additional flood storage in Cranford Basin during times of extreme rainfall.

The Styx River Surface Water Management Plan (SMP) including the Styx SMP Blueprint set out the direction of future land use changes for Cranford Basin (amongst other areas) related to natural ponding and increased residential and business development and the management of stormwater derived from those developments. It does not determine future land use, but addresses how surface water will be managed in response to any future land use changes.

The Cranford North area normally drains north to the Styx River, while the Cranford West and East areas normally drain south-east to the Avon River. The decision was made to include Cranford Basin catchment in its entirety in the Styx SMP area because it was considered important to implement the one integrated strategy for all of the Basin as soon as possible to facilitate the resolution of growing development pressures on the Basin.

One of the principal surface water management objectives for the Styx SMP Area is:

Investigation into the development of the Cranford Basin natural ponding area to optimise its use as a multi-purpose facility for stormwater quality treatment, flood attenuation, ecological restoration and district amenity.

A stormwater management strategy for Cranford Basin that includes the following elements is recommended in the Styx SMP Blueprint:

- i) *CCC purchase the remaining area of Dudley Diversion and Horners/Kruses Bullers 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 NAE 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.*

ECan granted a consent in October, 2013 based on the Styx SMP for catchment-wide discharge of stormwater throughout the Styx SMP area which included Cranford Basin.

Cranford Basin will provide:

- Stormwater treatment and detention for the large contributing urban catchment;
- Wetland treatment and stormwater detention for all runoff from the proposed NAE/CSU project (refer to clauses 7 and 9); and
- Compensatory storage for the flood volume displaced by NAE embankment.

A NoR for these works was lodged in November 2013 and hearings began on 20 April 2015. The Cranford Basin site is considered critical in terms of stormwater detention and stormwater quality treatment for the contributing urban catchment. Council control over the site will also provide the opportunity to enhance ecosystem, iwi and recreation values over time. The designation is reasonably necessary to achieve these Council objectives for the following reasons.

The designation will provide long-term land protection and certainty for the future. It will identify and protect the land in the City Plan removing any doubt as to its purpose. The land would be protected from uses that may be incompatible with the designated purpose. It will provide a basis for the subsequent acquisition of the land.

The Council has a short term and a long term vision for the land within the proposed designation. In the short to medium term, pastoral farming would be encouraged. The option would be available to any owner who sold land to Council to lease back and continue to graze the land, or use it for any other purpose compatible with Council's drainage objectives. Continuation of horticultural land use is not favoured because the peaty soils break down and subside under the regular operation of agricultural machinery.

Council has a long term vision of a large public open space reserve comprising wetlands, extensive open and forested areas of ecologically suitable planting criss-crossed by public pathways. Planting would begin in the stormwater quality treatment facilities for the wet, low-lying areas and gradually extend out to the periphery over time as money becomes available.

In developing the proposed ponding areas the Council will excavate to create treatment ns and wetlands, divert drains and construct walkways and planting areas. West of Cranford Street this can be expected to alter the direction of groundwater flow in some places and draw down the water table around the periphery of excavations. Water levels will be managed in basins and wetlands – typically the lowest lying parts of the basin – such that a chosen minimum water level will be maintained. 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.

If there is a drawdown of groundwater at the perimeter of the basin this will tend to dry the soils and accelerate peat decomposition and consolidation. Parts of the area proposed for residential zoning could be affected.

Development processes, and particularly filling, may also cause undesirable groundwater changes. It is expected that residential properties will have need of a stable platform, comprised of stable fill replacing any soft soils, over an area larger than the building. Such a platform would minimise settlement that would

otherwise cause the ground to subside away from houses, which (according to the evidence of a number of geotechnical experts) will be piled. Substantial areas of fill will dam and divert groundwater, which naturally flows in a south-easterly direction. Such a dam would elevate groundwater levels to the north and west and may cause new springs.

Transport

Traffic modelling for a range of land use scenarios has been conducted using Council's CAST traffic model for the horizon years of 2021 (pre-Northern Arterial and Extension) and 2031 (with Northern Arterial and Extension) for the AM and PM peak traffic hours (refer Appendix 4).

At 2021, for Scenario 1 (200 hh), there are measurable impacts at a number of locations on the surrounding road network for which no simple mitigation measures have been identified. Because these locations are already operating at LoS E or F 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. It is somewhat subjective as to whether the scale of impacts is considered minor, or more than minor. Advice from QTP Consultants is not to allow for zoning that could exacerbate existing efficiency and associated safety issues on the road network at 2021 without either mitigating these effects or undertaking more detailed analysis to confirm these initial findings.

At 2021, for Scenario 2 (750hh), 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 Extension (NAX) 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 & NAX. 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 hh) are also generally minor. The modelling does however indicate some potentially significant increases in delays and border-line performance of some minor road approached to Papanui Rd.

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 some form of 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 does suggest that some form of 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 Rd 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.

Assessment of the site in terms of public transport, cycling and walking accessibility indicates that it is well located to take advantage of existing and proposed investment in high quality Public Transport (PT) services and cycling infrastructure. Further development of an ODP should include extensive cycling and walking linkages to capitalise on the high quality PT and cycling routes and to 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.

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

Given the forecast traffic volumes on Cranford Street and the close proximity of such a crossing facility (connecting the northern and southern portions of the zoning) and the proximity to the proposed Cranford St / NAX intersection, our assessment at this high-level stage is that this should be grade-separated (an overpass or underpass).

The overall assessment of the transport implications of alternative land-use scenarios is that a high number of residential households (Scenario 3) would be the preferable use of the proposed urban zoning. 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).

Residential zoning is well located for local public transport, employment, shopping and recreational activities. A relatively large number of households realise the full potential of the site for being serviced by, or having access to, high quality public transport or the Major Cycle Routes, thereby gaining full advantage of investment in cycle infrastructure and public transport services.

Public Open Space

The Public Open Space Strategy (2010) outlines the provision of best practice parks planning. The Public Open Space Strategy states that per 1000 people (in any proposed area), 1 ha of Neighbourhood Park is required and 3.5 ha of Sports Park is required.

Based on information provided: 500 lots, x 2.2 people (estimated) = 1100 new future population for Cranford Basin. This being the case, to maintain a reasonable parks 'level of service' for the future residents, and as per the POSS (2010) the following park areas are required:

- Approx. 1.1 ha of Neighbourhood Parks; and
- Approx. 3.6 ha Sports Park.

Neighbourhood Parks are the first priority for using development contribution (DC) funds. Neighbourhood parks are typically 3000-4000m², and typically have playground equipment, fencing, seating, landscaping etc, and should be no more than 400m away from 90% of proposed lots.

Neighbourhood Park land should mostly be usable sized park land (i.e. square/rectangular, suitable for informal running around/ball games etc). Neighbourhood Park land should be of suitable drainage, topography and amenity/character.

Three Neighbourhood Parks are recommended. Specific locations are marked up in red on an attached site map, and are described below:

1. Increase the size of Shearer Park. Add an additional 2000m² to the eastern side of Shearer Park.
2. A new 3000m² Neighbourhood Park south of the industrial area, and in between the motorway designation and Cranford St. This should adjoin the detention basin, to give the park a good setting.
3. A new 4000m² Neighbourhood Park to the south of the detention basin. This park, at 4000m², is relatively large, and is designed to provide for both the proposed residential area, as well as existing residential area to the south that does not have a park close by at present.

It is noted that Rutland Reserve, which adjoins the proposed residential area, is a large park at 22,000m², and will provide park land for future Cranford Basin residents.

A Sports Park is not required within the Cranford Basin area. Councils Recreation Planners recommend that instead, a cash contribution from DCs should be taken to enhance existing Sports Park facilities in adjacent areas. It is noted that Council's Draft Sports Land Plan promotes enhancing existing Sports Parks, rather than creating new additional Sports Parks (refer Appendix 5).

Care needs to be taken to ensure a proposed park can be paid for by the DCs that Council will receive from the developer (pursuant to the DCs policy). It is noted that Council does not have additional funding to purchase additional recreation reserves that may be proposed, and which the DCs cannot provide or/afford.

Social Infrastructure

Cranford Basin area is handily located to the Papanui/Northlands KAC, with the majority of the area being between one and two kilometres of this centre. The area is closer to a KAC than any of the Greenfield sites identified in Map A of the CRPS.

The Papanui/Northlands centre 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. There are several established transport links between the Cranford Basin and this centre, including Grassmere Street and Cranford Street. The Graham Condon Memorial Pool is located on Papanui High School 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 (some of which are shown on Annexure 4). There is also access to private schools including St Bedes, St Andrews and St Margarets.

There are several reserves, playgrounds and sports fields located close to the Cranford Basin, and the proposed stormwater basin will in the long term provide a significant passive recreation facility. There are

also opportunities to extend the Styx green/blue network through to the Basin and connect it to existing reserves creating a recreation network.

The area is well serviced by public passenger transport with the majority of the land being within 500 metres of a bus route. Two such routes (Nunweek and Belfast) run along Cranford Street in the directions of both Papanui/Northlands Mall and the Central City at regular intervals throughout the week. A further bus route (St. Albans/Huntsbury) runs along Grassmere Street which is located immediately to the east of the Basin. This route also provides a link to the Central City and Papanui/Northlands Mall. Other bus routes that operate within close proximity of the Basin include the Orbiter (Philpotts Road) and a number that run along Papanui and Main North Roads providing a link to the northern parts of the city.

SUMMARY/CONCLUSIONS

The Basin, particularly the southern parts, are well located with respect to community infrastructure, public transport and the Papanui/Northlands KAC. The key to urban development in the Cranford Basin is a satisfactory resolution to the four site constraints listed earlier: water/wastewater, subsurface conditions, flooding, and access. Subject to the NORs on the NAE and stormwater being confirmed, the access and flooding constraints can be lifted. There are however significant works needed for water and wastewater infrastructure and the technical advice suggests that development should not occur ahead of improvements to these systems. Importantly however, the proposed works are needed irrespective of whether Cranford Basin is zoned or not, and would not be diverting public infrastructure away from planned expansion areas.

The geotechnical advice is that one or two storey residential development is feasible provided that appropriate construction methods are used. On site investigations are currently underway to provide more detailed geotechnical information on the subject land.

5. KEY RESOURCE MANAGEMENT AND RECOVERY ISSUES

5.1. Strategic Issues:

- Issue 1 What is the resource management justification, if any, for retaining the 'remnant land' rural (ie. land not required for the NAE and stormwater management designations)
-
- Issue 2 If the land is added to the urban area, what is the most appropriate urban land use having regard to:
- Efficient use of land;
 - Existing and projected demand for land; and
 - Land supply, including in neighbouring territorial authorities.
 - Effects on the surrounding environment
- Issue 3 Are there compelling reasons in terms of earthquake recovery to amend the urban boundary so that the subject land can be rezoned. How would the rezoning to urban purposes sit within the strategic planning frameworks provided by higher order documents and its decisions on the strategic directions chapter? E.g. adequate capacity and supply.

5.2. Integration Issues: 31(1) (a) and (b) of the RMA, function of territorial authorities:

- Issue 4 Timing of programmed infrastructure improvements and implications if any for new development
- Issue 5 Integration of decision making processes
- Issue 6 Integration of proposed new area into surrounding environment

5.3. Process Issues that have been identified by the Minister in comments on Draft Stage 2 proposals:

- Issue 7 Remove 'multiple and confusing' zones, especially in the greenfields priority area
Explain how the proposed fits in with other proposals and increase use of non-regulatory methods
Improve Section 32 reports including attention to:
- Economic implications;
 - Clear explanation of the timing, cost and provision of infrastructure to support housing development.
- Issue 8 Consider whether any new objectives need to be made to the Strategic Directions chapter (the Strategic Objectives 3.3.6 and 3.3.7)

5.4. Development Capacity and Supply:

Issue 9- Is the proposal (land rezoning) needed in order to expedite recovery?

5.5. Site Specific Issues:

Issue 10 Access to the proposed area from arterial and local road rework

- Most efficient form of access;
- Effects of new development on local road network;
- Opportunities for new movement routes.

Issue 11 Site constraints - how do they impact on timing and scale of development?

- Ground conditions including liquefaction potential;
- Contaminated land;
- Sewer provision - effects on sewage overflows;
- Ground levels - susceptibility to flooding or ponding;
- Is the CRPS requirement of 15hh / ha realistic or desirable for this site?

Issue 12 Existing land use (e.g. dwellings) and subdivision layout - what constraints or opportunities do they provide?



6. EVALUATION METHODOLOGY

6.1 INTRODUCTION

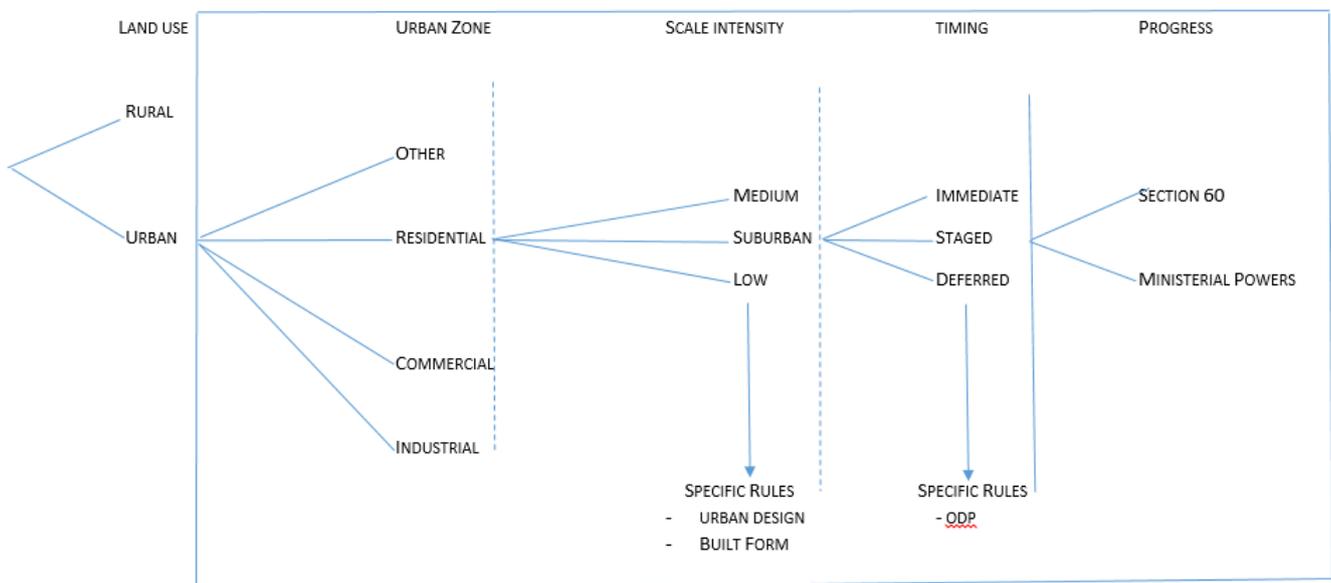
Section 32 requires, as a first step, an examination of the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of the Act. It then requires an examination as to whether the provisions in the proposal are the most appropriate way to achieve the objectives.

For this proposal (the rezoning of parts of the Cranford Basin to Residential) the objective can be stated as being:

- The area of the Cranford Basin not needed for transport and storm water detention and water quality treatment becomes an attractive and integrated residential area.

The alternatives to be considered are appropriately worded objectives that would see the area being left as Rural, or developed entirely or partly for commercial or industrial purposes. Having particular regard to the key issues in 4-5 above the provisions that are most appropriate for achieving the (Residential) objective have three parts: density, timing and process. Subsequent evaluations stem from these.

The methodology this uses a sequential decision approach, as illustrated in Figure 1.



CRANFORD BASIN PROPOSAL - METHODOLOGY FOR DEVELOPING AND EVALUATION ALTERNATIVES AND OPTIONS

Decision 1: Should the Land Remain Rural - Status Quo Alternative (Issues 1,3,8)

In assessing whether this alternative is most appropriate for achieving the purpose of the Act, particular regard has been given to Section 7(b) and the efficient use and development of natural and physical resources, compared to other (urban) alternatives, in the context of earthquake recovery.

The Council commissioned a report from Market Economics Limited to help in answering this question (refer Appendix 6). This report compliments an earlier report by the same company in 2009 that covered the wide rural area in Christchurch City).

The proposed Rural Urban Fringe Zone permits a range of other activities that are not directly dependent on the rural land resource for example:

- Farming
- Rural produce retail
- Rural produce manufacturing
- Residential activity
- Home occupation,
- Conservation activity
- Recreation activity
- Rural tourism activity
- Emergency service facilities
- Veterinary care facility

This is consistent with the definition of Rural Activity in the CRPS:

Rural activities means activities of a size, function, intensity or character typical of those in rural areas and includes:

- *Rural land use activities such as agriculture, aquaculture, horticulture and forestry.*
- *Businesses that support rural land use activities.*
- *Large – footprint parks, reserves, conservation parks and recreation facilities.*
- *Residential activity on lots of 4 ha or more.*
- *Quarrying and associated activities.*
- *Strategic Infrastructure outside of the existing urban area and priority areas for development.*

Decision 2: What is the most appropriate urban land use option (Issues 2 7)

Three urban land use options have been examined and industrial, commercial 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 will not be 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.

Property Economics has been engaged by Christchurch City Council ('Council') to provide a high level synopsis of the potential for part of the Cranford Basin area subject to a potential rezoning (refer Appendix 1) to be developed for commercial and / or industrial activities from a market perspective and within the context of the RMA. Specific consideration will be given in respect of the potential for such activity to generate adverse distribution effects (commercial activity), and the efficient use of the land resource (industrial activity) in the context of growth and recovery of the city post-earthquakes.

In general, and at a high level, there are three core sectors / activity types given consideration in this overview to determine land use efficiencies in the context of the RMA from the potential rezoning of the Cranford Basin from Rural to Urban. These are:

1. Retail

The most appropriate retail (and office) activity and opportunity for the Cranford Basin development is considered to be a relatively small localised convenience commercial offer (retail and commercial services), a centre designed to primarily meet the frequently required convenience necessities of its core localised market. Such a centre would be small in scale and scope, and be approximately 1,000sqm GFA in size. This equates to a net commercial land requirement of 0.2-0.3 hectares, excluding land for any community facilities, urban parks, transport interchange, etc. if deemed appropriate. Note this includes a provision for convenience commercial and professional service activities. From a trading productivity perspective, a centre of this function and scale would be best situated on a main road through the development such as Cranford Street or the proposed new link road through the development to Winters Road. This would enable the centre a better opportunity to 'tap' into the opportunistic drive-by market and increase the economic performance and viability of the centre, and its potential for longer term success.

Stand-alone commercial office activity (or office park) is not considered appropriate (apart from a small scale activity identified above and would form part of any convenience centre). 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.

The net additional retail demand generated from the Cranford Basin development is not considered significant in a retail GFA context. Existing centres in the network would more efficiently meet this demand, apart from the potential for a small scale convenience offer requiring land in the order of 0.2-0.3 ha.

2. Office

No material office development within Cranford Basin is considered efficient or appropriate (particularly in the context of the Central City recovery), apart from a small professional service provision (i.e. doctors, physio, etc.) that is scaled appropriately to the aforementioned retail offering.

3. 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, while additional industrial land demand to 2031 based on projected industrial growth was in the order of 370ha. The analysis indicates there is a significant level of 'fat' in the city's industrial land supply to meet current and foreseeable future requirements. , 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, the Cranford Basin is not considered appropriate with sufficient land provision in Christchurch to satisfy such demand. In terms of light industry and trade based activity, and extension of the existing PlaceMakers trade node has merit, and can 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.

Evaluation

Five criteria have been used to evaluate the three urban options housing recovery, economic recovery, infrastructure capacity, market 'acceptability' and integration with the surrounding environment. These criteria reflect the strategic directions contained in the LURP, CRPS, and operative Strategic Directions of the proposed Replacement District Plan (pRDP).

STRATEGIC OBJECTIVES

Predominant Use	Housing Recovery	Economic Recovery	Infrastructure Capacity	Market Acceptance	Amenity/Community coherence
Industrial	Could make Highsted and Highfields Greenfields areas more attractive	Would attract jobs and investment to the city if development was new investment particularly export orientated. Well located for access for strategic transport.	Minor impact on sewer if 'dry' industry. Access would need to be from Cranford Street.	Already a significant pool of vacant industrial land zoned.	Residential zones on most boundaries. Increased heavy vehicles on local road network.
Commercial	No direct impact	Assuming no distribution effects, would create local employment opportunities.		Distribution effects on local centre.	
Residential	<ul style="list-style-type: none"> • Add up to 600 houses to housing stock • Likely to be above medium house price due to location and development costs • Close to Papanui KAC 	Short term construction jobs.	Need on-site storm water as interim measure. Traffic impact until NAE built.	There is theoretically sufficient vacant land but uncertainties over Highfields could affect supply. Popular location.	Least impact/most compatible with surrounding environment.

Summary

The evidence available to the Council strongly suggests that retaining the subject land as rural is not the most appropriate way of achieving the purpose of the Act, having particular regards to Section 7(b) and Section 7(c) Market Economic Report, supported by the assessment by Property Economics (refer Appendix 7), also discount commercial and/or industrial as potential activities other than small scale (e.g. land) retail outlets.

The overall conclusion is that some if not all the subject land should be recognised as being inside the Priority Area for Servicing in the CRPS and zoned for residential in the Proposed Replacement District Plan. Alternatively, some form of Rural Residential development could be considered. There will be timing issues around infrastructure availability which will need to be addressed through appropriate rules or other methods.

Decision 3: Scale and Intensity of Residential Development (Issues 2, 6)

The LURP and CRPS policy framework seeks urban consolidation and seeks to achieve this through three main policy directives: an 'urban limit', identification of areas for intensification with minimum densities; and requiring greenfields priority areas to meet a minimum density of 30 hh/ha. Cranford Basin is both a potential greenfields priority area and a potential intensification area particularly the Grassmere Street end which is close to a KAC and public transport routes. The traffic assessment also comes out in favour of intensified development for these reasons.

However, there are several matters arising from the technical reports that suggest a lower density residential development would be more appropriate in this location. The geotechnical and soils analysis suggests that high loadings will squeeze out water, causing subsidence and there is anecdotal evidence that the ground is still moving in the area. Both wastewater and transport effects would be mitigated through lower densities. There could even be some parts that are not suitable for further housing intensification.

Rezoning the subject land for low density purposes gives effect to these objectives in part by helping to achieve urban consolidation and a degree of intensification within the existing urban area.. It is not adding to an outward spread of the urban area, which is what urban consolidation seeks to avoid. The most appropriate zone in the Proposed Replacement District Plan is Residential Suburban - Peat Ground Condition Overlay.

Decision 4 - Timing (Issues 4 ,5)

The main consideration for a commencement of building is the availability of infrastructure. Major works are planned for both stormwater (Cranford Basin) and transport (Northern Arterial) but neither of these are reasons for delaying the proposed development once the designations have been confirmed. Stormwater mitigation works including compensatory storage can be included in any proposed subdivision ahead of construction of the Basin, which is yet to be programmed into the LTP. Construction of the Northern Arterial, due to begin in 2017, will help alleviate local network capacity issues but the transport assessment says that a low density residential development will have only a minor effect on existing traffic conditions.

The current state of the wastewater system serving Cranford Basin is a major concern. The Opus Wastewater Assessment advises that consideration should be given to constraining the timing of any potential development at the Grassmere Street vicinity to be in line with or following on from the timing of proposed upgrades at the Grassmere overflow. If the development of the re-zoned area occurs prior to the upgrades, the volume lost at the Grassmere overflow during wet weather is predicted to increase. North east of Cranford Street the advice is that no development should occur prior to Council undertaking further assessment to determine if pipe upgrades are required immediately upstream of PS6 (refer results for specific pipes) and allowing for the implementation of these upgrades to take place if required.

There are other timing issues due to other statutory processes: the LURP Review, and the NoRs on the NAE and stormwater detention areas. Any rezoning for urban activities cannot be implemented until the LURP amends the Projected Infrastructure boundary, and, as alluded to above, the delineation of boundaries (and rezoning of non-residential land) within the Basin must await the decisions on the NoRs.

Options for Stage 3:

- Leave as Rural; only way to give effect to the RPS and not be inconsistent with the LURP
- Deferred zone; or
- Appropriate rule in subdivision chapter e.g. non-complying.

Decision 5 - Process (Issues 3, 9)

Part of the Regional settlement framework requires new peripheral development to be located in identified Greenfield priority areas, and Cranford Basin is not one of these areas. Therefore, rezoning this area to enable urban activities would not be giving effect to objective 6.2.1(1) and 6.2.2(4) and the policies that implement these objectives, principally 6.3.1. The operative Strategic Directions Chapter of the Replacement District Plan seeks to provide a well-integrated pattern of development and infrastructure, a consolidated urban form and high quality urban environment. This is to be achieved within the framework of Chapter 6 of the CRPS. If urban residential development is to be permitted in the subject area the strategic planning framework needs to be amended.

Options:

- Amend CRPS through LURP review;
- Use S27 to amend MAP A outside of the LURP review; or
- Use Section 60 of the RMA to change the CRPS.

It is unlikely that the Crown/Minister will consider adding new land into the urban area, or using Section 27 powers unless it can be shown it is necessary for earthquake recovery. The test for this is not explicit in the LURP however particular regard should be had to Section 3.2.1 of the LURP - What are the land use needs for housing?

Decision 5 - Implementation (Issues 7, 10, 11, 12)

Should the higher order documents be amended to enable urban development there are decisions required as to appropriate provisions to be inserted into the Plan including those relating to site layout, scale and intensity, and integration.



7. GENERAL POLICY DIRECTION OPTIONS

7.1 OBJECTIVE

The land not required for strategic infrastructure in Cranford Basin is developed as residential development compatible with the subsurface ground conditions and integrated into the infrastructure networks and surrounding neighbourhood.

Depending on the precise densities realised, and the nett area available, Cranford Basin is likely to yield between 200 and 1200 houses. The figures assume 40 hectares developable land (net) and five houses per hectare (current living L B at 200m² sections, and 30 hh/ha for medium density). By rezoning the land for residential activities, it will ensure there is an increased supply of land to accommodate future growth and assist in improving housing affordability, consistent with Objectives 1 and 2 of Chapter 14. rezoning of the land within the Cranford Basin for residential development will achieve consolidation and intensification objectives which will reduce the need for further expansion of peripheral areas. It will also convert an area that currently has little or no productive future (as confirmed by landowners) and the centre of the northern part of the city (interrupting connectivity and affecting consolidation) into a well-functioning urban form, improving people's connectivity and accessibility while supporting the Key Activity Centre of Papanui nearby, consistent with Objective 3.6.2 of the pRDP.

Development would be guided through an Outline Development Plan with an appropriate rule in the Subdivision Chapter requiring development to be in general accordance with that plan.

7.2 INTEGRATION (TO BE COMPLETED)

With NAE

With stormwater basin

8. EVALUATION OF OBJECTIVES

Section 32(1)(a) of the RMA requires the Council to evaluate the extent to which the objectives are the most appropriate way to achieve the purpose (Section 5) of the Act.

Evaluation of Proposed Objective 1:

The land not required for strategic infrastructure in Cranford Basin is developed as residential development compatible with the subsurface ground conditions and integrated into the infrastructure networks and surrounding neighbourhood.

The overall economic effects associated with the up-zoning is likely to come from three sources:

1. The efficiency gains associated with good urban form –transport savings accruing to households and better servicing costs (on a per capita basis).
2. The construction phase - a set of positive economic impacts will be felt.
3. A set of ongoing effects arising from household demand for goods and services.

Combined, the positive and lasting effects associated with these three sources are likely to outweigh the potential value of the associated land resource.

In terms of Section 7(c) adjoining residential areas will have their outlook affected and may consider the loss of rural zoning an adverse effect. However property owners should not have the expectation that this amenity is permanent. Furthermore, the change of use away from agriculture will have positive effects on amenity - the Council is aware of historical issues concerning noise and smell associated with agricultural activities in the Basin.

Alternative:

To retain the productive potential of the rural land between the stormwater basin and surrounding residential area.

The high level overview of the proposed changes in the Cranford Basin area suggests that moving from the current agriculture activities to urban activities (particularly residential) would be interpreted as moving the land to a higher economic use. The study area has seen little (active) activity since 2000 with only two registered rural industry-type firms in the area. Agriculture, and rural industry related employment is put at less than 2 percent, down from around 6 percent in 2000. This suggests that area has not been actively used for the past 15 years. The potential reasons for this are diverse and could range from agricultural-economic constraints (e.g. soil/drainage issues) to real estate market activities (e.g. land banking). In light of the low activity in the land over the past 15 years, including a period of high growth, it is arguable that the overall potential of the land is probably limited as it would have been taken up if financially viable (with a sufficient return). This means that a move to urban use is more likely to promote the purpose of the Act, having particular regard to Section 7 (b) the opportunity costs (of losing the production potential) being likely to be small.

9. EVALUATION OF PROVISIONS

The methods for including provisions in the District Plan are evaluated below. It is noted that while some of these options are currently inconsistent with the LURP (which does not specify this location as an area for urban development) these options are presented in anticipation of the LURP being amended to include the Cranford Basin as an urban area.

PROVISIONS (POLICY, RULE, METHOD) <u>MOST APPROPRIATE WAY</u> TO ACHIEVE THE OBJECTIVES
<p>Relevant objectives:</p> <p><u>Chapter 3</u></p> <p>Objective 3.3.6</p> <p>A well-integrated pattern of development and infrastructure, a consolidated urban form, and a high quality urban environment that:</p> <p>(a) Is attractive to residents, business and visitors; and</p> <p>(b) Has its areas of special character and amenity value identified and their specifically recognised values appropriately managed; and</p> <p>(c) Provides for urban activities only:</p> <p>(i) within the existing urban areas; and</p> <p>(ii) 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</p> <p>(d) 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:</p> <p>(i) 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</p> <p>(ii) in those parts of Residential Greenfield Priority Areas identified in Map A, Chapter 6 of the Canterbury Regional Policy Statement; and</p> <p>(iii) in suitable brownfield areas; and</p> <p>(e) Maintains and enhances the Central City, Key Activity Centres and Neighbourhood Centres as community focal points; and</p> <p>(f) Identifies opportunities for, and supports, the redevelopment of brownfield sites for residential, business or mixed use activities; and</p> <p>(g) Promotes the re-use and re-development of buildings and land; and</p> <p>(h) Improves overall accessibility and connectivity for people, transport (including opportunities for walking, cycling and public transport) and services; and</p> <p>(i) Promotes the safe, efficient and effective provision and use of infrastructure, including the optimisation of the use of existing infrastructure; and</p> <p>(j) Co-ordinates the nature, timing and sequencing of new development with the funding, implementation and operation of necessary transport and other infrastructure.</p> <p><u>Chapter 14</u></p> <p>Objective 1</p> <p>a. An increased supply that will:</p> <p>i. enable a wide range of housing types, sizes, and densities;</p> <p>ii. meet the diverse needs of the community in the immediate recovery period; and longer term, including social and temporary housing options; and</p>

iii. assist in improving housing affordability.

Objective 2

- a. Short-term residential recovery needs are met by providing opportunities for:
- i. an increased supply throughout the lower and residential medium density areas;
 - ii. higher density comprehensive redevelopment of sites within suitable lower and residential medium density areas;
 - iii. medium density comprehensive redevelopment of community housing environments; and
 - iv. new neighbourhood areas in greenfields priority areas.

Objective 3

- a. A distribution of different density areas with:
- i. increased density of residential development in and around the Central City and identified commercial centres where there is ready access to a wide range of facilities, services, public transport, parks and open spaces;
 - ii. limited additional infill housing in other existing suburban areas to maintain a low density, open and landscaped environment;
 - iii. a mix of housing densities in New Neighbourhood areas;
 - iv. medium density residential development in suitable brownfield areas and on larger suburban residential sites where external impacts on the surrounding areas can be mitigated; and
 - v. integrated provision of infrastructure.

Objective 5

- a. High quality, sustainable, residential neighbourhoods which are well designed, have a high level of amenity, and enhance local character.

Provision(s) most appropriate	Effectiveness and Efficiency
Option 1: Rezone the subject land 'Residential Suburban'	<p>1. EFFECTIVENESS</p> <p>The zone achieves consolidation and intensification objectives and will become a well-functioning and utilised area in contrast to an area of little or no productive value.</p> <p>The suburban zoning will maintain a low density, open and landscaped environment, consistent with the surrounding land use and Objective 3. At 15hh/ha the development would yield between 600 and 700 houses Proposed stormwater, wastewater and roading infrastructure will need to be integrated with existing networks, where practicable.</p> <p>The proposed plan subdivision provisions will guide appropriate subdivision such that it achieves an integrated pattern of development and urban form, to ensure a high quality, comprehensively planned neighbourhood that is connected to the wider environment. This will promote appropriate design and development which does not exceed capacity of the underlying land and infrastructure constraints. This will ensure that these matters have been considered and are in place prior to development.</p>

	<p>Many of the proposed plan provisions for the residential suburban zone are intended to deal with amenity based issues – site density, building setbacks, landscaping, etc. It is intended that these rules will apply and direct development so that it is appropriate in terms of development potential of the area and that it is high quality, well designed, has a high level of amenity and will enhance local character, consistent with Objective 5.</p> <p>Existing subdivision and residential suburban provisions can effectively guide development.</p> <p>2. EFFICIENCY</p> <p>Benefits</p> <ol style="list-style-type: none"> 1. Provides certainty for future use of the land within the Cranford Basin, which is anticipated to become an urban area. 2. Enables alignment between the planning and funding of infrastructure with land use. 3. Public benefits through increased housing choice and supply. 4. The rezoning provides private benefits for the economic and social well-being of landowners due to increased land values and opportunities for further development of their properties. 5. Private benefits through having housing close to large open area once stormwater basin is developed for passive recreation. 6. Public benefits accrue through a more efficient utilisation of the urban land resource, and through potential transport savings from being close to key services. 7. Avoids landowners having to apply to rezone their land, removing unnecessary costs of a planning process. <p>Costs</p> <ol style="list-style-type: none"> 8. 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. 9. Costs borne by developers / landowners to develop land which has constraints in relation to land conditions, wastewater and access.
<p>Options less or not as appropriate to achieve the objectives and policies:</p>	
<p>Option 2: Rezone as a 'New Neighbourhood' Area</p>	<p>EFFECTIVENESS AND APPROPRIATENESS (in addition to or different from Residential Suburban)</p> <p>This option also rezones the land for residential activities, ensuring there is an increased supply of land to accommodate future growth and assist in improving housing affordability, consistent with Objectives 1 and 2. Yields could be higher than for RS although</p>

	<p>there is no obligation to go beyond 15hh/ha but this option offers more flexibility in lot size and housing type eg 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. It is applicable to medium to large Greenfield sites which offer choice of residential options to meet different household types and sizes with a Comprehensive Development Process. Typically, this approach requires the preparation of a Neighbourhood Plan, which as a minimum must cover 8ha.</p> <p>EFFICIENCY (in addition to or different from Residential Suburban)</p> <p>Benefits</p> <ul style="list-style-type: none"> • Supports a comprehensive approach to the development of greenfield areas that potentially provides a greater range of housing typologies. <p>Costs</p> <ul style="list-style-type: none"> • May cause short term issues in terms of infrastructure capacity resulting from additional lots / high density, particularly sewer and transport. • Requires more comprehensive planning which requires additional consenting.
<p>Option 3 – Rezone as ‘Future Urban Development Area’ (FUDA)</p>	<p>EFFECTIVENESS AND APPROPRIATENESS (in addition to or different from Residential Suburban)</p> <p>The FUDA zoning is a holding zone to hold future residential land in transition to a future residential zone until required for urban residential growth. The FUDA zoning will not free up land for residential development in the short term, and is an option if there is insufficient information on eg. ground conditions, or infrastructure constraints that are unlikely to be overcome in the immediate to short term.</p> <p>EFFICIENCY (in addition to or different from Residential Suburban)</p> <p>Benefits</p> <ul style="list-style-type: none"> • The rezoning provides for the economic and social well-being of landowners due to increased land values and opportunities for further development of their properties. • Enables better information relevant to future land use and infrastructure to assist with the integration and coordination of the development. • Residents/ property owners adjoining the area retain benefits of rural outlook and level of amenity that currently exists on the rural-urban fringe.

	<p>Costs</p> <ul style="list-style-type: none"> • Costs to landowners having to apply for resource consent to undertake 'rural' uses. • The subject land would be required to go through a plan change process to achieve a residential zoning in future. • Does not free up land for immediate residential development, therefore there will be a cost to landowners / developers due to lost opportunities in the short term.
<p>Option 4 - Residential Medium Density Zone</p>	<p>EFFECTIVENESS AND APPROPRIATENESS (in addition to or different from Residential Suburban)</p> <p>This option potentially generates around 1200-1500 houses and is the option that most closely aligns with the urban growth strategy in terms of intensifying around KACs. It would also generate the most pronounced change to the landscape and character of the area, and have the greatest impact on what are considered to be fragile ground conditions, and the transport network.</p> <p>EFFICIENCY (in addition to or different from Residential Suburban)</p> <p>Benefits</p> <ul style="list-style-type: none"> • 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 generate higher rate revenues. • Long term transport efficiencies through opportunities to reduce private vehicle use and increase public transport patronage. <p>Costs</p> <ul style="list-style-type: none"> • Higher private and public costs associated with house building and in ground infrastructure. • Significant risk from effects of intensive development affecting surrounding properties. • Cost to landowners / developers due to lost opportunities for further development of their properties.
<p>Option 5 - Residential Suburban Density - Ground Constraint Overlay - Zone</p>	<p>EFFECTIVENESS AND APPROPRIATENESS (in addition to or different from Residential Suburban)</p> <p>Will potentially yield 200-250 houses. Low density zoning in this locality will contribute 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 soils and water conditions. This option will moderate effects on sewerage overflows and impacts on the road network. It provides</p>

	<p>a typology of housing types normally associated with edge of city locations or rural areas.</p> <p>EFFICIENCY (in addition to or different from Residential Suburban)</p> <p>Benefits</p> <ul style="list-style-type: none"> • Maintains a less modified outlook and higher levels of amenity for adjoining residents / property owners. • Private benefits for existing land owners - these types of sections have been historically sought after in this area. <p>Costs</p> <ul style="list-style-type: none"> • Does not achieve consolidation objectives. • Opportunity cost to landowners / developers due to lost opportunities for further development of their properties.
<p>Option 6 - Rural Residential</p>	<p>EFFECTIVENESS AND APPROPRIATENESS</p> <p>Rural residential is likely to yield around 50-100 houses. It will have the least adverse effect on the environment and infrastructure and least risk from a geotechnical perspective. This zone would require a change the CRPS Policy 6.3.9 (1).</p> <p>EFFICIENCY (in addition to or different from Residential Suburban)</p> <p>Benefits</p> <ul style="list-style-type: none"> • Would enable some development to occur with minimal impact on infrastructure capacities. <p>Costs</p> <ul style="list-style-type: none"> • Public cost - makes the least efficient use of the land resource of all the residential options in terms of use of space active transport opportunities and infrastructure. • Private opportunity costs to landowners.
<p>Option 7 – Maintain Rural zoning</p>	<p>EFFECTIVENESS AND APPROPRIATENESS</p> <p>This is not an effective nor efficient option for achieving the residential and strategic objectives. However some of the land outside of the proposed designated areas may not be suitable for residential development and may need to be left as Rural in the short term at least.</p> <p>This option is the only option that is consistent with the policy direction of the CRPS.</p>
<p>Risk of Acting or Not Acting</p>	
<p>(i)</p> <p>(ii)</p>	<p>Zoning the land Residential Suburban through the DPR does not give effect to the policy direction outlined in the CRPS because at this point in time the Cranford Basin is not considered to be an existing urban area or a Greenfield priority area.</p> <p>A risk of not acting is that the benefits associated with the proposal, assist with achievement of the consolidation and intensification objectives and a well-functioning and utilised area will not be</p>

- achieved and it will remain an area of little or no productive value.
- (iii) A rural zoning is not considered to be the most appropriate way to achieve the purpose of the Act, however it is the only option which meets the higher order RPS, which does not allow for new urban activities outside of existing urban areas or Greenfield Priority areas.

Summary

Each of the land use options assessed has its own costs and benefits. However, in terms of the purpose of the Act, on balance Option 5 has the least effects on the environment is the most appropriate option on the information available should the case for rezoning the subject land be accepted.

10. CONCLUSION

The rebuilding and recovery of Greater Christchurch relies on appropriate locations, quantity, types, and mixes of residential and business development to provide for the needs of the community. Consolidation of existing urban settlements is the form of development most likely to minimise the adverse effects of travel for work, education, business and recreation, minimise the costs of new infrastructure and avoid adverse effects of development on sensitive landscapes, natural features and areas of high amenity. Greater intensification within Christchurch's urban area will reduce the need for further expansion of peripheral areas.

The Cranford Basin is surrounded by existing urban development and Greenfield priority areas for urban development, although it is not identified as an urban area. In relation to the consolidation objectives of the Regional Policy Statement, urban development within the Cranford Basin could contribute to the achievement of the intensification targets as a proportion of overall growth of Greater Christchurch and avoid the need for expansion of peripheral areas. However, development within the area must be appropriate. The recognition of existing constraints in terms of natural and physical resources is a critical part of successful growth management. Very low densities are the most appropriate means of mitigating hazard risk in this location

Rezoning the areas not to be designated for stormwater and roading purposes as residential will assist with the achievement of the consolidation and intensification objectives and will become a well-functioning and utilised area in contrast to an area of little or no productive value.

The suburban zoning will maintain a low density, open and landscaped environment, consistent with the surrounding land use and Objective 3. With the Peat Constraint Overlay this will potentially yield 200-250 houses. Low density zoning in this locality will contribute to urban consolidation but will not achieve the degree of intensification (and associated transport benefits) sought in the vicinity of KACs. However, the application of this overlay is the most effective option for reducing risks of subsidence and other unforeseen changes to soils and water conditions. This option will moderate effects on sewerage overflows and impacts on the road network. It provides a typology of housing types normally associated with edge of city locations or rural areas.

The proposed plan subdivision provisions will guide appropriate subdivision such that it achieves an integrated pattern of development and urban form, to ensure a high quality, comprehensively planned neighbourhood that is connected to the wider environment. This will promote appropriate design and development which does not exceed capacity of the underlying land and infrastructure constraints. This will ensure that these matters have been considered and are in place prior to development.

Many of the proposed plan provisions for the residential suburban zone are intended to deal with amenity based issues – site density, building setbacks, landscaping, etc. It is intended that these rules will apply and direct development so that it is appropriate in terms of development potential of the area and that it is high quality, well designed, has a high level of amenity and will enhance local character, consistent with Objective 5.

However, while residential zoning is considered to be the most appropriate way to achieve the purpose of the Act; the proposal through Stage 3 of the DPR is to zone the area within the Basin as Rural Urban Fringe, in order to give effect to the policy direction of the CRPS, and not be inconsistent with the LURP.

11. SUMMARY OF CONSULTATION

(TO BE COMPLETED)

1. Set out a timetable of consultation undertaken.
 - a. Sublist if needed

Table 4: Summary of Feedback from Public Consultation (Month – Month 2014)

	ISSUE	VIEWS EXPRESSED	HOW OFTEN?	COMMENT	RECOMMENDED RESPONSE
1	e.g. Parking	a.			
		b.			
		c.			
2	e.g. Traffic	a.			
3	e.g. Non-District Plan Review matters	a.			

2. Additional discussion as needed. Remember to number tables and figures.
3. More paragraphs
 - a. Sublist if needed

12. SUMMARY OF ISSUES RAISED IN SUBMISSIONS

(TO BE COMPLETED)

This should be part of the s42A report and either a reference to that report and/or a summary of main issues

13. SUMMARY OF ANALYSIS IN s42A STAFF REPORT

(TO BE COMPLETED)

Either a reference to the s42A report and/or a summary of the analysis.

14. SUMMARY OF EVIDENCE PRESENTED AT HEARING OF SUBMISSIONS

(TO BE COMPLETED)

Either a reference to the Hearing Decisions Report and/or a summary of the evidence.

15. COUNCIL DECISIONS

(TO BE COMPLETED)

Either a reference to the Decisions Report and/or a summary list of the decisions made.

15. BIBLIOGRAPHY

(TO BE COMPLETED)

1. Material, reports information, data used to develop the chapter and review provisions.

APPENDIX 1: KEY STRATEGIC DOCUMENTS

The following documents have largely directed the preparation of this Plan Review and influenced its content:

	Document	Relevant provisions	How the rezoning will take into account/give effect to the relevant provisions
a.			
b.			
c.			
d.			
e.			
f.		.	

APPENDIX 2: LINKAGES BETWEEN PROVISIONS

(TO BE COMPLETED)

Linkages and grouping of provisions under proposed Policy Direction

Issue	Directions	Objectives	Policies	Rules

List of Appendices

- Appendix 1 - Cranford Basin Geotechnical Desktop Report
- Appendix 2 - Cranford Basin Rezoning - Wastewater Review
- Appendix 3 - Cranford Basin Rezoning - Water Supply
- Appendix 4 - Cranford Basin Proposed Rezoning Transport Assessment
- Appendix 5 - Cranford Basin Rezoning Proposal - Parks Planning Assessment
- Appendix 6 - Cranford Basin Rezoning - Initial review of economic effects
- Appendix 7 - Cranford Basin Rezoning - Commercial Potential Overview
- Appendix 8 - Residential vacant land and take up
- Appendix 9 - Projection of land take up to 2028
- Appendix 10 - Land Availability Report.