Greater Christchurch Partnership

Te Tira Tū Tahi
One Group, Standing Together

Our Space 2018-2048: Greater Christchurch Settlement Pattern Update

Greater Christchurch Future Development Strategy Hearings Panel
SEPARATELY CIRCULATED VOLUMES OF SUBMISSIONS

Date: Monday 25 February 2019
Time: 10.30am
Venue: Council Chamber, Environment Canterbury, 200 Tuam Street, Christchurch

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Our Space 2018-2048 - Submitters Hearing Schedule for MONDAY 25 February

Please note that there may be some changes to this schedule as commitments change and some unplanned rescheduling may be required. We apologise in advance for any inconvenience this may cause.

Schedule Updated 17 February 2019

Day 1 [Monday 25 Feb] Environment Canterbury Council Chamber			
Time	**Submitter Number**	**Submitter/Presenter**	**On behalf of…**
10.40	*Presentation of Officers Report*		
11.00			
11.20			
11.40	#21	Fiona Aston	Lionel Green
12.00	#25	Fiona Aston	Barry Gallagher + David Tipple
LUNCH [12.20]			
13.20	#38	Fiona Aston	Cathedral City Developments
13.40	#43	Fiona Aston	Red Spur Limited
14.00	#47	Fiona Aston	Foddercube Products Ltd
14.20	#56	Fiona Aston	Graeme + Joy McVicar
14.40	#59	Fiona Aston	Ernst Frei
15.00	#15	Warren Lewis	Cashmere Park Trust
PMT [15.20]			
15.40	#52	Dean Chrystal	Woolworths NZ Ltd
16.00			
16.20	#53	Dean Chrystal	Cockburn Family
16.40	#40	Nicola Rykers	Ben + Sally Tothill
17.00	#35	Hamish Anderson	RJ Civil Construction

Submission No: 021

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

Lionel Green

November 2018

Greater Christchurch Partnership

Submitter Details

Name: Lionel Green
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

I wish to speak at the hearings.
Preferred location: Christchurch City
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background and Site

The submitter, Lionel Green ('the Submitter'), owns a 4 ha property at 738 Marshlands Road Christchurch ('the Site'). The character of the surrounding area is smaller properties, mostly below 4 ha (see quick map attached as **Appendix A**).

The Submitter wishes to subdivide the Site to create 2 x appx 2 ha lots each with a dwelling, in keeping with the surrounding pattern of subdivision. The Applicant engaged a planning consultant to prepare a draft land use and subdivision application (June 2017). This included an examination of the surrounding Rural Urban Fringe zoned residential allotments, and noted that the average lot size was 1.9 ha. The area is made up of smaller allotment sizes with the majority being between 0 - 2 ha in size, with the next majority being between 2ha - 4 ha, as shown in the table below:-

Table 1: Lot size of surrounding residential properties within the Rural Urban Fringe Zone.

Property	Lot Size (ha)	Property	Lot Size (ha)
740 Marshland Rd	2.4	700 Marshland Rd	3.1
744 Marshland Rd	2	750 and 754 Marshland Rd	7.9
726 Marshland Rd	1	760 Marshland Rd	0.8
722 Marshland Rd	3.5	744 and 744A Marshland Rd	0.1
706 Marshland Rd	2.8	788 Marshland Rd	4.0
720 Marshland Rd	2.9	790 Marshland Rd	0.1
704 Marshland Rd	3.0	721 Marshland Rd	0.4
715 Marshland Rd	0.7	1 Chenery Ave	0.1
705 Marshland Rd	0.7	56 Farrells Rd	0.8
693 Marshland Rd	0.5	66 Farrells Rd	0.8
691 Marshland Rd	1.6	72 Farrells Rd	1.0
694 Marshland Rd	4.0	69 Turners Rd	4.0
692 Marshland Rd	5.3	73 Turners Rd	4.0
241 Guthries Rd	0.1		
29 Guthries Rd	0.1	**Average Lot Size**	**1.92**

The Submitter's plans for his property have 'stalled' due the Christchurch City Council's interpretation of District Plan Policy 17.2.2.7 as below. This gives effect to the Canterbury Regional Policy Statement (CRPS)[1] which seeks to avoid urban activities outside the Existing Urban Area and Greenfield Priority Areas.

Policy17.2.2.7 - Density and distribution of residential units
Ensure a density and distribution of residential units that:..
(v) avoids creating new sites less than 4ha

Urban activities are defined in the CRPS as including residential units (except rural residential activities) at a density of more than one household unit per 4 ha of site area.

The proposal has been the subject of a pre-application meeting (see **Appendix B**). Council's advice was that whilst the effects of the proposal could be minor, the District Plan objectives and policies *'aren't so easily overcome'.* The specific policy of concern is Policy 17.2.2.7.

[1] CRPS Objective 6.2.1 and Policy 6.3.1

Minor development outside Greenfield Priority Areas and the Existing Urban Area

An unfortunate consequence of a fixed rural/urban boundary line in the CRPS and on **Our Space** Fig 16 and an associated objective and policy framework which requires 'avoidance' of urban activities outside that, is there is no flexibility to respond to minor anomalies, or minor development proposals which are not of regional significance and do not offend the overall urban growth management approach of **Our Space** and the CRPS.

The Submitter's proposal is a case in point. The **Our Space** urban growth management approach is intended to provide certainty as to where development will take place to enable planning for and development of infrastructure required for projected urban growth; to protect key strategic infrastructure such as strategic transport networks; and to ensure development is appropriately located in terms of potential environmental effects. Minor proposals such as the Submitter's proposal to create one additional rural lifestyle site will have no effect whatsoever on this overall strategy. The status of the proposal will still be non complying under the District Plan – it will not 'open the floodgates' for undersize rural subdivision, but will enable the specific circumstances to be assessed on their merits, including against the Resource Management Act 1991 s105D 'threshold tests' ie. the proposed activity is not contrary to the relevant plan objectives or policies; or the adverse effects of the activity on the environment are minor. The current approach effectively precludes this, treating proposals as if they are 'prohibited' even though they do not – and clearly should not – have this status.

Suggested policy wording is included in the Relief Sought below to address this issue.

Relief Sought:

1. Amend **Our Space** and CRPS to address the matters raised in this submission i.e. need for flexibility to respond to minor zoning anomalies, or minor development proposals which do not offend the overall urban growth management approach of Our Space and the CRPS. We suggest this should include:-

   6.2 Schedule of future work

   Amend 8 (page 34) as follows:-

   Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement which provides flexibility to

respond to minor zoning anomalies, or minor development proposals which do not offend the overall urban growth management approach of Our Space and the CRPS. Suggested amendments are shown below (in bold and underlined):-

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 **or having only minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.1 Development within the Greater Christchurch area
In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS **or having minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.7 Residential location, yield and intensification
In relation to residential development opportunities in Greater Christchurch:

7. Subject to Policy 5.3.4, residential greenfield priority area development shall occur **generally** in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.

2. Such other consequential, additional or other amendments to **Our Space** and the CRPS and other documents, and any other actions, to be consistent with and give effect to the intent of this submission.

Reasons for Relief Sought:-

1. For the reasons set out above under and under the responses to the Submission Form questions below.
2. The amendments sought will enable the Submitter use his land in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).
3. **Our Space** as notified proposes an urban growth management approach, in particular as it affects the Submitter's land, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

Minor proposals such as the Submitter's will have no impact on the **Our Space** and CRPS housing growth strategy, but our prevented by it because of the very rigid provisions contained in these documents as outlined and discussed above. This is entirely

Question 2:

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.

Do you agree with this approach and why?

Response:

No comment.

Question 3:

Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.

What elements should be included in this action plan?

Response:

No comment.

Business Growth

Question 4:

Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.
Do you agree with this approach and why? What further measures would support such development?

Response:
No comment.

Question 5:
The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.
Do you agree or disagree this is sufficient and in the right location and why?

Response:
No comment.

Growth needs
Question 6:
The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.
Do you agree or disagree with this evidence base and why?

Response:
No comment.

Transport and other infrastructure
Question 7:
Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent

transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.
Do you agree or disagree with this approach and why?

Response:
No comment.

Question 8:
Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.
Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:
No comment.

Other
What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

Response:
No further comments other than as noted above.

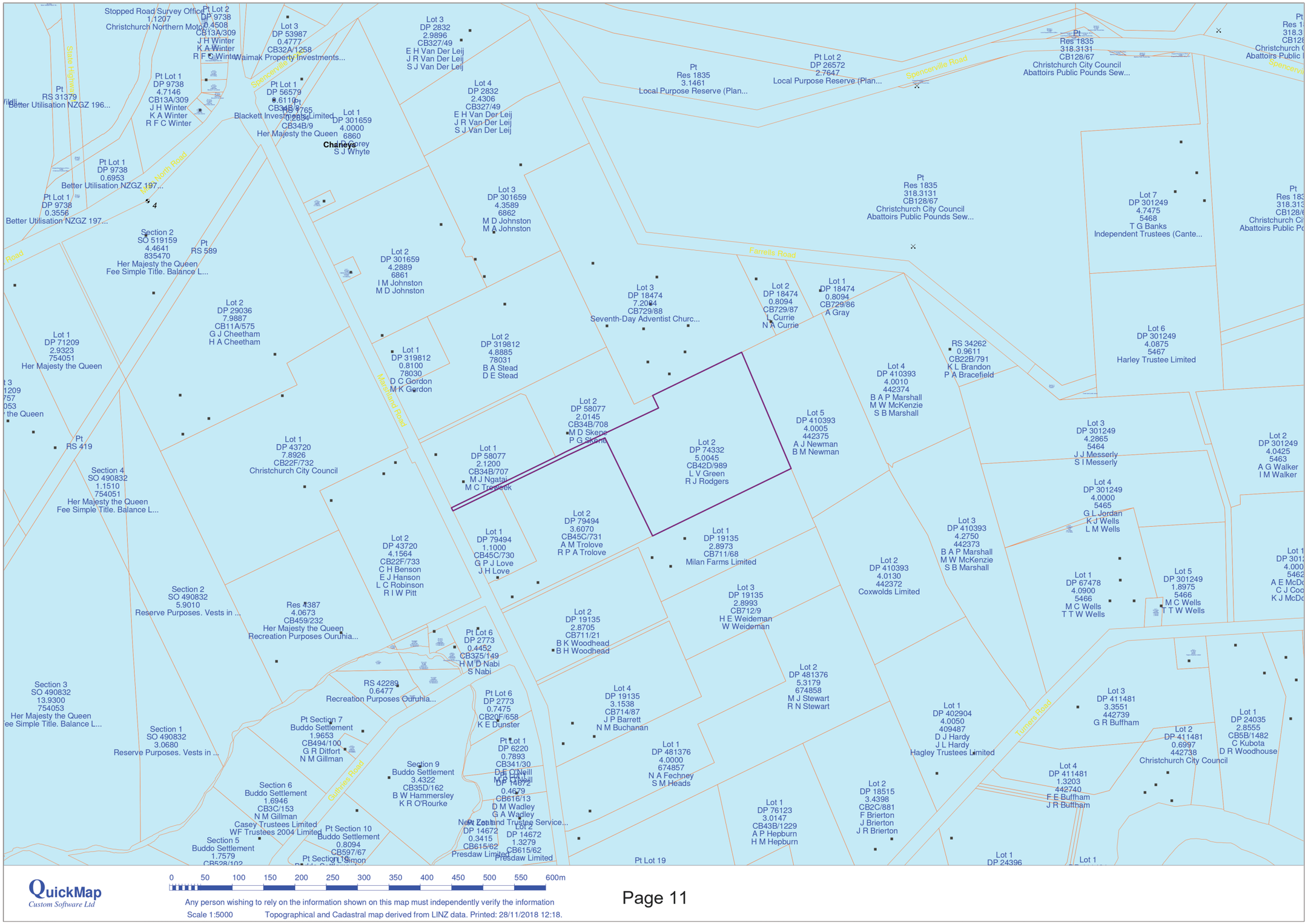
Appendices

Appendix A: Quick map

Appendix B: Pre-application meeting minutes

Appendix A

Quick map



QuickMap
Custom Software Ltd

Any person wishing to rely on the information shown on this map must independently verify the information

Scale 1:5000 Topographical and Cadastral map derived from LINZ data. Printed: 28/11/2018 12:18.

Appendix B

Pre-application meeting minutes

Pre-application Meeting

Meeting Record

Site Address:	738 Marshland Road		
Project Description:	Proposed project is subdivision consent		
Date	25th May 2018	**Pre-application #**	PRE40006472
Meeting Start Time:	2:00pm	**Meeting Finish Time:**	2:15pm

Council Attendees

Name:	Role:	Contact Information:
Ryan Brosnahan	Planner	Ryan.brosnahan@ccc.govt.nz

Applicant and Agent Attendees

Name:	Role/Company:	Email Address:
Lionel Green	Owner	
Andrew Schulte	Resource Management Solicitor	andrew.schulte@cavell.co.nz

Meeting Discussion and Action Points

Meeting Record

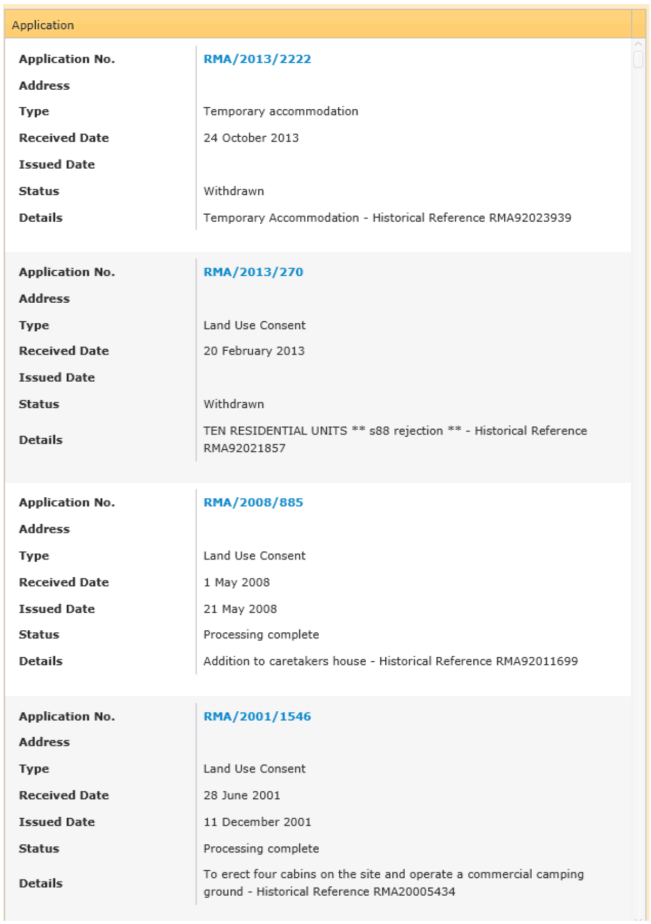
Applicant

- Originally submitted a land use application so that the property could be subdivided, however change took place during this application process when the city plan became the district plan, and the application was told not to go any further
- The land is not economical unless used for agricultural purposes hence the need to subdivide
- The initial proposal was to split the property in half and have 2 hectare site, the new proposal would to allow the land with the house to be 1.5 hectare and the remaining lot would be 3.5 hectare getting it closer to the 4 hectare requirement
- There's a development on the boundary that has 2 large meeting halls and roughly 300 people living on the site, its high density, would assume any resource consent was non-notified, with this there, the subdivision and the house would be in keeping with the density of the area
- Is there potential to cross zone to allow the subdivision
- There is a mixture of smaller lots around this site, subdivision to smaller lots would be in keeping with the surrounding area
- Contamination report has already been done and the site checked

Ryan Brosnahan

- Original application had vetted by Principal Planner Paul Lowe who spoke with the agent.
- The issue is that the subdivision doesn't meet a specific policy within the district plan, which states to avoid creating lot sizes smaller than 4 hectares (17.2.2.7 Policy – Density and distribution of residential units)
- Council's position is very strong and that any proposal for sites less than this size is unlikely to be supported based on the policy. Case law also states that where a policy in a plan is so explicit, it cannot be balanced with less explicit policies.
- I have checked about whether or not the second option of reducing the lot size of the existing dwelling and increased the vacant lot. I can confirm that this would not likely avoid the policy
- Examples provided by the duty planner about subdivsions granted for sites less than 4ha were very unique and were cross zoned sites.
- If council were to grant consent to subdivide a site less than 4ha, it could set a precedent.

- The effects basis could be only minor due to the character of the area, however the objective and policies aren't so easy to overcome. Smaller surroundings sites have been done historically.
- With respect to the adjoining site at 20 Farrells Road, they have had various resource consents (see below). Similarly for building consents, they have had various temporary marquees over the years. The site is also zoned Rural Urban Fringe.



Application

Application No.	**RMA/2013/2222**
Address	
Type	Temporary accommodation
Received Date	24 October 2013
Issued Date	
Status	Withdrawn
Details	Temporary Accommodation - Historical Reference RMA92023939
Application No.	**RMA/2013/270**
Address	
Type	Land Use Consent
Received Date	20 February 2013
Issued Date	
Status	Withdrawn
Details	TEN RESIDENTIAL UNITS ** s88 rejection ** - Historical Reference RMA92021857
Application No.	**RMA/2008/885**
Address	
Type	Land Use Consent
Received Date	1 May 2008
Issued Date	21 May 2008
Status	Processing complete
Details	Addition to caretakers house - Historical Reference RMA92011699
Application No.	**RMA/2001/1546**
Address	
Type	Land Use Consent
Received Date	28 June 2001
Issued Date	11 December 2001
Status	Processing complete
Details	To erect four cabins on the site and operate a commercial camping ground - Historical Reference RMA20005434

Invoicing

Name	Time			Amount Due
	PRE	MEETING	POST	
Ryan Brosnahan	0.45	0.25	0.50	$222.00
Council Administration Officer	0.25	0.25	0.25	$90.00
			Amount Due	**$312.00**

Pre-application Meeting

How to pay your invoice:

You can use internet banking to pay Pre Application Meeting fees. Please note that all payments will be credited to our account on the next business day. Any payment made without your details below may take some time to be lodged against the correct account. *Please note this will show as "RENT" in the description.*

Our details are:

Bank: Bank of New Zealand
Account Name: Christchurch City Council
Account Number: 02 0800 0044765 003

The information required to identify your payment:

Particulars: Name of Customer
Code: PRE Number (you will find this on your invoice or above)
Reference: Invoice Number

NOTE:

Preliminary application advice is given without prejudice on the basis of information available at the time of the meeting. Please note that the provision of further information or changes in project scope may impact on this advice.

For reference, please include your Preliminary Application number when applying for a consent (e.g. PRE4000XXXX)

Submission no: 025

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

Barry Gallagher and David Tipple

November 2018

Greater Christchurch Partnership

Submitter Details

Name: Barry Gallagher and David Tipple
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

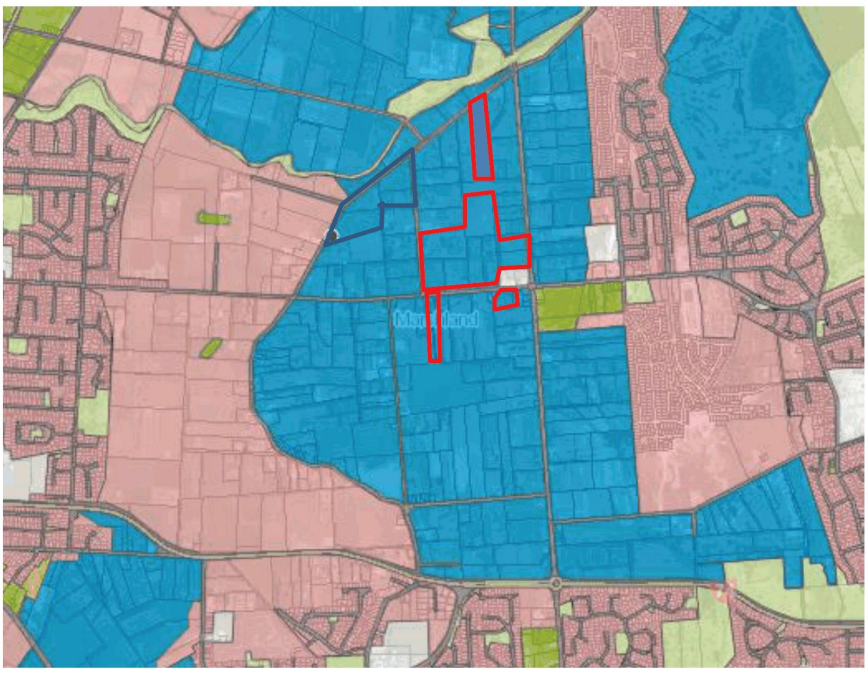
We wish to speak at the hearings.
Preferred location: Christchurch City
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background and Site

The submitters are Barry Gallagher and David Tipple ('the Submitters'). Barry Gallagher and David Tipple own the following relevant lots which have a combined area of 42.50ha (see quick map attached **Appendix A).**

704 and 726 Hawkins Road: Lot 34 and 35 DP 875
51/55 Quaids Road: Lots 22 and 23 DP 875
469 Marshand Road: Lot 12 DP875 and Lot 13 DP 875
327 Marshland Road: Lot 15 DP 875
317 Prestons Road: Lot 16 DP 875
305 Prestons Road: Pt Lot 17 DP 875
2 Quaids Road: Pt Lot 17 DP 875
18 Quaids Road: Lot 18 DP 875
30 Quaids Road: Lot 19 DP 875 and Lot 1 DP 43239
776 Hawkins Road: Lot 2 DP 305507
328 Prestons Road: Pt Lot 50 DP 875
290 Prestons Road: Pt Lot 1 DP 51167

The Gallagher and Tipple properties are is located between the Highfields and Prestons residential subdivisions at north east Christchurch. Highfields is located west of Hawkins Road and remains undeveloped south of Prestons Road. North of Prestons Road development includes a new retirement village and a Suburban Estates subdivision is underway. Prestons is largely developed and located east of Marshlands Road. The Gallagher and Tipple land is within an area of remaining rural zoned land between these subdivisions bounded by QEII Drive to the south and Hawkins Road and Lower Styx Road to the north as shown on the Canterbury Maps planning map below. The area is characterised by 4 ha and smaller titles which are for the most part used for rural lifestyle purposes, being too small for any realistic economic farming use.



Residential Zone

Rural Zone

Approximate location of Tipple properties

3

Approximate location of Gallagher properties

The Gallagher and Tipple land and potentially other land between Prestons and Highfields is an ideal location for lower density residential subdivision – for example in the 1000-3000m^2 size range. There is an ongoing demand for sections in this size range, located close to the services of the city but large enough to accommodate a generous sized home and garden area, for example for families wanting open space for childrens' play or others wanting a good sized garden area.

The requirement for a minimum density of 15 households per ha for Greenfield Priority Areas effectively precludes the ability to provide any sections in 1000-3000m^2 size range. There is no zoning in this size range in Christchurch City or Greater Christchurch - other than, for Christchurch City, the Residential Large Lot Zone on limited areas on the Port Hills, and very minor areas where physical ground conditions dictate lower densities e.g. Residential Suburban Heathcote Village peat overlay area, and some Small Settlement areas on Banks Peninsula.

The only provision for lower density living in the current Canterbury Regional Policy Statement (CRPS) is rural residential areas, as provided for by territorial authorities in accordance with an adopted rural residential development strategy prepared in accordance with the Local Government Act 2002 (Policy 6.3.7). Rural residential is defined as residential units outside the identified Greenfield Priority Areas at an average density of between 1 and 2 households per hectare. There are very limited areas of zoned rural residential development in Greater Christchurch. The consequence is that those wanting larger residential lots are forced to purchase 4 ha lots which are in more ready supply, or where available rural residential lots in the 5000m^2-1ha size range i.e. more land than they need or want. This is a waste of rural land with owners having the ongoing challenge of maintaining the land which is surplus to requirements.

Housing Development Capacity Assessments

Our Space acknowledges that its housing capacity work is uncertain, in particular assessment of the commercial feasibility of development, and that work is required to improve the modelling tools used. There is considered to be ample capacity to meet demand, even in the long term, within Christchurch City. However, the focus is on responding to the anticipated demand for more smaller household living options and provision of affordable housing, principally medium and high density housing close to public transport and existing services and facilities. This overlooks the fact that there needs to be a choice of living options, including provision for those whose wanting

larger sections. With the growing trend towards self sufficiency, resilience and sustainable, healthy living, there is also a move towards home grown food – which needs land. The Housing Capacity Assessments simply 'overlook' this sector of the housing market altogether.

Our Space also recognizes that a responsive planning approach is required given the many uncertainties associated with the primary drivers and influencers of urban development in Greater Christchurch.

Relief Sought:

1. Amend Fig 16: Proposed locations of future development areas in Greater Christchurch by as follows:-
   - Identify the submitters' land and other land as appropriate between the Highfields and Prestons subdivisions and bounded by QEII Drive to the south and Hawkins Road and Lower Styx Road to the north as Greenfield Priority Area – Large Lot Residential, defined as lots within the 1000-3000m^2 size range; and potentially identify other parts of Greater Christchurch as appropriate for Large Lot Residential development; or for other residential zoning.

2. 6.2 Schedule of future work
   Amend 8 (page 34) as follows:-
   Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement to:-

   - address any the need for housing development capacity for large lot residential subdivision as identified in this submission and including the Submitters' land, including by amending Map A to be consistent with the other relief sought in this submission (including 1. above and 3. below); and

   - provide flexibility to accommodate meritous proposals for urban development and zoning and to facilitate a responsive planning approach by amending and adding to the objectives and policies as follows (insertions in bold and underlined):-

   Add new Policy 6.3.1A as below:-

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Policy 6.3.1 A

(a) Enable urban development or zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

(i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

(ii) Any additional land will integrate with the provision of infrastructure; and

(iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

(iv) The beneficial planning outcomes for the urban development or extension outweigh any disbenefits arising from increasing the land available for urban development; and

(v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritous proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land capacity assessments which have informed Map A, and the primary drivers and influencers of urban development in Greater Christchurch.

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 **or which has only minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.1 Development within the Greater Christchurch area

In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly

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provided for in the CRPS **or which has minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.7 Residential location, yield and intensification
In relation to residential development opportunities in Greater Christchurch:

7. Subject to Policy 5.3.4, residential greenfield priority area development shall occur **generally** in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.

3. Specify in **Our Space** that Fig 16 be included in District Plans rather than the Canterbury Regional Policy, thus facilitating the ability for private plan requests for changes to the same, with appropriate criteria for assessment being included in the CRPS and/or District Plans; or as a less preferred alternative, other methods to retain flexibility and 'future proofing' to respond to meritous housing and business development proposals which give effect to the NPS-UDC but are not recognized or provided for in **Our Space** and supporting documents.

4. Consider other amendments to the CRPS and other documents and actions which are appropriate to facilitate a responsive approach to urban growth management for Greater Christchurch.

5. Consider streamlined RMA or other streamlined processes to facilitate the amendments sought which are specific to the Submitters' land and potentially other meritous minor rural/urban boundary changes, and associated policy wording. Do not use streamlined processes for implementation of the overall **Our Space** strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

6. Such other consequential, additional or other amendments to Chapter 6 of the RPS and other documents, and any other actions, to be consistent with and give effect to the intent of this submission, including directing consequential amendment to the Christchurch District Plan and other District Plans to re-zone the Submitters' land and other such land as appropriate Large Lot Residential, suggested lot size range 1000-3000m^2 or other

residential zoning.

Reasons for Relief Sought:-

1. For the reasons set out above under and under the responses to the Submission Form questions below.
2. The housing and business development capacity targets, urban form outcomes, and Schedule of Future Work measures (including change to the CRPS) contained in **Our Space** will have a profound and defining effect on the Greater Christchurch settlement pattern for the next 30 years. There will be very significant flow on effects for the local, regional and potentially national economies. There is no s32 assessment accompanying **Our Space** despite its defining role in 'dictating' the urban growth approach for Greater Christchurch for the next 30 years.
3. The amendments sought will enable the owners of the Submitters' land and of other land as identified above to use the land in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).
4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects the Submitters' land, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.
5. The **Our Space** development capacity targets are uncertain and likely to be inaccurate and are based on a flawed methodology. In particular they completely overlook the need to provide for large lot residential living opportunities, in the 1000-3000m^2 size range.
6. **Our Space** considers a responsive planning approach is necessary but does not facilitate this whereas this submission does.
7. **Our Space** as notified is contrary to and does not give effect to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular Policy PB1 which requires housing capacity supply to meet demand for different types, locations and price points. No housing capacity supply is provided for Large Lot Residential sections despite a very very limited supply and strong demand throughout Greater Christchurch non urban areas.
8. A fixed uncontestable urban/rural boundary line for Greater Christchurch as proposed by **Our Space** is unlikely to facilitate the urban form sought by **Our Space** including for the following reasons:-
    - Overly strict limitations on peripheral growth causes excessive land price inflation that in turn has a very negative effect on housing affordability;

- A planning regulatory regime which provides for a contestable urban/rural boundary sends an important signal to the property market that it is best to get on with development rather than "land bank" (because there is excessive capital gain due to scarcity of land supply);
- Containment and higher land values does not facilitate intensification;
- If the Central City and the Key Activity Centres are attractive the market will locate there by people's choice. Generally carrots are better than sticks to achieve desired planning outcomes.
- A contestable urban/rural boundary is not 'laissez-faire' and ad hoc and will not result in uncontained urban sprawl. The proposed amendments to Our Space and other planning documents require strategic planning including with respect to infrastructure, and an evidence base in support of any amendments to the boundary;
- A policy of both "up and out" with a range of section sizes and housing types that ensures there are a range of development opportunities and housing choices is appropriate.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

No – there needs to be provision for some large lot residential living – the ideal location is the Submitters' land and neighbouring land for the reasons outlined above.

Question 2:

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.

Do you agree with this approach and why?

Response:

No - provision needs to be made for Large Lot Residential subdivision in appropriate locations, including the Submitters' land.

Question 3:

Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.

What elements should be included in this action plan?

Response:

No comment.

Business Growth

Question 4:

Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.

Do you agree with this approach and why? What further measures would support such development?

Response:

No comment.

Question 5:

The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.

Do you agree or disagree this is sufficient and in the right location and why?

Response:

No comment.

Growth needs

Question 6:

The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.
Do you agree or disagree with this evidence base and why?

Response:
See comments above re Capacity Assessment.

Transport and other infrastructure
Question 7:
Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.
Do you agree or disagree with this approach and why?

Response:
No comment, other than to note the area between the Prestons and Highfield subdivisions can benefit from the existing and new services planned in this part of the City, including the new senior school on the QEII pool site.

Question 8:
Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.
Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:
No comment, other than it is noted that there are no known infrastructure constraints which preclude the Large Lot Residential development in the wider Highfields/Prestons locality including the Submitters' land.

Other

What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

Response:

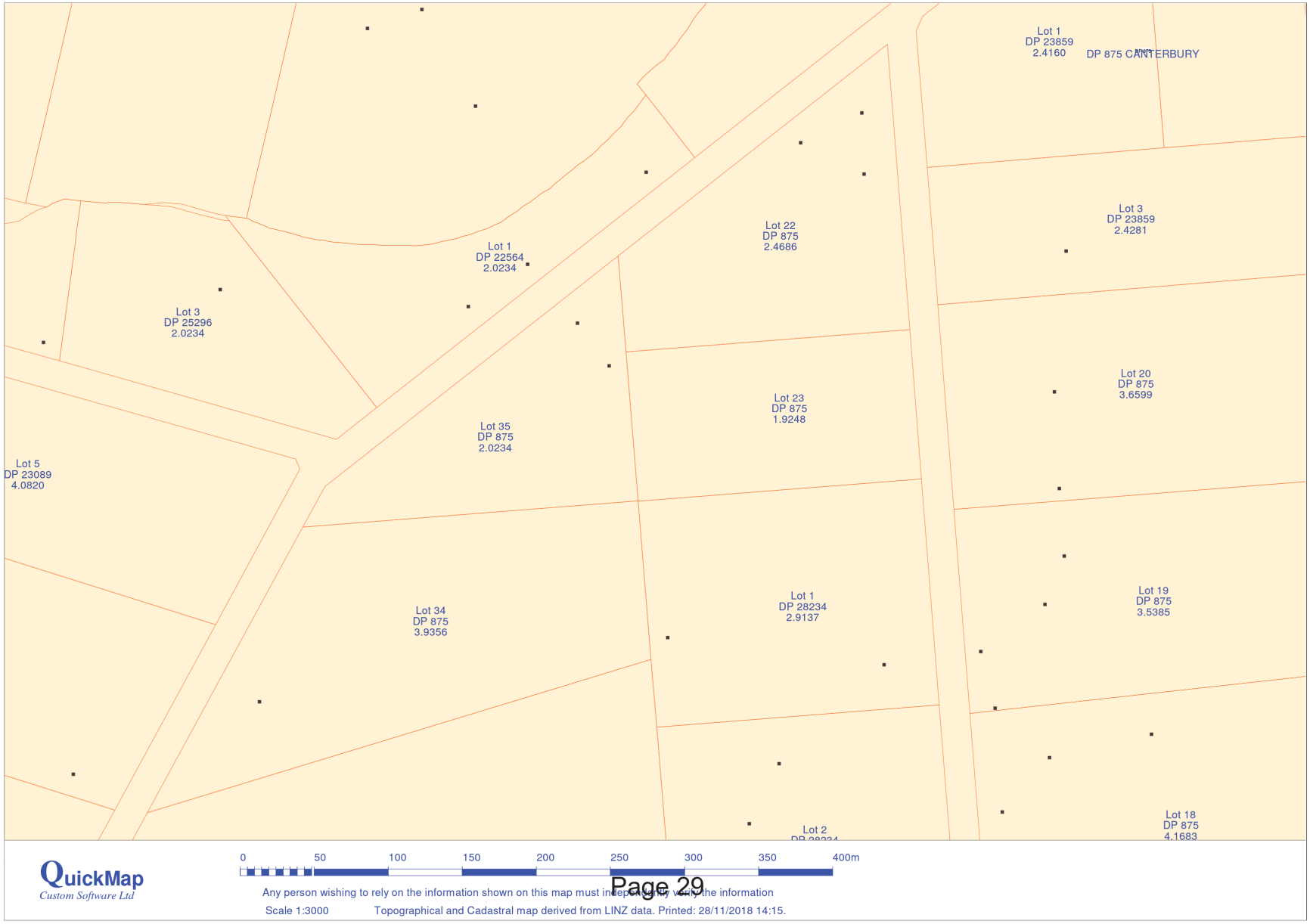
No further comments other than as noted above.

Appendices

Appendix A: Quick map

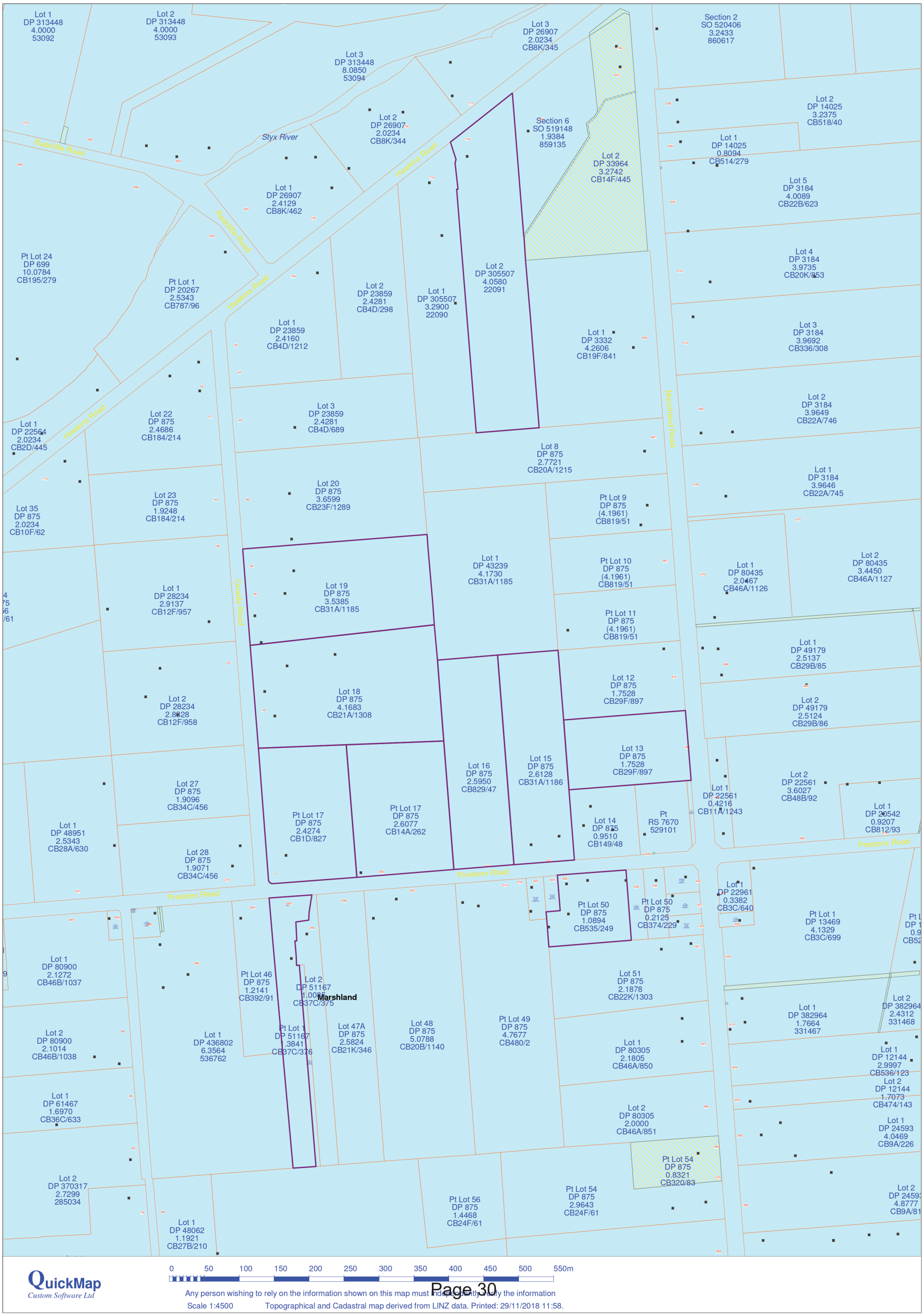
Appendix A

Quick Map



Attachment A Item 4

Attachment A Item 4



Submission No: 038

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

Cathedral City Development Ltd

November 2018

Greater Christchurch Partnership

Submitter Details

Name: Cathedral City Development Ltd
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

I wish speak at the hearings.
Preferred location: Christchurch City
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background:

The following background provides the context to the Submitter, Cathedral City Development Ltd's (CCDL) submission on the Greater Christchurch Settlement Update (GCSU). CCDL owns a 6.8ha block of land ('the Site') on the Port Hills adjoining and with access via the Harry Ell Drive existing residential area (see location plan below – CCDL site marked blue).



The Site is zoned Rural Port Hills and is within a Rural Amenity Landscape. It is currently planted in radiata pine which is 21 years old but not a viable forestry lot due the small size and generally unfavourable site conditions (exposure to winds, low fertility soils etc.). The trees can be removed at any time, as they are of minimal value and will not generate an economic return. Access for

any rural or forestry use is problematic, as the only access is via Harry Ell Drive and through the existing residential subdivision.

CCDL requested that the Site by rezoned Residential Large Lot (RLL) under the Christchurch Replacement District Plan Review (CRDP)[1], consistent with the zoning that applies to a number of other areas at the upper boundary of the existing Port Hills residential areas (including at Moncks Spur; Bridle Path Road and Morgans Valley, Heathcote; Pentre Terrace, Cashmere; and Worsleys Road). The minimum lot size for the RLL zone is 1500m^2 (a number of the existing areas have density overlays with a minimum lot size of 3000m^2). The proposed development concept is attached as **Appendix A**.

The submission was supported with expert planning, geotech, servicing and landscape advice and evidence.[2] A copy of the submission attached as **Appendix B**. It includes advice regarding servicing (Appendix D), geotech advice regarding the land's suitability for development (Appendix E) and a visual assessment (Appendix F). The rezoning will not give rise to any adverse more than minor (if any) adverse effects on the environment and the land is suitable for the proposed development.

As set out in closing legal submissions for CCDL (attached as **Appendix C**), the Council undertook an assessment of the merits of the submission and supported the rezoning. However, in effect it's 'hands were tied' and it was unable to recommend rezoning due to it's interpretation of the 'higher order' documents i.e. Canterbury Regional Policy Statement (CRPS). This requires under Objective 6.2.1.(3) and Policy 6.3.1.(4) the avoidance of urban development (defined as residential density at greater than one household per 4 ha) outside of existing urban areas or greenfield priority areas unless expressly provided for in the CRPS; and that under Policy 6.3.9 there be no further rural residential development within Christchurch City. A suggested CRDP rule was put forward to ensure that the maximum permitted site density was under 5,000m^2 so that the development did not fall within rural residential development (which is defined as being 1-2 households per ha).

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[1] Submission no. 2129
[2] Evidence can be supplied on request, and is also available on the Independent Hearing Panel website – http://www.chchplan.ihp.govt.nz/hearing/chapter-14-residential-part-stage-2/ (CCDL)

Relief Sought:

Additions are shown in bold and underlined and deletions as strike through.

1. Amend **Our Space** Fig 16: Proposed locations of future development areas in Greater Christchurch as follows:-
   Include the CCDL land as a Greenfield Priority Area – Residential on Fig 16.

2. 6.2 Schedule of future work
   Amend 8 (page 34) as follows:-
   Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement to:-
   - address the need for additional housing development capacity over the short and medium term by amending Map A to be consistent with the relief sought in this submission (including 1. above and 3. below); and
   - provide flexibility to accommodate meritous proposals for urban development and zoning and to facilitate a responsive planning approach by amending and adding to the objectives and policies as follows (insertions in bold and underlined):-

   Add new Policy 6.3.1A as below:-

   Policy 6.3.1 A

   (a) Enable urban development or zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

   (i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

   (ii) Any additional land will integrate with the provision of infrastructure; and

   (iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

   (iv) The beneficial planning outcomes for the urban development or extension outweigh any disbenefits arising from increasing the land available for urban development; and

   (v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritous proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land capacity assessments which have informed Map A, and with the primary drivers and influencers of urban development in Greater Christchurch.

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 **or which has only minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.1 Development within the Greater Christchurch area

In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS **or which have minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.7 Residential location, yield and intensification

In relation to residential development opportunities in Greater Christchurch:

7. Subject to Policy 5.3.4, residential greenfield priority area development shall occur **generally** in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.

3. Specify in **Our Space** that Fig 16 be included in District Plans rather than the Canterbury Regional Policy, thus facilitating the ability for private plan requests for changes to the same, with appropriate criteria for assessment being included in the CRPS and/or District Plans; or as a less preferred alternative, other methods to retain flexibility and 'future proofing' to

respond to meritous housing and business development proposals which give effect to the NPS-UDC but are not recognized or provided for in **Our Space** and supporting documents.

4. Consider other amendments to the CRPS and other documents and other actions which are appropriate to facilitate a responsive planning approach to management of urban growth of Greater Christchurch.

5. Consider streamlined RMA or other processes to facilitate the amendments sought which are specific to the Submitters' land and which provide flexibility to provide for meritous zoning and urban development, including associated policy wording. Do not use streamlined processes for implementation of the overall **Our Space** strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

Reasons for Relief Sought:-

1. For the reasons set out above under and under the responses to the Submission Form questions below.
2. The housing and business development capacity targets, urban form outcomes, and Schedule of Future Work measures (including change to the CRPS) contained in **Our Space** will have a profound and defining effect on the Greater Christchurch settlement pattern for the next 30 years. There will be significant flow on effects for the local, regional and potentially national economies. There is an acknowledged high level of uncertainty with the housing and business development capacity targets; and the adopted approach is aspirational and untested with its focus being redevelopment and intensification of existing urban areas, underpinned by an as yet unfunded *"vision for transformation of the transport network that fosters much greater pubic and active transport usage, and reduced reliance on the private vehicle".*[3] Despite all this, there is no s32 assessment accompanying **Our Space.**
3. The amendments sought will enable the CCDL land to be used in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).

[3] Open Space p 19

4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects the CCDL land, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.
5. The **Our Space** housing development capacity targets are uncertain, inaccurate and based on a flawed methodology. With respect to hillside developments, it is likely that some of the existing zoned hill areas will not be practical, economic or feasible to develop, including due to geotech, access and other physical constraints.
6. **Our Space** considers a responsive planning approach to future the management of the Greater Christchurch urban growth but does not facilitate or enable this, whereas the relief sought is this submission does.
7. **Our Space** as notified is contrary to and does not give effect to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular Policy PB1 which requires housing capacity supply to meet demand for different types, locations and price points.
8. A fixed uncontestable urban/rural boundary line for Greater Christchurch as proposed by **Our Space** is unlikely to facilitate the urban form sought by **Our Space** including for the following reasons:-
    - Overly strict limitations on peripheral growth causes excessive land price inflation that in turn has a very negative effect on housing affordability;
    - A planning regulatory regime which provides for a contestable urban/rural boundary sends an important signal to the property market that it is best to get on with development rather than “land bank” (because there is excessive capital gain due to scarcity of land supply);
    - Containment and higher land values does not facilitate intensification;
    - If the Central City and the Key Activity Centres are attractive the market will locate there by people’s choice. Generally carrots are better than sticks to achieve desired planning outcomes.
    - A contestable urban/rural boundary is not ‘laissez-faire’ and ad hoc and will not result in uncontained urban sprawl. The proposed amendments to **Our Space** and other planning documents require strategic planning including with respect to infrastructure, and an evidence base in support of any amendments to the boundary;
    - A policy of both “up and out” that ensures there are a range of development opportunities and housing choices is appropriate.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

Our Space has a 30 year time horizon. It acknowledges that many of the primary drivers and influencers of urban development in Greater Christchurch are in a state of change and a responsive approach to planning is necessary. [4] It also acknowledges considerable methodological difficulties with the feasible housing and business capacity assessments contained within, and which have the informed the policy responses. Notwithstanding, it proposes to retain a highly inflexible non contestable fixed rural/urban boundary line, as shown on Figure 16 'Proposed locations of future development areas in Greater Christchurch'. This approach is opposed, including but not limited to, the following reasons:-

- It is the complete opposite of 'responsive' planning, and does not facilitate resilience which requires the ability to respond with options in the face of an uncertain future and/or major unforeseen events. For example, Greater Christchurch was able to respond and recovery relatively quickly from the 2010/2011 earthquake sequence because substantial areas of greenfield housing in Selwyn and Waimakariri Districts in particular (but also at Prestons and south west Halswell) were able to be brought 'on line' quickly.

- There were a significant number of red zoned houses on the Port Hills. Rezoning for replacement housing on the Port Hills in suitable locations (such as CCDL Site) is appropriate. Whilst there is some not fully developed areas of RLL zoning on the Port Hills, a choice of areas is appropriate, as the timeframes and development aspirations of different landowners will mean that not all land zoned will necessarily be available for development in the immediate term. It continues to be the intention of CCDL to commence residential development as soon as suitable zoning is confirmed.

[4] GC Settlement Update Section 6.1

- Christchurch Council itself publicly expressed the view in its submission on the Draft LURP that *"there are some relatively minor changes to the existing urban boundary that are considered to have merit at a local level and would not in fact compromise any higher order policy direction."*[5] (see **Appendix D**). The LURP review which resulted in the current 'version' of the statutory Greater Christchurch urban growth management strategy i.e. Chapter 6 of the CRPS focussed on the larger greenfield areas. It did not consider consequences of smaller anomalous situations where individual landowners were not given the opportunity to put their case (there were no hearings on LURP 'comments') and appeal rights were extinguished – or landowners were not even aware of the process. **Our Space** and the subsequent change to the CRPS should recognise such cases and make appropriate provision for them.

- Our Space and the CRPS are 'high level' documents which cannot realistically respond to local circumstances, land use patterns and needs which importantly inform land use planning at the local level. It needs to retain flexibility to enable appropriate response at the district level to local circumstances.

Question 2:
Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.
Do you agree with this approach and why?

Response:
CCDL's seeks Residential Large Lot (or could be Port Hills Mixed Density) zoning which is appropriate given its location on the Port Hills rural/urban boundary, adjoining Victoria Park and within a Rural Amenity Landscape. Whilst at a Greater Christchurch wide level, there may be an increased demand for medium and higher density housing over time as household sizes reduce with an aging population, at a local level, other locationally specific factors such as existing amenity and character, physical land factors and servicing will often have a greater bearing on the appropriate housing response. Our Space and the CRPS need to have the flexibility to accommodate such local factors. The housing capacity assessments which have informed **'Our**

[5] CRDP Exhibit B, Letter from CCC dated 29-5-15, page 2, section 2.3

Space' have been undertaken at an 'aggregate level' including for the entire Port Hills area and do not take into account locationally specific factors.

Question 3:
Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.
What elements should be included in this action plan?

Response:
No comment.

Business Growth

Question 4:
Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.
Do you agree with this approach and why? What further measures would support such development?

Response:
No comment.

Question 5:
The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.
Do you agree or disagree this is sufficient and in the right location and why?

Response:
No comment.

Growth needs

Question 6:

The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.
Do you agree or disagree with this evidence base and why?

Response:
See comments above. With respect to hillside developments, it is likely that some of the existing zoned hill areas will not be practical, economic or feasible to develop, including due to geotech, access and other physical constraints.

Transport and other infrastructure
Question 7:
Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.
Do you agree or disagree with this approach and why?

Response:
No response, other than to note the CCDL Site is within close proximity to the Christchurch Metro Blue Line which runs up Hackthorne Road to Sign of Takahe, less than 500m (as the crow flies) from the Site.

Question 8:
Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.
Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:
No response, other than to note that there are no servicing issues with rezoning the CCDL Site for urban purposes (Residential Large Lot or Residential Hills Mixed Density).

Other

What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

Response:

No further comments other than as noted above under 'Submitter Background', 'Relief Sought' and 'Reasons for Relief'.

Appendices

Appendix A: Subdivision Concept

Appendix B: CCDL Stage 2 Submission – Christchurch Replacement District Plan

Appendix C: Closing legal submissions for CCDL Stage 2 Christchurch Replacement District Plan

Appendix A

Subdivision Concept

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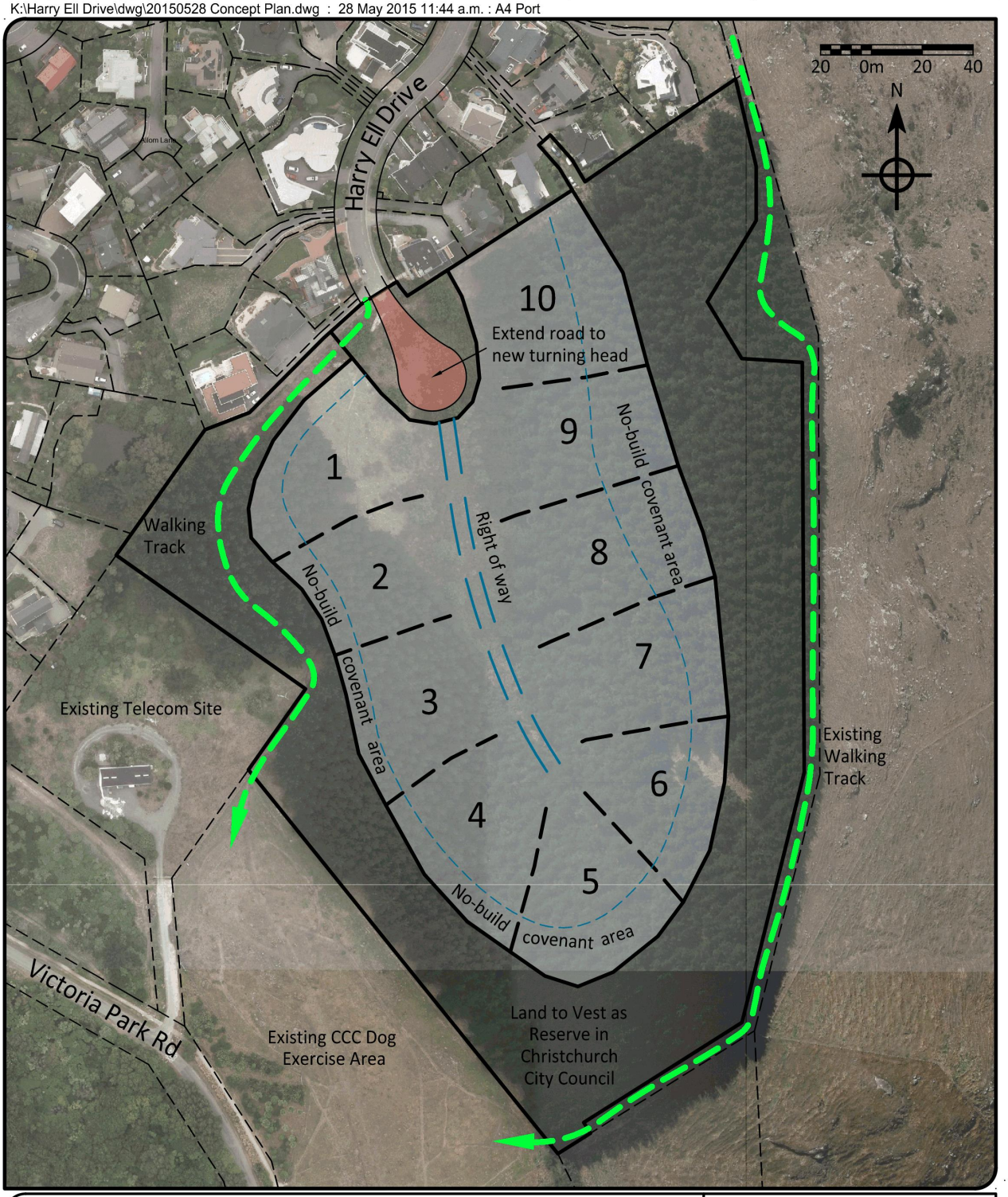
2015

K:\Harry Ell Drive\dwg\20150528 Concept Plan.dwg : 28 May 2015 11:44 a.m. : A4 Port



Concept Plan for Rezoning of 6.8ha Site

68 Harry Ell Drive, Cashmere
Pt Lot 1 DP 11796

FOX AND ASSOCIATES
creating legacies with land
www.foxsurvey.co.nz
0800 FOX SURVEY
P.O.Box 895
CHRISTCHURCH

Scale	1:2,000	Job No 0590C.01
Designed	DOF	
Drawn	PRD	Rev. 0
Date	28/05/15	

Appendix B

CCDL Stage 2 Submission – Christchurch Replacement District Plan

Submission on Christchurch Replacement District Plan

Cathedral City Development Ltd

June 2015

Christchurch City Council

RESOURCE MANAGEMENT ACT 1991

CHRISTCHURCH CITY COUNCIL

SUBMISSION ON THE PROPOSED CHRISTCHURCH REPLACEMENT DISTRICT PLAN STAGE 2 2015

Submitter Details

Name: Cathedral City Development Ltd
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Trade Competition:

Ability to gain a trade competition advantage through this submission - No

Specific Proposals to Which this Submission Applies:

All of the Christchurch Replacement District Plan ('the Replacement Plan') but in particular:-
Proposal 14 Residential
Planning Maps 46 and 51

Submission:

Submitter

The Submitter, Cathedral City Development Ltd (CCDL) owns a 6.8ha block of land ('the Site') on the Port Hills with access via the Harry Ell Drive existing residential area (see location plan below).

The Site

The Site is located on a broad spur – the eastern boundary is above and beyond a series of rocky outcrops with the land beyond these outcrops falling steeply into Bowenvale Valley below. The Site boundaries are clearly defined by existing topographical and land ownership features. The western eastern boundary of the Site is generally on the crest of this broad spur and adjoins the Council owned Victoria Park. There is a 5m wide access strip along the eastern boundary which CCDL vested in the Council some 30 years ago and this strip provides pedestrian access between Scarf Place/Longhurst Terrace and Victoria Park.

The land to the west is part of Victoria Park, a major Port Hills outdoor recreational area which is extensively used by the local community and wider Greater Christchurch residents. It contains childrens' play areas and an extensive network of walking and mountain bike tracks, linking to the Summit Road recreational area.

The Site is approximately between 230 to 250m amsl. It is not subject to the Summit Road Protection Act - the western boundary follows the lower boundary of the Summit Road Protection Act as illustrated below:-



The Summit Road Protection Act specifically controls structures, forestry and subdivision activities on upper slopes of the Port Hills.

The Site is currently planted in pinus radiata which is 21 years old but not a viable forestry activity due the small size and unfavourable site conditions (exposure to winds, low fertility soils etc.). The

trees can be removed at any time, as they are of minimal value and will not generate an economic return. Access for any rural or forestry use is problematic, as the only access is via Harry Ell Drive and through the existing residential subdivision. Farm and forestry related vehicle usage would not be compatible with the adjoining residential activity.

Development Proposal and Proposed Zoning

CCDL propose to develop the Site for lower density residential purposes in accordance with the proposed Christchurch Replacement Plan (pRDP) Stage 2 Residential Large Lot (RLL) zoning. This is consistent with the zoning that applies to a number of other areas at the upper boundary of the existing Port Hills residential areas (including at Moncks Spur; Bridle Path Road and Morgans Valley, Heathcote; Pentre Terrace, Cashmere; and Worsleys Road). The minimum lot size for the RLL zone is 1500m^2 (a number of the existing areas have density overlays with a minimum lot size of 3000m^2). The proposed development concept is attached as **Appendix A**.

A generous landscaped 'edge' of native planting is proposed along the Site boundaries with Victoria Park and the eastern slopes of Bowenvale Valley (zoned Open Space Natural and Rural Port Hills respectively in the Replacement Plan Stage 2). The development will yield approximately 10-12 sections, with vehicle access via Harry Ell Drive. The developer is prepared to remove the existing pines from the Site but it is the intention in the short term to retain a significant swathe of trees to provide shelter for a broad planting of native trees and shrubs.

The development concept proposes a number of environmental enhancement measures as follows:-

Widening and mass planting adjoining the eastern access way which will enhance public enjoyment of the Port Hills environment. The access affords extensive views into Bowenvale Valley, Huntsbury Spur and the open Port Hills landscape, the city and Pegasus Bay beyond.

It is also intended to vest in the Council land adjacent to the Telecom site in order to provide a further degree of separation between the Telecom facilities and any residential development.

Planning Status of Submitter's Land ('the Site')

Chapter 6 of the Canterbury Regional Policy Statement ('C6'):

The Site is not located within a Greenfield Priority Area – Residential as indicated on Map A Greenfield Priority Areas in Chapter 6 of the Canterbury Regional Policy Statement.

The Greenfield Priority Areas are intended to accommodate the increased demand for households resulting from the recent Canterbury earthquakes (along with the 'twin policy' of intensification of existing urban areas), with sufficient land rezoned to provide for housing choice, which avoids an escalation in section and house prices due to shortage of supply:-

Objective 6.2.1 – Recovery Framework
Recovery, rebuilding and development are enabled within Greater Christchurch through a land use and infrastructure framework that:
(1) Identifies priority areas for urban development within Greater Christchurch….
Policy 6.3.7 – Residential location, yield and intensification
In relation to residential development opportunities in Greater Christchurch:

(1) Subject to Policy 5.3.4, residential greenfield priority area development shall occur in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.
(6) Housing affordability is to be addressed through providing sufficient intensification and greenfield priority area land to meet housing demand during the recovery period….

Policy 6.3.7 – Residential location, yield and intensification
In relation to residential development opportunities in Greater Christchurch:

> *(1) Subject to Policy 5.3.4, residential greenfield priority area development shall occur in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.*
> *(6) Housing affordability is to be addressed through providing sufficient intensification and greenfield priority area land to meet housing demand during the recovery period….*

CCDL has lodged a Comment on the current LURP (Land Use Recovery Plan) Review seeking amendments to C6 to include the Site as a 'Port Hills Greenfield Residential Area' and to amend Policy 6.3.11 to provide for minor extensions to Greenfield Areas and Existing Urban Areas (as was provided for under the RPS Chapter 12A policy framework which preceded Chapter 6 ('C6')). The Comment seeks to exempt Port Hills Greenfield Areas from the requirement to achieve a minimum of 15 households per ha as this is impractical and inappropriate in a hills setting. A copy of the LURP Comment is attached as **Appendix B**.

Land Use Recovery Plan

The Land Use Recovery Plan ('LURP') identifies greenfield priority areas for new residential subdivisions to meet anticipated demand to 2028 (as shown on Map A of C6)[1]. Action 19 requires Christchurch City Council *"to enable in the next review of its district plans, to provide for development of the greenfield areas shown on Map A, appendix 2, that are not already zoned for development in accordance with Chapter 6 of the Regional Policy Statement.".*

As discussed above, the Submitter recently lodged a Comment on the LURP Review seeking that amendments to the LURP (which includes C6 of the RPS (Appendix 1) to facilitate urban development of the Site. The amendments sought may be necessary to enable the CCDL development proposal to proceed. This is by virtue of Policy 6.3.1 (4) which is "*ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A".* The Site is not a greenfield priority area or existing urban area.

However, it is considered that the proposed amendment to the Port Hills urban/rural boundary is of a minor nature which is not of regional significance and is therefore not inconsistent with the LURP and will give effect to C6.

Christchurch City Operative Plan

The Site is zoned Rural Hills (RuH) in the Operative Plan. The minimum lot size for subdivision and a dwelling is 100 ha.

Christchurch Proposed Replacement District Plan

Scope of Review: The Christchurch Operative District Plan is currently under review, under the Canterbury Earthquake Recovery Order 2014.

All aspects of the District Plan are under review, including provisions relating to the Port Hills residential areas. The Review is being undertaken under special streamlined and accelerated legislation promulgated to address planning needs arising as a result of the recent earthquakes. By definition, all elements of the Review are 'earthquake related'.

With respect to housing, provision is to be made for a wide range of housing types and locations, including but not limited to smaller more affordable housing in existing areas (to be facilitated through infill and intensification).

The accelerated process is to provide a rapid solution to the destruction of housing stock in a way that also provides an appropriately managed choice of living styles for displaced communities. There have been numerous high quality houses in the Port Hills area (particularly towards Sumner), which have been 'red zoned' and where rebuilding is not permitted. Rezoning for replacement housing on the Port Hills in suitable locations (such as the Site) is appropriate. Whilst there are a number of other not fully developed areas of RLL zoning on the Port Hills, a choice of areas is appropriate, as the timeframes and development aspirations of different landowners will mean that not all land zoned will necessarily be available for development in the immediate term.

It is the intention of CCDL to commence residential development as soon as the RLL zoning is confirmed.

Zoning: The Site is zoned Rural Port Hills (RuPH). The minimum lot size for subdivision and a dwelling is 100 ha.

Provision is made in the Rural Urban Fringe Zone (RUFZ) for establishing a dwelling on an existing 'undersize' site (as at 2 May 2015) (the minimum lot size in the RUFZ for subdivision and a dwelling is 4ha). A similar rule should apply allowing for a dwelling on existing 'undersize' sites in the other Replacement Plan rural zones (as set out in the Relief Sought below).

Relevant Objectives and Policies:

The development concept (**Appendix A)** is entirely in accordance with the Replacement Plan objectives and policies. Of particular relevance are 8.1.1.3 Policy – Environmental Compensation and 14.1.5.7 Policy – Residential development on the Port Hills (see **Appendix C**).

Amendments are sought to the Replacement Plan 17.1.1.5 Policy 5 - Density and distribution of rural dwellings to provide the policy context for a dwelling on 'undersize' sites in all rural zones including the RuPH Zone.

Relevant Planning Framework

Submissions must be assessed under the provisions of the Resource Management Act 1991, including Part 2 and Section 32 (Requirements for Preparing Evaluation Reports), the Replacement Plan Strategic Directions decision; and the Order in Council ('OIC').

Schedule 4 of the OIC includes a 'Statement of Expectations' for the Replacement District Plan. This includes that the Replacement Plan:-

(c)provides for the effective functioning of the urban environment of Christchurch district, reflecting the changes resulting from the Canterbury earthquakes, including changes to population, land suitability, infrastructure and transport.

(d) facilitates an increase in the supply of housing, including by-

(ii) ensuring the district plan has capacity to accommodate up to 23 700 additional dwellings by 2028 (as compared with the number of households in the 2012 post-earthquake period); and

(iii) providing for a wide range of housing types and locations.

(e) ensures sufficient and suitable development capacity and land for commercial, business and residential activities.

In addition, it must be an efficient and easy to use document and must:-

- *(a) Clearly articulates how decisions about resource use and values will be made, which must be in a manner consistent with an intention to significantly reduce (compared with existing district plans)-*
  - *(i) Reliance on resource consent processes; and*
  - *(ii) The number, extent, and prescriptiveness of development controls and design standards in the rules, in order to encourage innovation and choice; and*
  - *(iii) The requirements for written approval and notification.*

Proposal 3: Strategic Directions and Outcomes

The Role of the Strategic Directions and outcomes chapter of the Replacement Plan , is to provide the "*strategic context"* for the district plan and *"the overarching direction"* for other chapters *"through high-level objectives and policies for the district as a whole"* [1]

For the purposes of preparing, changing, interpreting and implementing the Replacement Plan, all other objectives within the Strategic Directions Chapter are to be expressed and achieved in a manner consistent with objective 3.3.1 and 3.3.2. The objectives and policies in all other Chapters of the District Plan are to be expressed and achieved in a manner consistent with the objectives in the Strategic Directions and Outcomes Chapter of the Replacement Plan.

[1] (pg25, para 76– Decision 1 Strategic Directions and Strategic Outcomes (and relevant definitions) 26th February 2015)

The key Strategic Directions and Outcomes objectives which are of relevance to this submission are:

Objective 3.3.1 – Enabling recovery and facilitating future enhancement of the district. This is to be achieved in a manner that both meets the community's needs, including for economic development and investment certainty; and sustains the important qualities and values of the natural environment.

Objective 3.3.2 – Clarity of language and efficiency.
Efficiency is to be achieved by minimising transaction costs and resource consents associated with the Replacement Plan processes; the extent of development controls and design standards (generally adopting a targeted approach); and requirements for notification and written approvals.

Section 32
The current zoning and associated rules (Rural Port Hills, minimum lot size for subdivision and a dwelling 100ha) leaves small pockets of land such as the Site in limbo ….with no practical use and having negligible value. This 6.8ha is a small area of land that is not suitable for any agricultural use and the current forestry use is uneconomic and not sustainable. No form of housing or residential use is possible under the current planning rules.

If this land is not zoned for some sort of residential development then it will continue to remain a site with no use and of limited value. The Site can readily be developed to reflect the principles of the Urban Design Protocol with values of character, context, connectivity etc, as is per the proposed development concept (**Appendix A**).

The Stage 2 zoning of the Site as Residential Large Lot (RLL) is considered to be the most appropriate way to achieve the purpose of the Resource Management Act and the objectives of the Replacement Plan, including in terms of its efficiency and effectiveness compared to retaining the current Rural Port Hills zoning.

Suitability for Rezoning for Greenfield Residential Purposes

The Site is suitable for development for residential purposes immediately, as part of Stage 2 of the Replacement Plan.

Location:

This proposed rezoning of the Site to RLL is consistent with the zoning that applies to a number of other areas at the upper boundary of the existing Port Hills residential areas as discussed above.

Possible Subdivision Concept:

A proposed development concept is attached as **Appendix A,** and is discussed above.

Servicing:

Attached as **Appendix D** is a letter from Fox Surveyors which confirms that there are no servicing constraints to development of the Site at either RLL densities (approximate yield 10-12 sections).

Geotech Status:

Tonkin and Taylor have undertaken a preliminary 'walk over' of the Site and advise that there are unlikely to any geotech or other natural hazard constraints to development of the Site, under the provisions of s106 of the Resource Management Act 1991 (see **Appendix E)**.

<u>Other Potential Development Constraints:</u>

Landscape constraints:

Andrew Craig, landscape architect has assessed the landscape and natural values of the Site (**see Appendix F**) and concluded that favourable conditions exist on Site for the proposed rezoning with respect to– contiguousness, remediation, modest size, the lack of significant site features, good access and the enhancement opportunity involving planting most of the site with indigenous re-vegetation. Further enhancement as a result of the proposed rezoning of the Site will accrue from the removal of the pine plantation thereby improving landscape coherence and consistency – that is, adopting the prevailing land cover character of both the urban and rural environments.

It is noted that the chief cost is lessening of the ONL, where in this case the primary landscape value is loss of vegetated open space. However, it is considered that this is not of a particularly high quality due to the presence of pine plantation which almost entirely occupies the Site.

Further, the area lost from the ONL will be small relative to its overall extent.

Andrew Craig considers that there will be no adverse amenity effects arising from development following re-zoning. The reason is that modern housing on large lots will be high quality. The large lots will further enable large scale planting which will further provide amenity.

Overall, it considered that the land use and its effects arising from the proposed re-zoning will, on balance, be appropriate in landscape terms given the circumstances discussed above.

Relief Sought:

1) Amend Map 46 and 51 of the Replacement Plan to rezone the Site (as shown on the location plan on page 3 of this submission) Residential Large Lot (RLL).

2) Change the status of Rule 17.8.2.6 D4 (one residence on a site in existence as at 2 May 2015 with a net area of greater than 1 ha but less than 4 ha) from discretionary to controlled and specify that any such consent shall not require affected party approvals and shall be non notified.

3) Add equivalent rules providing for one residence on existing 'undersize' sites i.e. lots smaller than the permitted minimum area, in the Rural Banks Peninsula, Rural Waimakariri, and Rural Port Hills Zones as a controlled activity with matters over which Council reserves control as set out in amended Rule 17.8.2.6 below.

4) Amend Rule 17.8.2.6 to matters over which Council reserves control, not assessment matters as follows:-

17.8.2.6 Residential activities on existing small sites

a. ~~Whether the~~ **The** density, location and design of the residential activity ~~will~~ **having regard to the** maintain**enance** rural character and amenity values. ~~taking into account~~

~~i. the effects of a residential unit on the site contributing to a change in the rural character and amenity values towards a more urban character;~~

~~ii. the extent to which the site is capable of providing an identified building area that complies with relevant Built Form Standards;~~

~~iii. the extent to which the current use of the site is for a rural activity and its ability to continue;~~

~~iv. the extent to which the site will be compromised for any future urban activities or combined with surrounding sites to enable a larger development to occur; …~~

4. Amend 17.1.1.5 Policy 5 – Density and distribution of rural dwellings as follows:-

17.1.1.5 Policy 5 - Density and distribution of rural dwellings

a. Ensure a density and distribution of rural dwellings that will:

i. ~~retain~~ **maintain** a rural working environment;

ii. support a consolidated urban form and rural settlements;

iii. encourage retention of larger sites;

iv. prioritise the use of existing sites or amalgamation of multiple small sites;

v. avoid creating new sites less than 4ha in the Rural Urban Fringe Zone;

vi. enable use of existing sites **for dwellings** ~~less than 4ha for rural dwellings in the Rural Urban Fringe Zone where it will not result in large lot/rural residential development;~~

Other

Any consequential, further or alternative amendments to the Replacement District Plan to be consistent with the above and to give effect to the intent of this submission and the interests of the Submitter.

Reasons for Relief Sought:

1. For the reasons outlined above.
2. The proposed rezoning of the Site to RLL will give effect to the strategic directions and objectives and policies of the Replacement Plan.

3. The notified Replacement Plan provisions are inconsistent with and do not give effect to the Resource Management Act 1991, including Part 2 and Section 32 or other relevant statutory and non statutory matters including the Order in Council (in particular those parts of Schedule 4 Statement of Expectations set out above under 'Relevant Planning Framework'), LURP and C6 of the Canterbury Regional Policy Statement.
4. The Section 32 Evaluation Report in support of the provisions of the Replacement Plan including those sought to be changed by this submission is inadequate.
5. Erecting a dwelling on an existing title as at 2 May 2015 in all rural zones should be provided for, and as controlled not discretionary. These titles are existing and relate to a pre-existing subdivision pattern only, so there is no risk of such consents resulting in a 'cluster' of large lots or rural residential lots (noting these terms are not explained or defined in the Replacement Plan). Controlled status is consistent with the Strategic Directions Objective 3.3.2 (a) ie minimize transaction costs and resource consent processes and the number, extent and prescriptiveness of development controls. In the Waimakariri, Rural Port Hills and Rural Banks Peninsula Zones, whilst existing titles can be larger than 4 ha, the productive potential of undersize lots remains very limited due to the generally poorer soil quality and growing conditions in these 'harsher' environments. Residential 'lifestyle' use of such lots is generally the only viable and sustainable use for the land. Providing for a dwelling on existing undersize titles will not result in a major cumulative change to the character of the existing rural environment, as the number of existing 'undersize' lots without an existing dwelling is limited.

We wish to be hearing in support of this submission

If others make similar submissions we will consider presenting a joint case with them.



……

(Signature of applicant or person authorized to sign on behalf of the applicant)

Date: June 12, 2015

Appendices:

Appendix A	Development Concept
Appendix B	LURP Comment
Appendix C	Relevant Replacement Plan Objectives and Policies
Appendix D	Letter from Fox Surveyors regarding servicing
Appendix E	Preliminary Geo tech letter
Appendix F	Landscape Assessment

Appendix A

Proposed Development Concept

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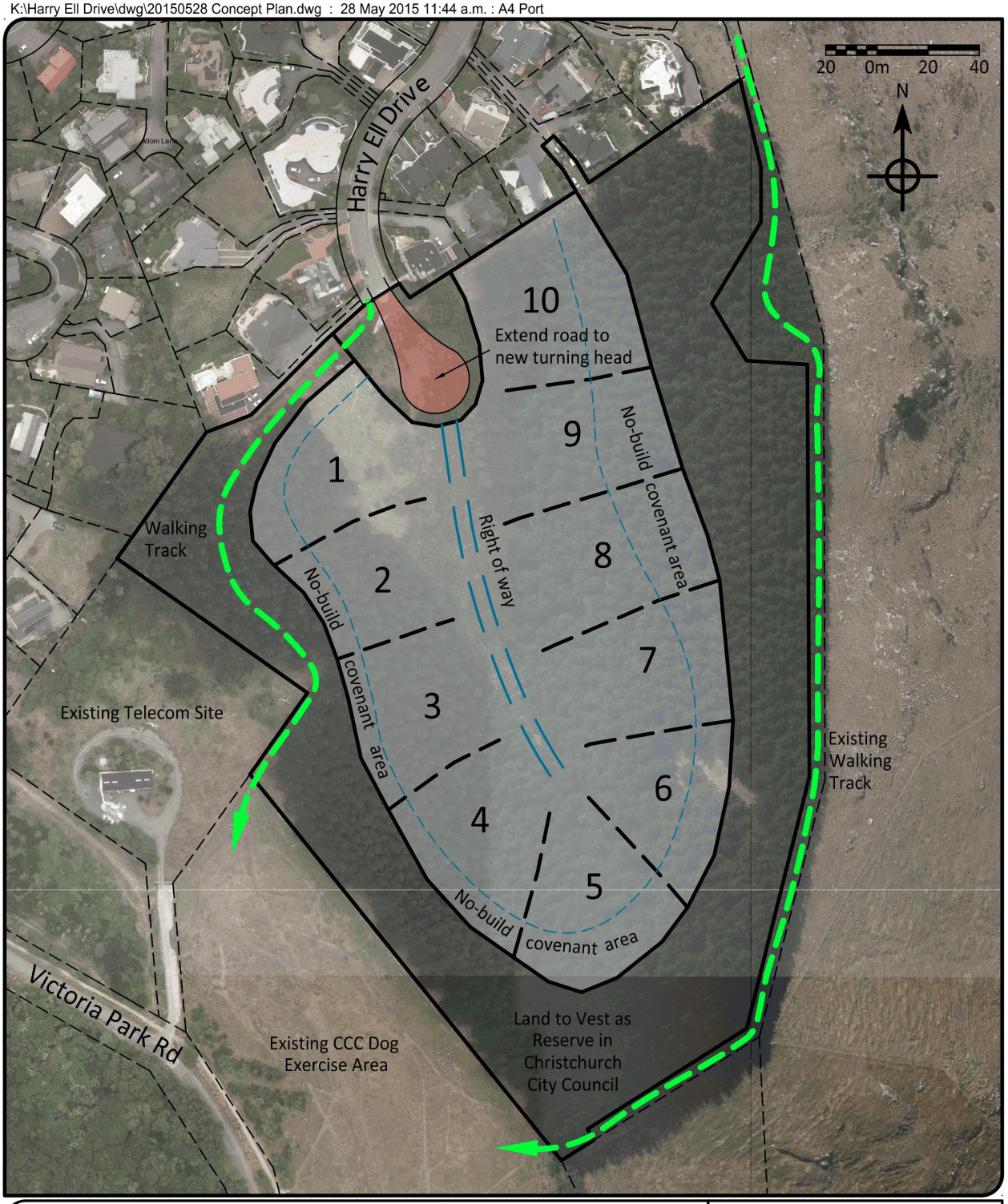
2015

K:\Harry Ell Drive\dwg\20150528 Concept Plan.dwg : 28 May 2015 11:44 a.m. : A4 Port



Concept Plan for Rezoning of 6.8ha Site

68 Harry Ell Drive, Cashmere
Pt Lot 1 DP 11796

FOX AND ASSOCIATES
creating legacies with land
www.foxsurvey.co.nz
0800 FOX SURVEY
P.O.Box 895
CHRISTCHURCH

Scale	1:2,000	Job No 0590C.01
Designed	DOF	
Drawn	PRD	Rev. 0
Date	28/05/15	

Item 4

Attachment A

Appendix B

LURP Comment

COMMENT ON LAND USE RECOVERY PLAN REVIEW

Environment Canterbury
PO Box 345
CHRISTCHURCH 8140
By email only: LURP@ecan.govt.nz

Name: Cathedral City Holdings Ltd

Address for Service: Aston Consultants
PO Box 1435
Christchurch 8140
Attn. Fiona Aston P 03 332213 / 0275 332213
E fiona@astonconsultants.co.nz



(Signature of applicant or person authorised to sign on behalf of the applicant)

Date: May 29, 2015

Topic Areas: Direction and Coordination, Communities and Housing

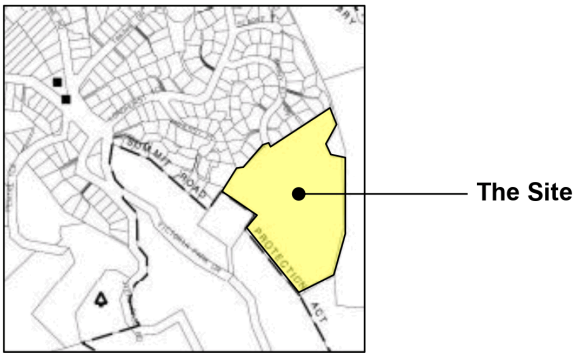
Introduction/The Site

This Comment is made on behalf of Cathedral City Holdings Ltd (CCHL) who own a 6.8ha block of land ('the Site') on the Port Hills with access via the Harry Ell Drive existing residential area (see location plan below). The Site is currently planted in radiata pine which is 21 years old but not a viable forestry lot due the small size and generally unfavourable site conditions (exposure to winds, low fertility soils etc.). The trees can be removed at any time, as they are of minimal value and will not generate an economic return. Access for any rural or forestry use is problematic, as the only access is via the Harry Ell Drive and through the existing residential subdivision. Farm and forestry related vehicle usage would not be compatible with the adjoining residential activity.

The Site is located on a broad spur – the eastern boundary is above and beyond a series of rocky outcrops with the land beyond these outcrops falling steeply into Bowenvale Valley below. The Site boundaries are clearly defined by existing topographical and land ownership features. The western eastern boundary of the Site is generally on the crest of this broad spur and adjoins the Council owned Victoria Park. There is a 5m wide access strip along the eastern boundary which CCHL vested in the Council some 30 years ago and this access strip provides between Scarf Place/Longhurst Terrace and Victoria Park.

The land to the west is part of Victoria Park, a major Port Hills outdoor recreational area which is extensively used by the local community and wider Greater Christchurch residents. It contains childrens' play areas and an extensive network of walking and mountain bike tracks, linking to the Summit Road recreational area.

The Site is 230 to 250m amsl. It is outside the area subject to Summit Road Protection Act - the western boundary follows the lower boundary of the Summit Road Protection Act as illustrated below:-



The Summit Road Protection Act specifically controls structures, forestry and subdivision activities on upper slopes of the Port Hills.

Development Proposal and Proposed Zoning

CCHL propose to develop the Site for lower density residential purposes in accordance with the proposed Christchurch Replacement Plan (pRDP) Stage 2 Residential Large Lot (RLL) zoning. This is consistent with the zoning that applies to a number of other areas at the upper boundary of the existing Port Hills residential areas (including at Monks Spur; Bridle Path Road and Morgans Valley, Heathcote; Pentre Terrace, Cashmere; Worsleys Road; Redmund Spur, Cashmere Road; and Kennedys Bush). The minimum lot size for the RLL zone is 1500m^2 (a number of the existing areas have density overlays with a minimum lot size of 3000m^2).

The proposed development concept is attached as **Appendix A**. A generous landscaped 'edge' of native planting is proposed along the Site boundaries with Victoria Park and the eastern slopes of Bowenvale Valley (zoned Open Space Natural and Rural Port Hills respectively in the pRDP Stage 2). The development will yield approximately 10-12 sections, with vehicle access via Harry Ell Drive. The developer is prepared to remove the existing pines from the Site but it is the intention in the short term to retain a significant swathe of trees to provide shelter for a broad planting of native trees and shrubs.

The development concept proposes a number of environmental enhancement measures as follows:-

- Widening and mass planting adjoining the eastern access way which will enhance public enjoyment of the Port Hills environment. The access affords extensive views into Bowenvale Valley, Huntsbury Spur and the open Port Hills landscape, the city and Pegasus Bay beyond.
- It is also intended to vest in the Council land adjacent to the Telecom site in order to provide a further degree of separation between the Telecom facilities and any residential development.

A submission will be filed on Stage 2 of the pRDP seeking RLL zoning for the Site.

Suitability for Residential Development

Attached as **Appendix B** is a letter from Fox Surveyors which confirms that there are no servicing constraints to development of the Site at either RLL densities (approximate yield 10-12 sections).

Tonkin and Taylor have undertaken a preliminary 'walk over' of the Site and advise that there are unlikely to any geotech or other natural hazard constraints to development of the Site, under the provisions of s106 of the Resource Management Act 1991 (see **Appendix C)**.

Landscape and Natural Values

Andrew Craig, landscape architect has assessed the landscape and natural values of the Site (**see Appendix D**) and concluded that favourable conditions exist on Site for prospective rezoning with respect to– contiguousness, remediation, modest size, the lack of significant site features, good access and the enhancement opportunity involving planting most of the site with indigenous re-vegetation. Further enhancement as a result of the proposed rezoning of the Site will accrue from the removal of the pine plantation thereby

improving landscape coherence and consistency – that is, adopting the prevailing land cover character of both the urban and rural environments.

It is noted that the chief cost is lessening of the ONL, where in this case the primary landscape value is loss of vegetated open space. However, it is considered that this is not of a particularly high quality due to the presence of pine plantation which almost entirely occupies the site. Further, the area lost from the ONL will be small relative to its overall extent.

Andrew Craig considers that there will be no adverse amenity effects arising from development following re-zoning. The reason is that modern housing on large lots will be high quality. The large lots will further enable large scale planting which will further provide amenity.

Overall, it considered that the land use and its effects arising from the proposed re-zoning will, on balance, be appropriate in landscape terms given the circumstances discussed above.

Relevant Objective and Policy Framework

Objective 6.2.1 of Chapter 6 of the Regional Policy Statement ('C6'), (Appendix 1 of the LURP) is:-

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

(4) protects outstanding natural features and landscapes including those within the Port Hills from inappropriate subdivision, use and development.

The Operative City Plan identifies the distinctive natural and landscape features of the Port Hills, as outstanding and of national importance. The proposed Christchurch Replacement District Plan (pRDP) chapter relating to Natural and Cultural Values will be notified as part of Stage 3, in July. It is expected that the 'rural' Port Hills will continue to be identified as outstanding.

The proposed zoning is consistent with C6 and pRDP objective and policy framework with respect to the Port Hills which seek to ensure that development of greenfield land has a backdrop of a natural landform or vegetation; avoids buildings and structures on significant and outstanding skylines; is of a density that provides ample opportunity for tree and garden planting to reduce the visual dominance of buildings within the hillside landscape; integrates well with existing residential areas and where possible provides connections to public open

space; and where adjoining significant and outstanding natural landscape, remains compatible with these areas (Appendix E) The concept of environmental compensation is to be applied, where net benefit would arise from a subdivision proposal occurring within outstanding natural features and landscapes, as is the case here.

Canterbury Regional Policy Statement Chapter 6 Policy Amendment: Minor Changes to Greenfield Priority Areas

Chapter 12A of the RPS, which preceded Chapter 6 ('C6') included Policy 12: Resolution of Urban Limits. This provided for minor changes to urban limits at the time of rezoning land and preparing an ODP (see **Appendix F**). Policy 12 was not included in the LURP version of the RPS (Chapter 6) for unknown reasons.

It is essential there is flexibility in the application of the Urban Limit ('UL')/Greenfield ('GF') land policies to allow for minor urban extensions which are practical and appropriate and not of regional significance. The merits of such cases should be determined at the district level, including through the current Christchurch Replacement District Plan process. This may not be possible under the current RPS policy framework due the very specific wording of Policy 6.3.1 (see discussion below under 'Amendments to LURP').

The RPS is generally understood to be a 'higher order' strategic planning document and there are cases of landowners (including clients of Aston Consultants) who were not aware of, and hence, did not participate in the RPS review process (which was in any case 'truncated' by actions under Canterbury Earthquake Recovery Act legislation, including the LURP) in relation to the inclusion of their land as GF/within the UL.

The LURP Review should re-introduce a C6 policy which provides for minor changes to urban limits/GF areas. Suggested wording is set out under 'Relief Sought'.

Resource Management Act Section 32 'Test'

The current zoning and associated rules (Rural Port Hills, minimum lot size for subdivision and a dwelling 100ha) leaves small pockets of land such as the Site in limbo ….with no practical use and having negligible value. This 6.8ha is a small area of land that is not suitable for any agricultural use and then no form of housing or residential use is possible under the current planning rules.

If this land is not zoned for some sort of residential development then it will continue to remain a site with no use and of limited value. The site can easily developed to reflect the principles of the Urban Design Protocol with values of character, context, connectivity etc, as is per the proposed development concept (**Appendix A**).

The proposed RLL rezoning and development concept is the most appropriate way to achieve the purpose of the Resource Management Act, including in terms of its efficiency and effectiveness compared to retaining the current Rural Port Hills zoning.

Earthquake Recovery and the Christchurch Replacement District Plan

The Christchurch Operative District Plan is currently under review, under the Canterbury Earthquake Recovery Order 2014. The Schedule 4 Statement of Expectations includes that the Replacement Plan:

(c)provides for the effective functioning of the urban environment of the Christchurch district, reflecting the changes resulting from the Canterbury earthquakes, including changes to population, land suitability, infrastructure, and transport:

(d)facilitates an increase in the supply of housing, including by—…

(ii)ensuring that the district plan has capacity to accommodate up to 23 700 additional dwellings by 2028 (as compared with the number of households in the 2012 post-earthquake period); and….

(iv)having regard to constraints on environmental and infrastructure capacity, particularly with regard to natural hazards; and

(v)providing for a wide range of housing types and locations:

(e)ensures sufficient and suitable development capacity and land for commercial, industrial, and residential activities:

All aspects of the District Plan are under review, including provisions relating to the Port Hills residential areas. The Review is being undertaken under special streamlined and accelerated legislation promulgated to address planning needs arising as a result of the recent earthquakes. By definition, all elements of the Review are 'earthquake related'.

With respect to housing, provision is to be made for a wide range of housing types and locations, not just smaller more affordable housing in existing areas (to be facilitated through infill and intensification), which appears to be a focus of the LURP Review[1].

The accelerated process is to provide a rapid solution to the destruction of housing stock in a way that also provides an appropriately managed choice of living styles for displaced communities. There have been numerous high quality houses in the Port Hills area (particularly towards Sumner), which have been 'red zoned' and where rebuilding is not permitted. Rezoning for replacement housing on the Port Hills in suitable locations (such as

[1] LURP Review pages 1 and 6

the Site) is appropriate. Whilst there are a number of other not fully developed areas of RLL zoning on the Port Hills, a choice of areas is appropriate, as the timeframes and development aspirations of different landowners will mean that not all land zoned will necessarily be available for development in the immediate term.

It is the intention of CCHL to commence residential development as soon as the RLL zoning is confirmed.

Amendments to the LURP

The purpose of the LURP is to help achieve the vision of the Recovery Strategy for Greater Christchurch by providing direction for residential and business land use development to support recovery and rebuilding across metropolitan greater Christchurch in the next 10–15 years.[2]

No person must make a decision or recommendation that is inconsistent with the Recovery Plan[3].

A district plan must give effect to a regional policy statement.[4]

Amendments to the LURP which includes C6 of the RPS (Appendix 1) may be necessary to enable the above development proposal to proceed. This is by virtue of Policy 6.3.1 (4) which is "*ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A".* The Site is not a greenfield priority area or existing urban area. Further, Policy 6.3.6 (b) requires that development within greenfield areas in Christchurch City achieves a residential net density of 15 households per ha average over the whole of an Outline Development Plan (ODP) area (ODPs for greenfield areas are required under Policy 6.3.3). The RLL zone will not achieve the required density , if the Site is included as a greenfield priority area on Map A.

However, the proposed amendment to the Port Hills urban/rural boundary is of a minor nature which is not of regional significance and is therefore not inconsistent with the LURP and will give effect to C6.

The matter of 'consistency' with the LURP is addressed in the pRDP Strategic Directions and Outcomes Decision. The Panel found that:-

Even where the Replacement Plan is dealing with the same subject matter as provisions of the LURP, the Replacement Plan is not required to treat the subject matter in precisely the

[2] LURP Executive Summary page 6
[3] Section 23 Canterbury Earthquake Recovery Act 2011
[4] Section 75 3c) Resource Management Act 1991

same way. 'Not inconsistent with' is a phrase that provides reasonable allowance for interpretation and judgement as to how it should be applied in the context.[5]

Notwithstanding the above, for the avoidance of doubt, amendments to the LURP are requested to give effect to this Comment as follows:-

1) Amend Map A of Chapter 6 of the Canterbury Regional Policy Statement (Appendix 1 of the LURP) by inclusion of the Site as a 'Port Hills Greenfield Residential Area'.
2) Amend Policy 6.3.7 (3) (b) as follows (amendments in bold and underlined):-

(3) Intensification developments and development in greenfield priority areas shall achieve at least the following residential net densities averaged over the whole of an ODP area (except where subject to an existing operative ODP with specific density provisions):

(a) 10 household units per hectare in greenfield areas in Selwyn and Waimakariri District;

(b) 15 household units per hectare in greenfield areas in Christchurch City, ***excluding Port Hills greenfield priority areas****;*

3) Add to Policy 6.3.7 (b) Principal Reasons and Explanations:

With respect to the Port Hills Greenfield Priority Areas, the appropriate residential density will be determined by the district plan, having regard to the existing pattern of zoning and development and the need to ensure development complements the natural landform and character of the Port Hills.

4) Add new Policy 6.3.11 as below and re-number existing Policy 6.3.11 as Policy 6.3.12.

Policy 6.3.11 Minor Extensions of Greenfield Areas and Existing Urban Areas
(a) During the process of completing district plan changes or reviews (including privately requested changes), territorial authorities may make minor amendments to provide for urban zoning outside the Priority Greenfield Areas and existing urban areas shown on Map A provided all the following conditions are met:
(i) Any proposed extension or reduction is of a minor nature, generally around 10 ha or less; and
(ii) Any additional land is contiguous with an existing urban areas or identified greenfield priority area as shown on Map A

Explanation:

[5] Replacement Plan Strategic Directions & Outcomes Decision paragraph 61

This policy confirms the requirement for urban development to be contained within the Greenfield Areas shown on Map A, but provides for minor extensions to Greenfield Areas or existing urban areas. In such cases, the territorial authority will determine whether an Outline Development Plan is necessary having regard to the purpose and content of Outline Development Plans as set out in Policy 6.3.3. Policy 6.3.7 will apply on the basis that the urban extension(s) are classed as 'greenfield areas'.

5) Such additional, alternative or consequential relief as will give effect to the intent of this Comment.

Appendices

Appendix A Development Concept

Appendix B Letter from Fox & Associates re Servicing

Appendix C Letter from Tonkin & Taylor re Site Suitability in relation to Natural Hazards

Appendix D Landscape Assessment (Andrew Craig)

Appendix E Relevant Replacement Plan Objectives and Policies

Appendix F Chapter 12A Policy 12 Resolution of Urban Limits

Appendix C

Relevant Replacement Plan Objectives and Policies

Replacement Plan (version dated 14/5/15)

8.1.1 Objective Natural and Built Environments

a. Significant natural features, landscapes, indigenous biodiversity and ecosystems, springs, significant trees, and historic heritage are protected or enhanced through the subdivision process.

8.1.1.1 Policy – Natural features and landscapes

a. Ensure that subdivision and associated works shall achieve the long term protection and enhancement of:…

ii. outstanding natural features and landscapes, significant features and landscapes, important ridgelines;

iii. significant indigenous vegetation and / or indigenous fauna, including sites of ecological significance.

8.1.1.3 Policy - Environmental Compensation

a. Apply the concept of environmental compensation where net benefit would arise from a subdivision proposal occurring within outstanding natural features and landscapes, significant natural features and landscapes, sites of ecological significance, and in relation to heritage items and settings, and significant trees.

14.1.5.7 Policy - Residential development on the Port Hills

Ensure that the development of greenfield land on that part of the Port Hills facing the Christchurch main urban area complements the natural landform and character of the hillside by ensuring that development:

(i) has a backdrop of a natural landform or vegetation when viewed from the flat land and coastline/coastal environment;

(ii) avoids buildings and structures on significant and outstanding skylines;

(iii) is of a density that provides ample opportunity for tree and garden planting to reduce the visual dominance of buildings within the hillside landscape

(iv) integrates well with existing residential areas and where possible provides connections to public open space;

(v) has regard to the location and scale of the principle building to reduce its visual dominance on the landscape;

(vi) if adjoining significant and outstanding natural landscape, conservation and biodiversity areas, remains compatible with these areas; and

(vii) where possible provides access to mahinga kai and places of cultural significance.

Appendix D

Letter from Fox Surveyors regarding Servicing

FOX AND ASSOCIATES

195 Peterborough St, Christchurch 8013
PO Box 895, Christchurch 8140

0800 FOX SURVEY
0800 369 787

info@foxsurvey.co.nz
www.foxsurvey.co.nz

To the Hearings Panel

LAND USE RECOVERY PLAN

CONCEPTUAL DESIGN AND SERVICING OF SITES

For: Cathedral City Holdings Ltd (CCHL)

Date: 29th May 2015

Prepared by: David Fox - Surveyor and Land Development Consultant

INTRODUCTION

I was responsible for the design and development of the 100 or so sections adjoining Harry Ell Drive back in the 1980's.
Harry Ell drive was constructed up to the rural zone boundary that existed at that time and which is still the residential /rural zone boundary at this point in time.

The balance land beyond the end of Harry Ell Drive is just a small block of land 6.8ha that is zoned rural. A cul-de-sac turning head was never constructed when we were undertaking the residential development back in the 1980's because it was envisaged by both CCHL and the Council obviously that Harry Ell Drive would be extended for some sort of residential use.

This 6.8ha site is not suitable for any valid or useful agricultural activity. It would be a sheer waste of resources for this land asset to just sit as waste land and not be used for some productive purposes. I believe that the conceptual proposal that we have produced for this land is the best use to which it could be put.

1. Development Concept

The intention is to extend Harry Ell Drive some 40 to 50 meters further up the slope and construct a turning head so that traffic on this road can turn in a normal traffic movement fashion.

A wide right of way could be constructed into the centre of the area identified for residential purposes. The right of way would be generous in width and have a very easy gradient.

The house sites would need to be located within a defined central portion of the site. The residential large lot (RLL) zoned sites would leave plenty of space for extensive and major planting.

A significant strip of land around the perimeter of this 6.8ha site would be gifted to the Council and this would enable a high degree of connectivity between the adjoining properties and pedestrian networks in the wider area.

2. Services

Enquiries were made at the City Council as to what the position was with services. I can confirm that both sewer capacity and domestic water supply services are available to serve this minor residential development. Storm-water treatment and storm-water disposal can be addressed on site. In summary the proposed development can be fully serviced.

3. Geo-tech and Landscape issues

A geo-tech consultant was engaged to provide a brief report on a site which clearly has no geo-technical issues .... he agreed this was so.
The landscape architects rather complex report came to the conclusion that there is no reason from a landscape point of view why the development should not proceed.

David Fox
Director
Fox & Associates Ltd
J:\ADMIN\DOF\DOF Misc\Land use recovery plan CCHL.docx

Appendix E

Preliminary Geotechnical Opinion

Tonkin & Taylor

Job No: 53806.000_ltr1
27 May 2015

Fox Associates
Po Box 895
Christchurch, 8140

Attention: David Fox

Dear David

Geotechnical Opinion for Plan Change Submissions. Harry Ell Drive, Cashmere

This letter provides Tonkin & Taylor's preliminary opinion on geotechnical and slope hazards issues related to the possible subdivision of land owned by Cathedral City Developments Ltd at the south end of Harry Ell Drive, Cashmere. T&T's opinion was requested by David Fox of Fox Associates, with respect to proposed plan change submissions.

The parcel of land (Pt Lot 1, DP11796, 6.8003ha) is a triangle approximately 300m wide by 300m long, approximately defined by an area of pine tree plantation south of Harry Ell Drive.

We are familiar with the subject land which is bounded on the west by the Victoria Park dog park and the east by a public walkway along the crest of the western side slope of Bowenvale Valley. The land slopes gently down to the east and northeast from the crest of the main Victoria Park ridge line. Loess soil overlies volcanic rock on the 1(V):4(H) to 1(V):10(H) slopes. An incised erosion gully drains from southwest to northeast across the middle of the site.

There are no existing rock fall, or medium to large landslide hazards evident on, or adjacent to the site. Normal Port Hills slope hazards including loess soil erosion (tunnel gully), areas of seepage, and small scale landslip can all be mitigated by civil engineering design that follows the principals of 'good hillside practice' for cuts, fills, drainage and retaining structures.

In T&Ts' opinion the proposed development is feasible from a geotechnical perspective. We expect, subject to an appropriate assessment, that a properly engineered development will meet the test of Section 106 of the RMA, in being 'not likely to accelerate, worsen or result in material damage to the land'.



Tonkin & Taylor Ltd - Environmental and Engineering Consultants, 39 Sarkhouse Rd, Wigram, Christchurch, New Zealand
PO Box 13-055, Christchurch, Ph: 64-3-363 2440, Fax: 64-3-363 2441, Email: chch@tonkin.co.nz, Website: www.tonkin.co.nz

This letter has been prepared for the benefit of Fox Associates with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement.

Yours Sincerely



Barry McDowell

Senior Engineering Geologist

Reviewed for Tonkin & Taylor Ltd by:

Grant Lovell

Principal, Business Leader - Land

MIPENZ, CPEng (Civil & Geotech)

28-May-15
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Appendix F

Landscape Advice

ANDREW CRAIG
LANDSCAPE ARCHITECT LTD

Advice

Poynton House I 68 Oxford Terrace I PO Box 109 I Christchurch 8140 **p** 03 377 0157 **m** 021 146 1092 **e** andrew@acla.co.nz

LAND USE RECOVERY PLAN REVIEW – LANDSCAPE ADVICE

For: Cathedral City Holdings Ltd

Date: 29 May 2015

Prepared by: Andrew Craig – Landscape Architect

INTRODUCTION

The landholder seeks to rezone for low density (10 x 1500m^2 lots) residential purposes land currently zoned Rural Port Hills.

The 6.8 hectare site is located above the existing residential area at Cashmere. The land is currently zoned rural with an 'Outstanding Natural Landscape' overlay.

Vehicle access is via Harry Ell Drive. Pedestrian access is from adjoining Elizabeth and Victoria Park. A public walkway runs along the eastern boundary of the site.

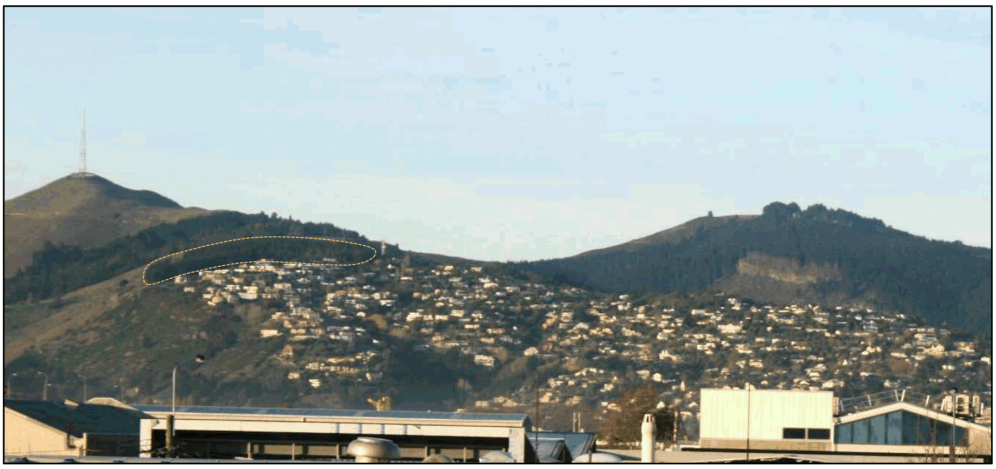

Figure 1 *The site – within yellow dashed line – at the top end of Cashmere as viewed from the Central City.*

What is the landscape character of the existing environment?

The landscape character of the site is summarised as follows:

1 The site is entirely rural as it is devoid of any buildings or any other significant structures.

2 Landcover (vegetation) is entirely exotic comprising mostly pines (*Pinus radiata*), Rank grass and woody weed species (broom for example) are also present – see Figure 2 photograph.



Figure 2 *Landcover within the site.*

3 Native vegetation is present but very scant (mostly Karo - *Pittosporum crassifolium)*.

4 Physical features include boundary fences, a short formed vehicle track and walking tracks.

5 Arising from the above points the landscape of the site is modified to a moderate degree, and therefore exhibits moderately high natural character.

6 There are no significant natural features within the site such as salient rock outcrops, water courses or bodies and native vegetation.

7 Topographically the site is more or less located at the apex of the Cashmere Spur. Land gradient steepens markedly to the east and flattens to very gentle gradients toward the apex.

8 There are no recognised (in the operative City Plan and proposed Replacement Christchurch District Plan) heritage features (buildings, sites or trees) and no significant ecological sites.

9 Amenity is moderate on account of rural character, moderate naturalness, open space and vegetation.

Are there any landscape constraints?

As mentioned, there are no significant or salient landscape features within the site. None of the vegetation is significant or important – indeed the prevailing pine forest degrades landscape character and amenity.

Also as mentioned, the site is regarded as part of a wider ONL overlay that applies to most of the Port Hills rural area. Rezoning for residential purposes will result in the irrevocable loss of that part of the ONL comprising the site. In my opinion the landscape character of the site is such that its contribution to the overall ONL is at the low end. That is, other parts of the ONL where rock outcrops, remoteness, native vegetation and distinctiveness are more significant compared to current site conditions.

What are the relevant Christchurch Replacement District Plan objectives and policies?

In the following discussion the objectives and policies relevant to landscape outcomes of the Christchurch Replacement District Plan are identified and briefly considered.

Replacement Plan (version dated 14/5/15)

8.1.1 Objective Natural and Built Environments

a. Significant natural features, landscapes, indigenous biodiversity and ecosystems, springs, significant trees, and historic heritage are protected or enhanced through the subdivision process.

It is apparent that regarding the listed features the Objective does not preclude the possibility of subdivision involving the features listed. Of these the only one of relevance is the '*…landscapes …'* as all others are absent from the site. The effects on the ONL will be discussed next as this is a concern raised in the following policy.

8.1.1.1 Policy – Natural features and landscapes

a. Ensure that subdivision and associated works shall achieve the long term protection and enhancement of:…

ii. outstanding natural features and landscapes, significant features and landscapes, important ridgelines;

The ONL component of the site will be diminished as will its naturalness due to the introduction of residential activity. Or to put it another way, the site will be further modified. It is my opinion that the landscape effects are not just confined to the site; that is the wider context of the site is an important consideration. Within that (the Rural Port Hills) the site is relatively insignificant arising from its modest extent (6.8ha). Further it is contiguous with the existing residential area and so will appear as a relatively minor extension to it. Or to put it another way, the site is not an isolated entity within the rural Port Hills. Nonetheless, I acknowledge that diminishment of the ONL is a landscape cost. I further understand, regarding RMA s6(b), that subdivision within ONLs can be entertained provided it is not inappropriate.

The policy however, is not only concerned with protection, but also enhancement. Enhancement will result via a remediation process entailing the removal of the existing pine plantation. Further enhancement will involve the creation of a native vegetation buffer enclosing the site along its rural boundary.

iii. significant indigenous vegetation and / or indigenous fauna, including sites of ecological significance.

None of the features listed exist on site.

8.1.1.3 Policy - Environmental Compensation

a. Apply the concept of environmental compensation where net benefit would arise from a subdivision proposal occurring within outstanding natural features and landscapes, significant natural features and landscapes, sites of ecological significance, and in relation to heritage items and settings, and significant trees.

The '*…net benefit…'* will result from the aforementioned native vegetation buffer and the removal of the pine plantation mono-culture. This will result in enhancement of the existing

walkway along the eastern boundary of the site and proposed pedestrian access linking Elizabeth Park (and ultimately Victoria Park) with Harry Ell Drive.

14.1.5.7 Policy - Residential development on the Port Hills

Ensure that the development of greenfield land on that part of the Port Hills facing the Christchurch main urban area complements the natural landform and character of the hillside by ensuring that development:

(i) has a backdrop of a natural landform or vegetation when viewed from the flat land and coastline/coastal environment;

The landscaped buffer will provide a vegetated backdrop. Selected pines will be retained however to ensure such a backdrop exists from the outset of development while the native planting matures.

The landform backdrop will exist from most vantage points, but it is acknowledged there will be some points from where dwellings will intrude the skyline. To help minimise this potential effect, future home owners will be required to locate dwellings away from the spur apex.

(ii) avoids buildings and structures on significant and outstanding skylines;

The most important Port Hills skyline is that of the summit ridge as it forms the backdrop to the City. Many spurs radiate from the ridge including that of Cashmere. It too is an important ridge[1] but not to the same degree as that of the summit. As for all spurs their landscape significance lessens more or less in correspondence with decreasing elevation. Or to put it another way, the landscape generally becomes increasingly modified, particularly on the spurs where most Port Hills residential activity occurs.

(iii) is of a density that provides ample opportunity for tree and garden planting to reduce the visual dominance of buildings within the hillside landscape

The 10 large lots proposed (1500m^2) in combination with buffer planting of the balance land (4.8ha) will enable and therefore ensure there is ample opportunity for tree and garden

[1] The Banks Peninsula section of the operative City Plan specifically identifies on its planning maps important ridges. These however are outside of the area of concern.

planting, thereby reducing building dominance. This effect will improve as vegetation matures over time.

> *(iv)integrates well with existing residential areas and where possible provides connections to public open space;*

The site is contiguous with the existing residential area and so will be integrated with it. Site design will include the aforementioned walkways which will connect others beyond the site. Vehicle access will involve cul de sac extension of Harry Ell Drive thereby formally terminating the road.

Further integration will involve the native buffer planting reinforcing that in the adjoining Elizabeth Park and Victoria Park beyond.

> *(v) has regard to the location and scale of the principle building to reduce its visual dominance on the landscape;*

Principal buildings will be the dwellings. The site plan has been designed in such a way that these are optimally located so as to minimise potential adverse effects. At the subdivision stage this will include the identification of building platforms so as to ensure desired outcomes are achieved.

> *(vi)if adjoining significant and outstanding natural landscape, conservation and biodiversity areas, remains compatible with these areas; and*
> *(vii) where possible provides access to mahinga kai and places of cultural significance.*

The relationship between the proposed residential zone and surrounding rural ONL land will fundamentally remain the same as the current situation – that is; residential activity abuts the rural ONL. The only difference is that the boundary is shifted, while in generic terms the adjoining activity stays the same.

Nearby places of cultural significance – Elizabeth, Victoria and Bowenvale Parks and Cracroft Reserve (incorporating the *Sign of the Takehe*) will access enhanced due the presence of existing and proposed pedestrian access through the site – see Figure 3 map below.

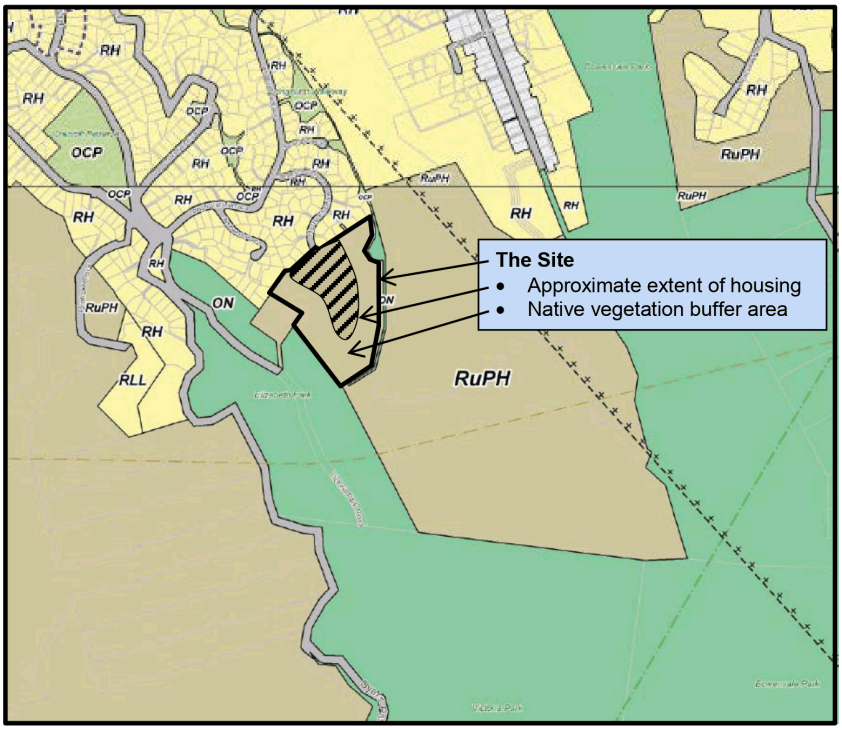

Figure 3 *The location of the site is identified on the above combined Stage 2 Planning Maps 46 & 51*

What are the landscape advantages and disadvantages?

In the following discussion the advantages (benefits to the landscape) and disadvantages (costs to the landscape) of re-zoning are identified and considered.

Advantages

1 *Remediation*

The current land use is entirely devoted to exotic pine plantation forest. This is a mono-culture that is not conducive to providing for native fauna; particularly birds such as bellbird and wood pigeon which occur in the area. Re-zoning would result in removal of the pine plantation and introduction of native vegetation (in the form of a managed transition) within the buffer area surrounding the site along its rural boundary. This buffer would be vest in Council therefore providing a permanent unassailable urban / rural boundary. Residential activity will also

result in diverse vegetation which better serves wildlife than the current pine plantation.

2 *Enhancement*

Removal of the pine plantation to be replaced by low density housing will better achieve the contrast between rural and urban Port Hills landscape. This will also aid apparent coherence of both the rural and residential environments where the quality of each is defined by the contrast between them.

The native plantings within the buffer area will extend and reflect existing patterns of native vegetation occurring in nearby Victoria Park.

3 *Contiguousness*

Future dwellings will be contiguous with the existing residential area and so will appear as a continuation of it. Consequently current development patterns will be maintained, even though their extent is altered. For this reason residential activity within the site would not be unexpected – that is, it would not be out of keeping with existing patterns. Consequently there would be little or no adverse associative effect.

4 *Pedestrian access*

An existing pedestrian accessway exists along the east boundary of the site. Subdivision will include additional pedestrian access alongside the northern boundary linking Harry Ell Drive to Victoria Park. The combination of these walkways with the native planting within the buffer area will enhance people's appreciation of the Port Hills environment and the presence of wildlife while better enabling recreation.

Disadvantages

1 *Diminished Outstanding Natural Landscape*

The subject site is currently within the Rural Port Hills zone which carries an 'Outstanding Natural Landscape' (ONL) overlay. It is therefore subject to RMA s6(b) which seeks protection of such landscapes from inappropriate subdivision, use or development. Rezoning will result in a relatively minor reduction of the ONL area.

2 *Diminished rural area*

As for the ONL, rezoning will result in some loss of the rural landscape. This will be confined to the new lots, and excludes the proposed buffer area which will remain rural in character.

3 *Skyline intrusion*

From certain vantage points dwellings will intrude the skyline. This effect currently occurs in many areas throughout the Port Hills.

Conclusion

In landscape terms there are clearly costs and benefits arising from the proposed re-zoning. As is the case with all land use proposals, context is the key consideration. As identified and considered in the foregoing discussion it is evident that there exist favourable conditions – contiguousness, remediation, modest size, the lack of significant site features, good access and the enhancement opportunity involving the planting most of the site with indigenous re-vegetation. Further enhancement will accrue from the removal of the pine plantation thereby improving landscape coherence and consistency – that is, adopting the prevailing land cover character of both the urban and rural environments.

The chief cost is lessening of the ONL, where in this case the primary landscape value is loss of vegetated open space. As mentioned, this is not of a particularly high quality due to the presence of pine plantation which almost entirely occupies the site. Further, the area lost from the ONL will be small relative to its overall extent.

There will be no adverse amenity effects arising from development following re-zoning. The reason is that modern housing on large lots will be high quality. The large lots will further enable large scale planting which will further provide amenity.

Overall, it is my opinion that the land use and its effects arising from the proposed re-zoning will, on balance, be appropriate in landscape terms given the circumstances discussed above.

Andrew Craig
Landscape Architect
29 May 2015

Appendix C

Closing legal submissions for CCDL Stage 2 Christchurch Replacement District Plan

BEFORE THE INDEPENDENT HEARINGS PANEL

UNDER	the Resource Management Act 1991 and the Canterbury Earthquake (Christchurch Replacement District Plan) Order 2014
AND	
IN THE MATTER	of the Proposed Christchurch Replacement District Plan
SUBMITTER	Cathedral City Development Limited
	(Submitter 2129)

CLOSING LEGAL SUBMISSIONS ON BEHALF OF CATHEDRAL CITY DEVELOPMENT LIMITED

16 SEPTEMBER 2015

ANDERSON LLOYD
LAWYERS
CHRISTCHURCH

Solicitor: J M Crawford
(jen.crawford@andersonlloyd.co.nz)

Anderson Lloyd House,
Level 3, 70 Gloucester Street,
PO Box 13831,
CHRISTCHURCH 8141
DX WX10009
Tel 03 379 0037
Fax 03 379 0039

JMC-906779-4-17-V1

May it please the Panel:

1. **INTRODUCTION**

1.1 These closing submissions are made on behalf of Cathedral City Development Limited (Submitter 2129) (**CCDL**) in respect of the proposal for the Residential Chapter (part) in the Proposed Christchurch Replacement Plan (**the Replacement Plan**).

2. **SITE-SPECIFIC REZONING REQUEST**

2.1 CCDL adopts the legal submissions made on behalf of Castle Rock Limited in relation to broader policy and statutory considerations.

2.2 Putting aside for one moment the higher order policy issue, the Council has undertaken an assessment of the merits of this request and now supports the rezoning of this site.

2.3 Ms Sarah Oliver confirmed during questioning that the initial issues around servicing have now been resolved; and also confirmed that the Council's landscape expert, Mr Craig, essentially agrees with Mr Head when it comes to landscape considerations.[1]

2.4 The Council's position with respect to CCDL is that, but for Ms Oliver's interpretation of higher order policy matters, the Council would have no problems from a planning perspective in rezoning that site.[2]

2.5 There is no evidence that the rezoning of the CCDL site would have a cumulative effect (actual or potential). Nor is there any precedent issue associated with allowing this specific rezoning request. In my submission, in comparison with an application for resource consent, it is questionable whether the issue of precedent arises for consideration in these proceedings.

2.6 Counsel for the Council identified some possible options to enable rezoning of the CCDL site at paragraph 4.15 of Ms Scott's closing legal

[1] Transcript, page 158, lines 34-43.

[2] Transcript, page 159, lines 3-7.

submissions. This has been given consideration and is addressed below.

2.7 Ms Aston included in her evidence a suggested Replacement Plan rule to ensure that the maximum permitted site density was under 5,000m^2 so that the development did not fall within rural residential development (which is defined as being 1-2 households per ha). This is outlined in **Attachment A** and is intended to ensure consistency with Policy 6.3.9 of the CRPS. Although not the preferred option, if considered necessary, an alternative rule is also provided that enables a dwelling to be established on the existing undersized title which is 6.8ha in area and would ensure no possible conflict with Objective 6.2.1(3) or Policy 6.3.1(4) of the CRPS.

Date: 16 September 2015



J M Crawford
Counsel for Cathedral City Development Limited

JMC-906779-4-17-V1:mtb

Attachment A – pRDP – Rules

Preferred Relief:

14.12.3.2 Site Density

Each residential unit shall be contained within its own separate site. The site shall have a minimum net site area as follows:

	Area	Standard
f	***Cashmere Outline Development Plan in Appendix 14.10.36***	***1,500m² with a maximum net site area of 4,900m².***

Possible Alternative Relief:

14.12.3.2 Site Density

Each residential unit shall be contained within its own separate site. The site shall have a minimum net site area as follows:

	Area	Standard
f	***Cashmere Outline Development Plan in Appendix 14.10.36***	***One dwelling per certificate of title existing on 2/5/15***

Submission No: 043

aston CONSULTANTS
resource management & planning

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

Red Spur Ltd

November 2018

Greater Christchurch Partnership

Submitter Details

Name: Red Spur Limited
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

I wish speak at the hearings.
Preferred location: Christchurch City
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background and Site

The submitter Red Spur Ltd ('the Submitter') owns or has interests in land at 12 Redmund Spur Road, legally described as Lot 43 DP512456 (93.34ha) and Part Lot 1 DP2905 (9.88ha). Lot 43 DP512456 is located to the south of the existing Residential Hills zoned land – Redmund Hill and east of the existing Residential Hills zoned land - Upper Kennedys Bush land. Part Lot 1 DP2905 is located on the southern side of Kennedys Bush Road and adjacent to the Quarry Hill Development.

The Submitter wishes to 'future proof' the Redmund Spur and Quarry Hill subdivisions by providing a roading link between the two subdivisions with sufficient sections alongside the link to fund the construction and consequential development costs (see further discussion below). **Our Space** has a 30 year time horizon (to 2048). It is intended that the roading link will be provided with in this timeframe. Whilst it will be one of the last stages of the overall subdivision development (it is at the upper end), it is anticipated that the subdivision will completed within the next 30 years.

The Redmund Spur subdivision is zoned Residential Hills and has a Mixed Density Overlay. This provides for a maximum of 400 lots, with a minimum of 30% of sites with a minimum net site area of

1500m[21]. The proposed 'roading connection' zoning extension is currently zoned Rural Port Hills. It is within an Area of Outstanding Landscape (ONL 38.3) apart from a small portion at the top of Quarry Hill which is within Rural Amenity Landscape 11.4 – see Planning Maps below.

ONL 38.3 relates to the mid to upper slopes of Western Port Hills and seeks to retain (amongst other matters) special features such as the Port Hills distinctive volcanic landform, skyline (forms an important visual backdrop to Otautahi/Christchurch), a natural landscape characterised by openness and a general absence of human-made structures on the upper slopes and ridges, the presence of important areas of indigenous vegetation and a predominance of natural features, processes and patterns and farming with existing development generally well integrated into the landscape.

RAL 11.4 relates to the mid to lower slopes Kennedy's Bush Spur. Special features identified in the District Plan in respect of the RAL – Port Hills pertains to their important visual backdrop to Christchurch District and their major recreation resource for the city's residents and visitors.

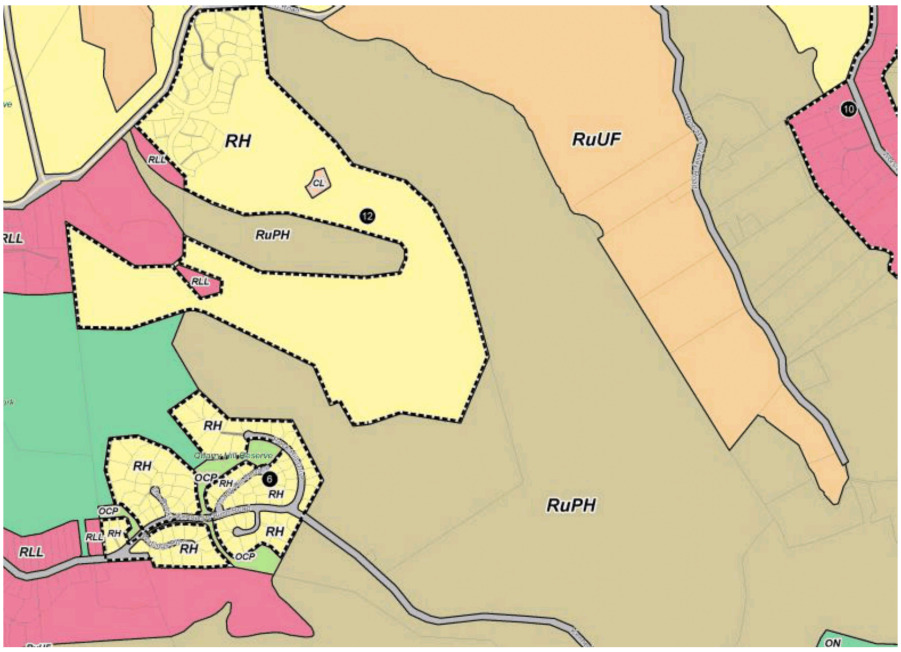

Figure 1: Zoning

[1] Christchurch District Plan Rule 14.7.2.1

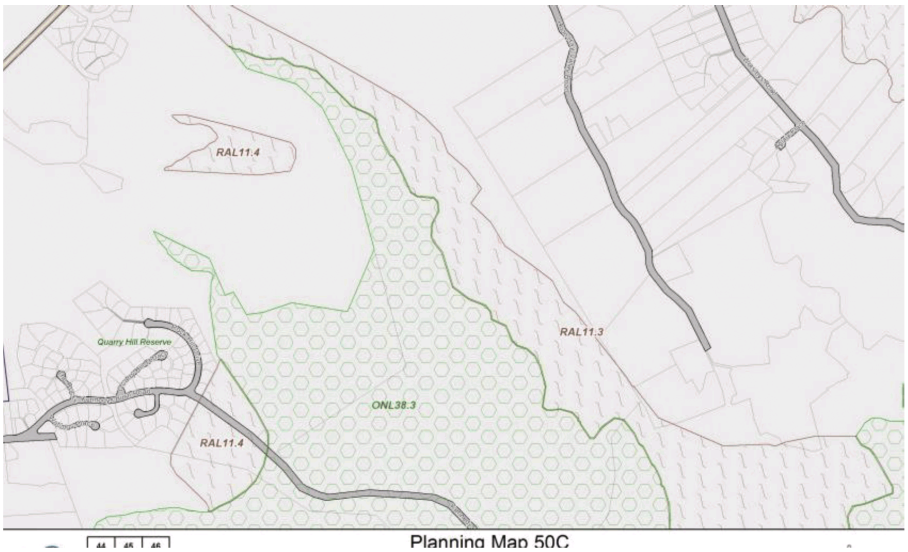

Fig 2: Natural and Cultural Heritage

Development Proposal

An overall preliminary concept plan and proposed zone areas for the Redmund Spur subdivision is attached as **Appendix A**. The areas marked as yellow represent the proposed area to be rezoned from Rural Port Hills (RPH) to Residential Hills (RH) Mixed Density Overlay to support the Kennedys Bush Road link to Redmund Spur (10.9ha in total). The existing RH zone area is 56.9ha, with 400 sections or 7 sections per hectare – applying this ratio to the proposed additional areas gives a development yield of 76 sections.

Extension to Zoning to Facilitate Connectivity Between Upper Kennedys Bush and Redmund Spur

Red Spur's surveyors and land development consultants (Fox & Associates) have been in discussion with Christchurch City Council officers for some time regarding a proposed extension to the Residential Hills zoning, to facilitate provision of a roading link between the two subdivisions. The proposed zoning extension comprises approximately 11 ha of land, sufficient to accommodate enough residential sections to fund the roading link and other costs such as provision of services, Development Contributions and proposed revegetation areas relating to the development of residential sections. The proposed new zone boundaries relate to the local topography and avoid prominent visual areas.

The roading link is essential to facilitate best practice urban design, which includes the principles of integration and connectivity, and to provide alternative emergency access. The intention is to avoid a 'repeat' of other hillside residential subdivisions, such as Richmond Hill and Westmorland which is a substantial residential subdivision with, until the most recent stage of development, a sole vehicle entry and exit point, along Cashmere Road.

In keeping with the Redmund Spur RH zoning and mixed density overlay, the proposed zoning would enable a wide range of lot sizes to facilitate a more 'mixed demographic' neighbourhood, with lot sizes ranging from 150m^2 to 3000m^2. A minimum of 30% of sites would be have a minimum average site area of 1500m^2. A 'pepperpotting' of densities is proposed.

The proposal would further include possible environmental enhancement measures including a walkway link between existing mountainbike tracks and walkways that will link the proposed road extension with Halswell Quarry Park, and indigenous planting in gully areas (as shown on the Concept Plan attached as **Appendix A**)

A submission was filed on Stage 2 of the Proposed Christchurch Replacement District Plan seeking appropriate zoning to enable development in accordance with the proposed development concept and zoning extension. The proposed roading extension (marked yellow) was later withdrawn from the Stage 2 submission as the intended development timeframe was beyond the District Plan timeframe of 10-15 years.

Suitability of Land for Development

Attached as **Appendix B** is a letter from Fox Surveyors which confirms that there are no servicing constraints to development of the proposed zoning extension.

Tonkin and Taylor have undertaken a preliminary 'walk over' of the Site and advise that there are unlikely to be any geotech or other natural hazard constraints to development of the Site, under the provisions of s106 of the Resource Management Act 1991 (see **Appendix C**).

Landscape Values

Andrew Craig, landscape architect assessed the landscape and natural values of the Site at the time of the Christchurch Replacement District Plan Review and concluded that the proposed roading link and associated land use and the effects arising from the proposed re-zoning will, on

balance, be appropriate in landscape terms. There exist favourable conditions – contiguousness, remediation, modest size, the lack of significant site features, good access and the enhancement opportunity involving the planting in the vicinity of the site with indigenous re-vegetation in this case, and only a relatively small area of ONL will be lost.

There will be no adverse amenity effects arising from development following re-zoning. The area proposed for re-zoning is well below the skyline of the most prominent local landscape feature and as with both the Quarry Hill and Redmund Spur developments, building covenants attached to the titles will ensure that the modern housing will be high quality. (see **Appendix D**).

Policy 9.2.2.2 of the Christchurch District Plan is relevant:-
Recognise the qualities of the identified outstanding natural landscapes described in Appendix 9.2.9.1.2 and protect them from inappropriate subdivision, use and development by:

(i) avoiding use and development that breaks the skyline, including the crater rim, ridgelines on Banks Peninsula and the radial spurs of the Port Hills;

(ii) avoiding subdivision, use and development in those parts of outstanding natural landscapes with little or no capacity to absorb change, and allowing limited subdivision, use and development in those areas with higher potential to absorb change;…

Policy 9.2.2.2 seeks to preclude inappropriate development not all development. The proposed Residential Port Hills zoning extension is located below rather along a ridgeline or radial spur. However, as with virtually all development on the Port Hills, it will break the skyline when viewed from some very specific local vantage points. As noted by Andrew Craig, the Site also has the ability to absorb change. Policy 9.2.2.2.2 therefore does not seek to preclude the Site from development.

Other Positive benefits

Emergency Access

The 2010 and 2011 Canterbury earthquakes sequence and the more recent Port Hills fires have highlighted the importance of having emergency access and evacuation routes at times of extreme, and/or unanticipated natural events. Appropriate emergency access should preferably be available for all urban areas, including on the Port Hills. Creating a roading link between the Redmund Spur and Upper Kennedys Bush subdivisions is essential for this purpose.

The epicenter of the major February 2011 earthquake event was at Heathcote on the lower Port Hills. The neighbouring suburb of Clifton was completely 'cut off', apart from limited 4WD access across the adjoining rural Richmond Hill farmland. Evans Pass Road between Sumner and Lyttelton remains closed, 7 years later.

Developments outside and changes to Rural/Urban Boundary

An unfortunate consequence of a fixed rural/urban boundary line in the CRPS and on **Our Space** Fig 16 and an associated objective and policy framework which requires 'avoidance' of urban activities outside that line (CRPS Objective 6.2.1 and Policy 6.3.1), is there is in effect, no flexibility to respond to anomalies, or meritorious boundary changes which do not offend the overall urban growth management approach of **Our Space** and the Canterbury Regional Policy Statement (CRPS). Suggested policy wording is included in the Relief Sought below to address this issue.

The **Our Space** urban growth management approach is intended to provide certainty as to where development will take place to enable planning for and development of infrastructure required for projected urban growth; to protect key strategic infrastructure such as strategic transport networks; and to ensure development is appropriately located in terms of potential environmental effects.

Relief Sought:

Additions are shown in bold and underlined and deletions as strike through.

1. Amend Fig 16: Proposed locations of future development areas in Greater Christchurch by as follows:-
   - Amend to include the proposed area to be rezoned from Rural Port Hills to Residential Hills (Mixed Density Overlay) as shown in yellow on the **Appendix A** Fox & Associates plan titled 'Proposed Zone Area – Redmund Spur, Cashmere Road, Halswell as 'Existing Urban Area'.

2. 6.2 Schedule of future work
   Amend 8 (page 34) as follows:-
   Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement:-

- amending Map A to be consistent with the relief sought in this submission (including 1. above and 3. below); and
- provide flexibility to accommodate meritorious proposals for urban development and zoning and to facilitate a responsive planning approach by amending and adding to the objectives and policies as follows (insertions in bold and underlined):-

Add new Policy 6.3.1A as below:-

Policy 6.3.1 A

(a) Enable urban development or zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

(i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

(ii) Any additional land will integrate with the provision of infrastructure; and

(iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

(iv) The urban development or extension will have beneficial planning outcomes; and

(v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritorious proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land capacity assessments which have informed Map A, and with the primary drivers and influencers of urban development in Greater Christchurch.

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 **or which has only minor**

or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach;

6.3.1 Development within the Greater Christchurch area
In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS **or have minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.7 Residential location, yield and intensification
In relation to residential development opportunities in Greater Christchurch:

7. Subject to Policy 5.3.4, residential greenfield priority area development shall occur **generally** in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.

3. Remove the rural/urban boundary line shown on CRPS Map A and **Our Space** Fig 16 (defined as the outer edge of Green Field Priority Areas, Existing Urban Areas and Special Housing Areas) and insert in the relevant District Plans, with appropriate criteria for assessments of proposals to amend 'the line' included in the CRPS and District Plans; or as a less preferred alternative, other methods to retain flexibility and 'future proofing' to respond to meritorious housing and business development proposals which give effect to the NPS-UDC but are not recognized or provided for in **Our Space** and supporting documents.

4. Consider streamlined RMA or other streamlined processes to facilitate the amendments sought which are specific to the Submitter's land and potentially other meritorious rural/urban boundary changes, and associated policy wording. Do not use streamlined processes for implementation of the overall **Our Space** strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

5. Consider other amendments to the CRPS and other documents and other actions which

are appropriate to facilitate a responsive planning approach to management of urban growth of Greater Christchurch.

6. Such other consequential, additional or other amendments to Chapter 6 of the RPS and other documents, and any other actions, to be consistent with and give effect to the above, including directing consequential amendment to the Christchurch District Plan to rezone land from Rural Port Hills to Residential Hills (Mixed Density Overlay) as shown in yellow on the **Appendix A** Fox & Associates plan titled 'Proposed Zone Area – Redmund Spur, Cashmere Road, Halswell.

Reasons for Relief Sought:-

1. For the reasons set out above and under the responses to the Submission Form questions below.
2. The housing and business development capacity targets, urban form outcomes, and Schedule of Future Work measures (including change to the CRPS) contained in **Our Space** will have a profound and defining effect on the Greater Christchurch settlement pattern for the next 30 years. There will be significant flow on effects for the local, regional and potentially national economies. There is an acknowledged high level of uncertainty with the housing and business development capacity targets; and the adopted approach is aspirational and untested with its focus being redevelopment and intensification of existing urban areas, underpinned by an as yet unfunded *"vision for transformation of the transport network that fosters much greater pubic and active transport usage, and reduced reliance on the private vehicle".* Despite all this, there is no s32 assessment accompanying Our Space.
3. The amendments sought will enable the Submitter as owners of 12 Redmund Spur Road and their adjoining land to use and develop the land in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).
4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects 12 Redmund Spur Road, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.
5. The **Our Space** development capacity targets are uncertain and likely to be inaccurate and are based on a flawed methodology. With respect to hillside developments, it is likely that

some of the existing zoned hill areas will not be practical, economic or feasible to develop, including due to geo-tech, access and other physical constraints.

6. The proposed rezoning will have significant public benefits, in particular 'future proofing' the neighbouring Redmund Spur and Quarry Hill/Kennedys Bush subdivisions by adopting practical urban design principles including providing a roading link between the two subdivisions and alternative emergency access.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

There needs to flexibility to respond to meritorious changes to the urban/rural boundary not just at the major centres of Rolleston, Rangiora and Kaiapoi. **Our Space** and the CRPS are 'high level' documents which do not consider locationally specific factors which impact on appropriate zoning decisions at the local level. See also the discussion above regarding need for flexibility and responsive planning.

Question 2:

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.

Do you agree with this approach and why?

Response:

There needs to be an ability to provide mixed density neighbourhoods in many places – to respond to local site and amenity characteristics and to ensure a mixed demographic which has positive social and economic benefits. The proposed development will be 'mixed density'.

Question 3:

Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.
What elements should be included in this action plan?

Response:
No comment. The submitters are not housing providers.

Business Growth
Question 4:
Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.
Do you agree with this approach and why? What further measures would support such development?

Response:
No comment. The submitters do not seek commercial development with this application.

Question 5:
The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.
Do you agree or disagree this is sufficient and in the right location and why?

Response:
No comment. The submission does not address industrial business.

Growth needs
Question 6:
The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.

Do you agree or disagree with this evidence base and why?

Response:
See comments above. With respect to hillside developments, it is likely that some of the existing zoned hill areas will not be practical, economic or feasible to develop, including due to geo-tech, access and other physical constraints.

Transport and other infrastructure

Question 7:
Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.
Do you agree or disagree with this approach and why?

Response:
Addition of a road linkage with the associated provision of mixed density housing will provide better access and more people for any public transport initiatives in this area.

Question 8:
Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.
Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:
The existing Redmund Spur development has already necessitated infrastructure planning particularly with regard to provision of potable water supply in this area. An extension of this planned facility will be possible. It is noted that there are no other infrastructure constraints affecting the development proposal.

Other

What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

Response:
No further comments other than as noted above.

Appendices

Appendix A: Preliminary concept plan and zone areas

Appendix B: Letter from Fox & Associates re Servicing

Appendix C: Letter from Tonkin & Taylor re Site Suitability in relation to Natural Hazards

Appendix D: Landscape assessment (Andrew Craig)

Appendix A

Preliminary concept plan and zone areas

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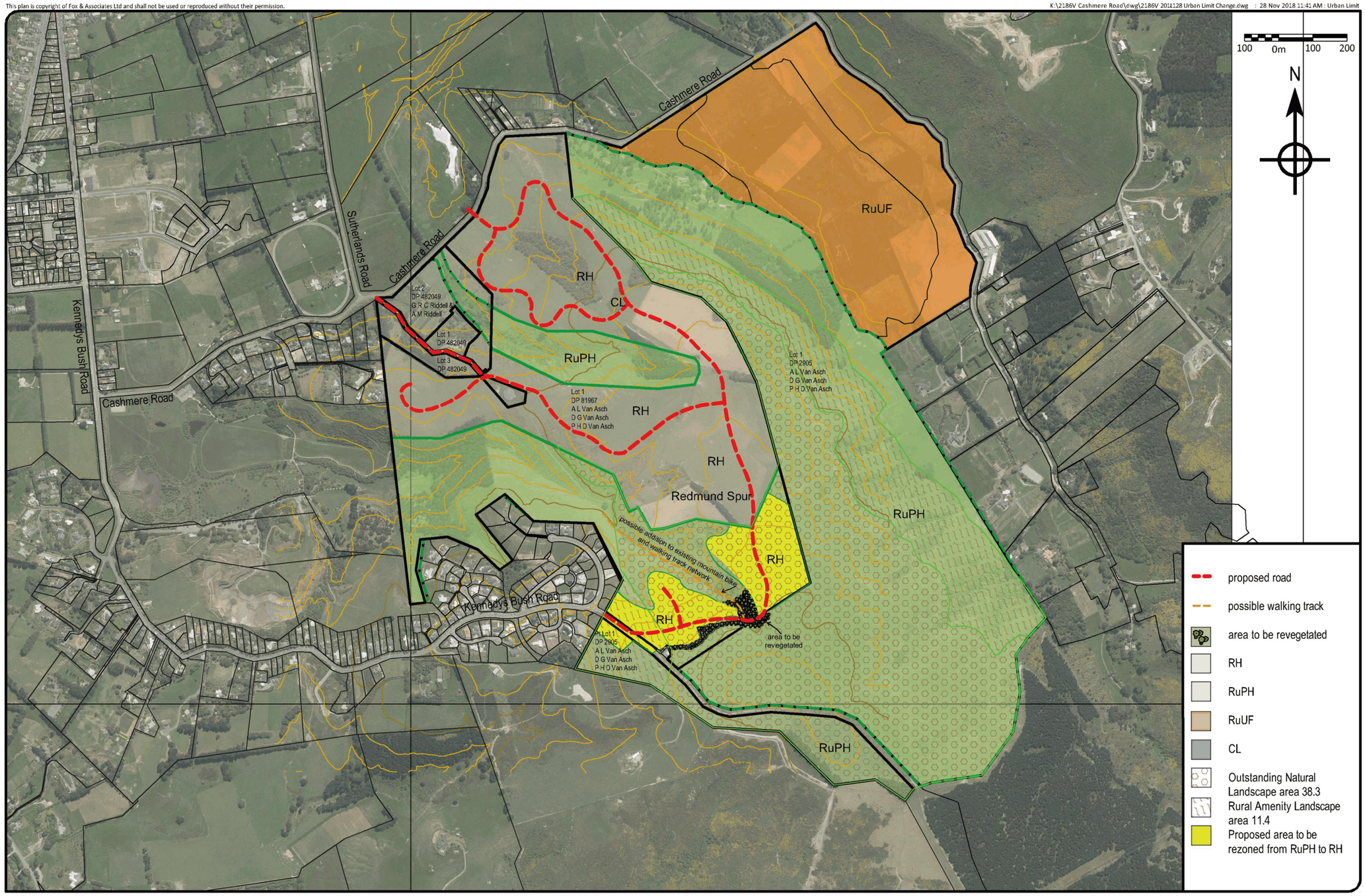


FOX AND ASSOCIATES
creating legacies with land
www.foxsurvey.co.nz
0800 FOX SURVEY
P.O.Box 895
CHRISTCHURCH

Proposed Zone Areas

Redmund Spur, Cashmere Road, Halswell

Address:

Consent No:

No.	Revision	Appd	Date
G			
F			
E			
D			
C			
B	New ONL, RAL areas shown	MJM	28/11/18
A	Proposed zone extension area reduced	CAF	30/07/15

Scale (A1)	1:5,000
Reduced (A3)	1:10,000
Designed	DOF
Drawn	LJW
Checked	
Date	30 July 2015
Job No.	2186V.01
Sheet No.	1 of 1
Rev.	B

Appendix B

Letter from Fox & Associates - Servicing

Date
28 November 2018

Job Number
2186V.01

195 Peterborough St, Christchurch 8013
PO Box 895, Christchurch 8140

0800 FOX SURVEY
0800 369 787

info@foxsurvey.co.nz
www.foxsurvey.co.nz

SUBMISSION ON
GREATER CHRISTCHURCH SETTLEMENT UPDATE – OUR SPACE 2018-2048

CONCEPTUAL DESIGN AND SERVICING OF RESIDENTIAL DEVELOPMENT AREA

At: Kennedys Bush Rd, Redmund Spur Rd, Kitcheners Knoll Rd

For: Red Spur Ltd

Date: 28th Nov 2018

Prepared by: Michael Martin - Surveyor and Land Development Consultant

Introduction

Our client's family has owned the land and run a farming operation on Redmund Spur between Hoon Hay Valley and Kennedys Bush Road for more than sixty years. The Quarry Hill Subdivision at the top of Kennedys Bush Rd was developed starting 20 years ago. The Redmund Spur area adjacent to Cashmere Rd was rezoned some 15 years ago, and development of this area commenced in 2015.

At the top of the areas currently zoned for development there is an area that could be developed to allow a road connection between the two spurs thereby linking the 2 residential areas.

We consider that completing the road between Kennedys Bush and Redmund Spur is a logical thing to do and will benefit the combined areas. During emergency events (e.g. the recent fires and earthquakes) having dual access provides redundancy for egress and access to these areas.

Unfortunately, roading is not cheap and in addition the road must pass through some steep terrain at the highest point. Developing the adjacent land will assist with the funding of the road construction.

There is a limited number of sites capable of being developed on the Port Hills. Some of the existing Port Hills land zoned for residential development has constraints that mean it will not be developed. The Redmund Spur area has zoning for 400 sections in total with 360 lots remaining. These lots sell at an average of 15 per year. This gives a theoretical 24 years of supply.

The Urban Limit is being set in place for the next 30 years. We consider that allowing the proposed extension to the residential development will allow more sections to be supplied to this geographically constrained market for almost 30 years.

Services
Sewer can be extended from the existing developments (Quarry Hill and Redmund Spur) below the proposed development area.

Stormwater: this area drains to an existing stormwater and retention area just upstream of the Halswell Quarry Reserve. The capacity of this existing system can be increased to deal with the additional storm water runoff draining from the proposed development area.

The storm water treatment and retention area I am referring to is still owned by our client.

Water Supply: We have already established a reservoir to serve the Kennedys Bush road area. We will be establishing two more reservoirs to service the existing zoned land and these additional reservoirs will also be capable of providing a domestic water supply to the additional sections abutting the proposed new connecting road.

Power and Telecommunication reticulation can be extended from the existing residential areas adjacent to the proposed development area.

Constraints
The proposed development area has similar Geotech characteristics to the adjacent development and we do not anticipate additional natural hazards for the new residential area.

We consider that the rezoning of this area is a logical extension of the existing residential areas and will enable desirable connectivity for this suburb, and help cater for the hillside allotment supply requirements.

Yours faithfully



Michael Martin | Registered Professional Surveyor
Fox & Associates Ltd
K:\2186V.01 Cashmere Rd Planning\WordDocs\2186V.01 20181129 Urban Limit.docx

Appendix C

Letter from Tonkin & Taylor re Site Suitability in relation to Natural Hazards

Tonkin & Taylor

Job No: 51887.005_ltr2
27 May 2015

Rock Hill Ltd
681 Cashmere Road
Christchurch 8025

Attention: Dan van Asch

Dear Dan

Geotechnical Opinion for Plan Change Submissions. Redmund Spur, Halswell

This letter provides Tonkin & Taylor's preliminary opinion on geotechnical and slope hazards issues related to a proposed road link between Kennedys Bush Road and Redmund Spur subdivision. T&T's opinion was requested by David Fox of Fox Associates on behalf of Rock Hill Ltd, with respect to proposed plan change submissions.

Preliminary road alignments are shown as pink and green dashed lines on the Fox Associates plan attached to this letter.

We are familiar with the land traversed by the proposed road alignment. Loess soil overlies volcanic rock on the 1(V):6(H) to 1(V):10(H) slopes of Redmund Spur. Loess soil and surface outcrops of volcanic rock will be encountered in traversing across 1(V):3(H) slopes to the existing Kennedys Bush Road.

There are no existing rock fall, or medium to large landslide hazards evident along the proposed road alignment. Normal Port Hills slope hazards including loess soil erosion (tunnel gully), areas of seepage, and small scale landslip can all be mitigated by civil engineering design that follows the principals of 'good hillside practice' for cuts, fills, drainage and retaining structures.

In T&Ts' opinion the proposed development is feasible from a geotechnical perspective. We expect, subject to an appropriate assessment, that a properly engineered development will meet the test of Section 106 of the RMA, in being 'not likely to accelerate, worsen or result in material damage to the land'.



Tonkin & Taylor Ltd - Environmental and Engineering Consultants, 3 Clarkhouse Rd, Wigram, Christchurch, New Zealand
PO Box 13-055, Christchurch, Ph: 64-3-363 2440, Fax: 64-3-363 2441, Email: chch@tonkin.co.nz, Website: www.tonkin.co.nz

This letter has been prepared for the benefit of Rock Hill Ltd with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement.

Yours Sincerely



Barry McDowell

Senior Engineering Geologist

Reviewed for Tonkin & Taylor Ltd by:

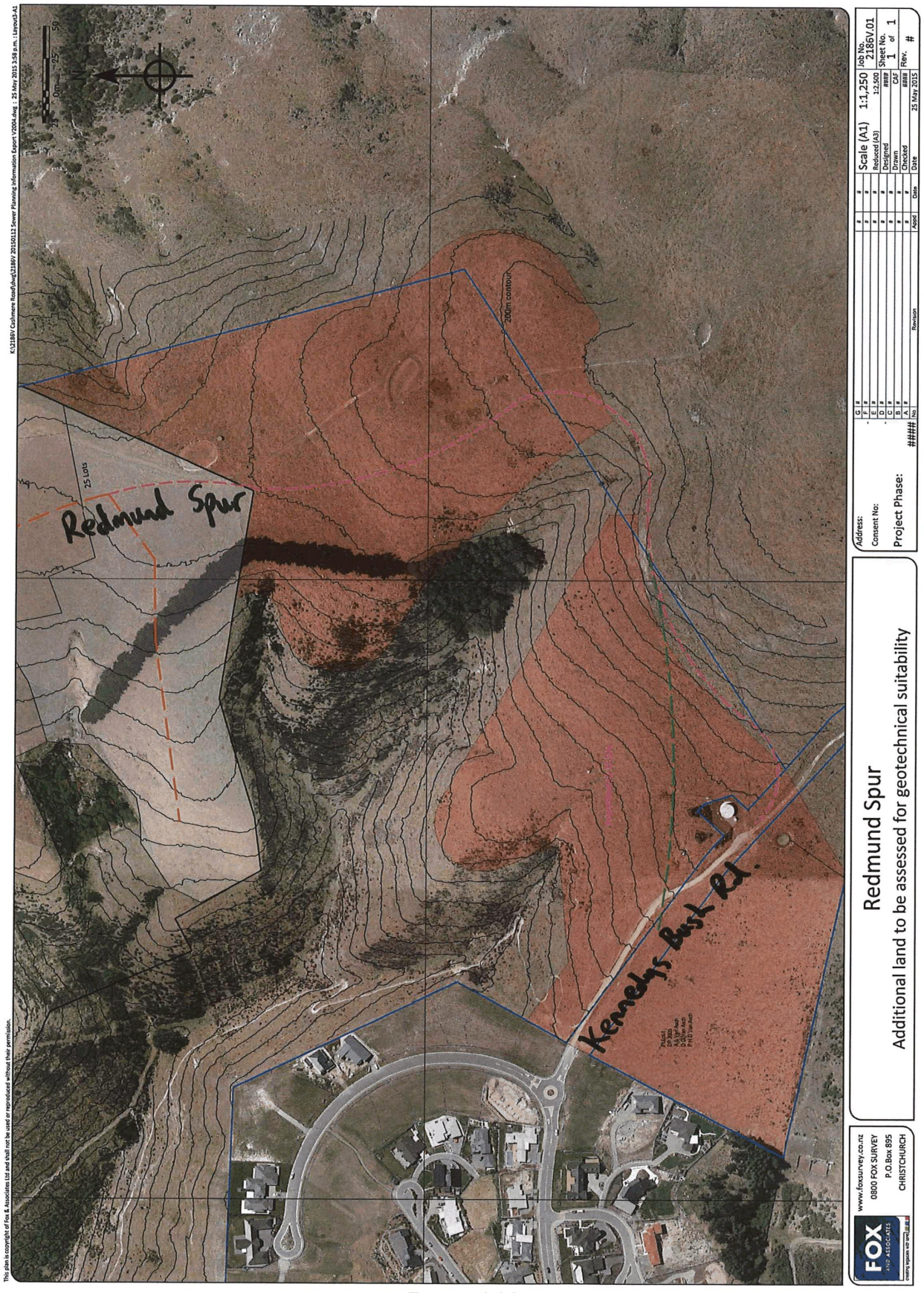
Grant Lovell

Principal, Business Leader - Land

MIPENZ, CPEng (Civil & Geotech)

Attachment: Fox Associates plan dated 25 May 2015

BMCD
p:\51887\51887.0050\workingmaterial\road extension to kb rd\2015.05.27 road extension ltr.docx



Attachment A Item 4

Appendix D

Landscape assessment (Andrew Craig)

ANDREW CRAIG
LANDSCAPE ARCHITECT LTD

Advice

Poynton House I 68 Oxford Terrace I PO Box 109 I Christchurch 8140 **p** 03 377 0157 **m** 021 146 1092 **e** andrew@acla.co.nz

LAND USE RECOVERY PLAN REVIEW – LANDSCAPE ADVICE

For: Rock Hill Limited

Date: 29 May 2015

Prepared by: Andrew Craig – Landscape Architect

INTRODUCTION

The landholder seeks to rezone for low density (average lot size being 1500m^2) residential purposes land currently zoned Rural Port Hills.

The approximately 12.4 hectare site is located above the existing residential area at Kennedys Bush (Quarry Hill subdivision) and the Redmonds Spur development which is currently being implemented. An outcome of the proposed re-zoning is to provide a road link between Redmond Spur and Quarry Hill subdivisions. It is understood that for this to be economically viable additional land is needed for housing.

The land is currently zoned rural with an 'Outstanding Natural Landscape' overlay.

Vehicle access is via Kennedys Bush Road. Public pedestrian access is available via formed walking tracks ('Kennedys Bush' and 'the Crocodile') which are located within the applicant's land.



Figure 1 *The site – indicated by yellow dashed line - as seen from Cashmere Road looking across Halswell Quarry Park.*

What is the landscape character of the existing environment?

The landscape character of the site is summarised as follows:

1 The site is entirely rural as it is devoid of any buildings. The only structure of any significance is the water reservoir which in fact will be located outside of the proposed re-zoning.

2 Landcover (vegetation) is entirely exotic comprising mostly exotic pasture grass, pine shelter belts and woody weed species – mostly broom. Some broadleaf exotic trees are also present – see Figure 2 photograph.



Figure 2 *The site as viewed from the reservoir above Quarry Hill subdivision. The gentler gradients extending to the pine shelter belt will accommodate dwellings.*

3 Native vegetation is present but throughout the site it is very scant (mostly *tussock)*. A fenced area of native re-vegetation is located at the head of a gully at the top end of the Redmond Spur subdivision. This will be retained as part of any development arising from re-zoning.

4 Physical features are largely confined to boundary fences and little else.

5 Arising from the above points the landscape of the site is modified to a moderate degree, and therefore exhibits moderately high natural character.

6 There are no especially significant natural features within the site such as salient rock outcrops, water courses (with permanently running water) or bodies and native vegetation. The site does however include or sits alongside a system of gullies that form the upper catchment to Halswell Quarry Park.

7 Topographically the site is located mid slope where above the aforementioned gully system. The gully gradients are steep relative to the gentler gradients above where anticipated housing would be located. Broadly, then land form can be described as undulating rolling hill country.

8 Within the site there are no recognised (in the operative City Plan and proposed Replacement Christchurch District Plan) heritage features (buildings, sites or trees) and no significant ecological sites.

9 Amenity is moderately high on account of clearly apparent rural character, moderate naturalness, open space and vegetation.

10 There is a high degree of contrast between the urban residential area and neighbouring rural land. This contributes appreciation of each environment arising from opposing qualities.

Are there any landscape constraints?

As mentioned, there is no significant or salient landscape features within the site for which re-zoning is sought. There is a prominent and distinctive knoll directly above the site and the existing Quarry Hill subdivision - see Figure 3 photograph. This will constrain the upward extent of subdivision as do the gullies below.



Figure 3 *Showing the prominent knoll to be kept free of buildings.*

Apart from the fenced re-vegetated area, none of the vegetation within the site is significant or particularly important.

Also as mentioned, the site is regarded as part of a wider ONL overlay that applies to most of the Port Hills rural area. Rezoning for residential purposes will result in the irrevocable loss of that part of the ONL comprising the site. In my opinion the landscape character of the site is such that its contribution to the overall ONL is relatively small and not particularly significant. That is, other parts of the ONL where rock outcrops, remoteness, native vegetation and distinctiveness are more significant compared to those occurring within the site.

What are the relevant Christchurch Replacement District Plan objectives and policies?

In the following discussion the objectives and policies relevant to landscape outcomes of the Christchurch Replacement District Plan are identified and briefly considered.

Replacement Plan (version dated 14/5/15)

> *8.1.1 Objective Natural and Built Environments*
>
> *a. Significant natural features, landscapes, indigenous biodiversity and ecosystems, springs, significant trees, and historic heritage are protected or enhanced through the subdivision process.*

It is apparent that regarding the listed features the Objective does not preclude the possibility of subdivision involving the features listed. Of these the only one of relevance is the '*…landscapes …'* as all others are absent from the site. The effects on the ONL will be discussed next as this is a concern raised in the following policy.

> *8.1.1.1 Policy – Natural features and landscapes*
>
> *a. Ensure that subdivision and associated works shall achieve the long term protection and enhancement of:…*
>
> *ii. outstanding natural features and landscapes, significant features and landscapes, important ridgelines;*

The ONL component of the site will be diminished as will its naturalness due to the introduction of residential activity. Or to put it another way, the site will be further modified. It is my opinion that the landscape effects are not just confined to the site; that is the wider context of the site is an important consideration. Within that (the Rural Port Hills) the site is

relatively insignificant arising from its modest extent (12.4ha). Further it is contiguous with the existing residential area and so will appear as a relatively minor extension[1] to it. Or to put it another way, the site is not an isolated entity within the rural Port Hills. Nonetheless, I acknowledge that diminishment of the ONL is a landscape cost. I further understand, regarding RMA s6(b), that subdivision within ONLs can be entertained provided it is not inappropriate.

The policy however, is not only concerned with protection, but also enhancement. Enhancement will result from some indigenous re-vegetation of the gullies within the site, the extent of which has yet to be determined.

iii. significant indigenous vegetation and / or indigenous fauna, including sites of ecological significance.

There are no significant features listed that exist on site, although there may exist indigenous fauna such as lizards.

8.1.1.3 Policy - Environmental Compensation

a. Apply the concept of environmental compensation where net benefit would arise from a subdivision proposal occurring within outstanding natural features and landscapes, significant natural features and landscapes, sites of ecological significance, and in relation to heritage items and settings, and significant trees.

The '*…net benefit…'* will result from the aforementioned indigenous re-vegetation of the gullies alongside the site. The location and extent of this is shown on the scheme plan. A further benefit will be the formation and provision of pedestrian access linking Halswell Quarry Park and the proposed road connecting Quarry Hill and Redmonds subdivisions.

Re-vegetation of the gullies will help control erosion, provide habitat, enhance amenity and improve water quality and runoff.

14.1.5.7 Policy - Residential development on the Port Hills

[1] A policy amendment is sought requiring minor extensions to be less than 15 hectares

Ensure that the development of greenfield land on that part of the Port Hills facing the Christchurch main urban area complements the natural landform and character of the hillside by ensuring that development:

(i) has a backdrop of a natural landform or vegetation when viewed from the flat land and coastline/coastal environment;

As the Figure 2 photograph shows, the site will have for the most part a landform backdrop when viewed from the flat land below. Houses may however intrude the skyline at the point where the current pine shelter belt exists as seen in the Figure 2 photograph. Where this occurs planting is proposed to provide backdrop vegetation, reinforced by the inevitability of further vegetation within domestic gardens following development.

(ii) avoids buildings and structures on significant and outstanding skylines;

As indicated, the site will not result in buildings and structures appearing on significant skylines.

(iii) is of a density that provides ample opportunity for tree and garden planting to reduce the visual dominance of buildings within the hillside landscape

The proposed lot sizes will overall average 1500m^2. This size will enable and therefore ensure there is ample opportunity for tree and garden planting, thereby reducing building dominance. This effect will improve as vegetation matures over time.

(iv) integrates well with existing residential areas and where possible provides connections to public open space;

The site is contiguous with the existing residential area and so will be integrated with it. Site design will include the aforementioned walkway which will connect to others beyond the site – namely Kennedys Bush walkway. Vehicle access will be in the form of the road linking Quarry Hill and Redmonds subdivisions.

Further integration will involve the indigenous planting in the gullies which connect the site with Halswell Quarry Park.

(v) has regard to the location and scale of the principle building to reduce its visual dominance on the landscape;

Principal buildings will be the dwellings. The site plan has been designed in such a way that these are optimally located so as to minimise potential adverse effects. Also taken into account in this regard will be the location of backdrop planting in addition to the application of relevant bulk and location standards.

(vi) if adjoining significant and outstanding natural landscape, conservation and biodiversity areas, remains compatible with these areas; and

(vii) where possible provides access to mahinga kai and places of cultural significance.

The relationship between the proposed residential zone and surrounding rural ONL land will fundamentally remain the same as the current situation – that is; residential activity abuts the rural ONL. The only difference is that the boundary is shifted, while in generic terms the adjoining activity stays the same.

Nearby places of cultural significance – namely Halswell Quarry Park – will be accessed via the existing (Crocodile Track) and proposed walkway – see Figure 4 map. The proposed link road will also facilitate better access to these sites.

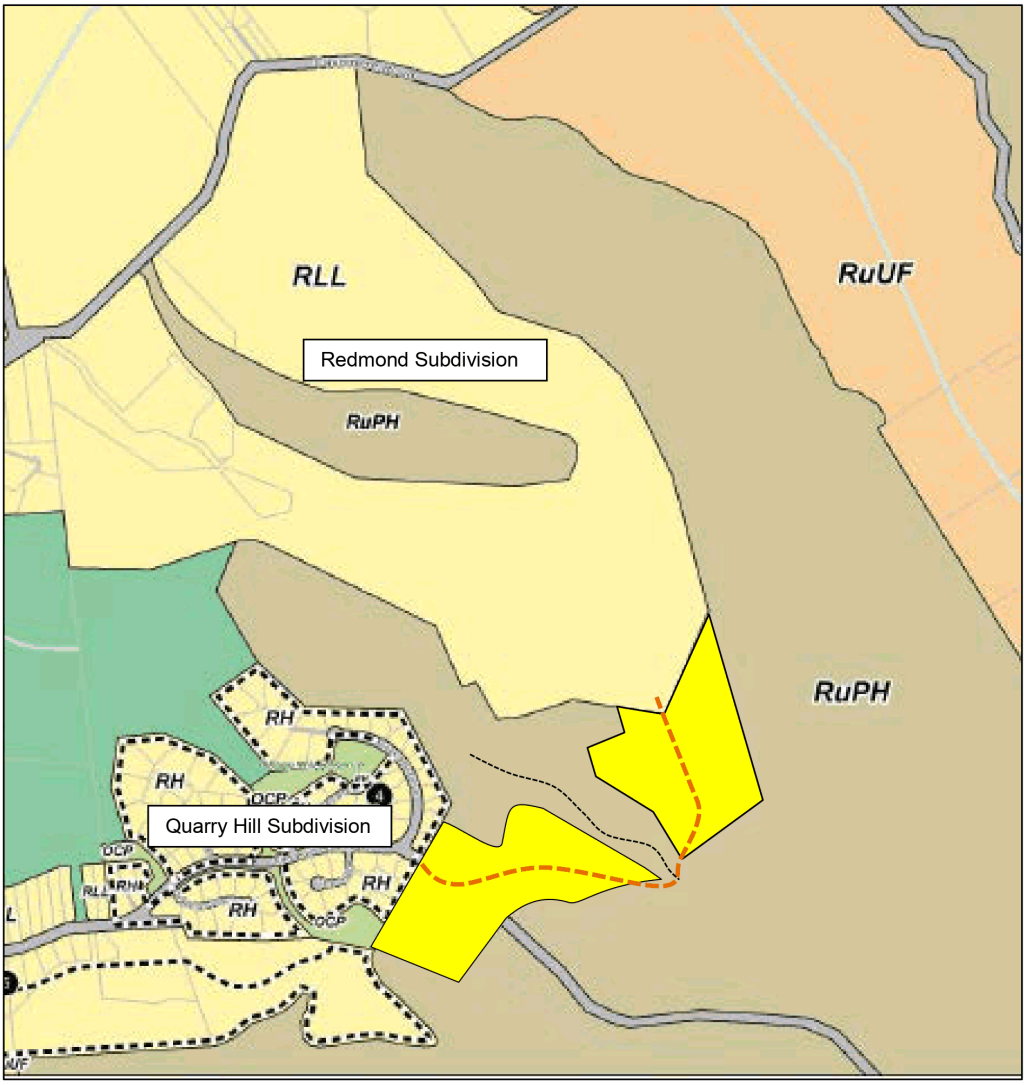


Figure 4 *The location of the site is identified within the yellow areas shown on the above Stage 2 Planning Map 50.The red dashed line represents the proposed road alignment. The black line through this area is the proposed walking track connecting to Crocodile Track below.*

What are the landscape advantages and disadvantages?

In the following discussion the advantages (benefits to the landscape) and disadvantages (costs to the landscape) of re-zoning are identified and considered.

Advantages

1 *Remediation* & enhancement

This will occur within the gullies to be re-vegetated with native plants. Current land cover comprises broom and exotic grass. The gullies will therefore be enhanced for the reasons outlined earlier.

3 *Contiguousness*

Future dwellings will be contiguous with the existing residential area and so will appear as a continuation of it. As a result current development patterns will be maintained, even though their extent is altered. For this reason residential activity within the site would not be unexpected – that is, it would not be out of keeping with existing patterns. Consequently there would be little or no adverse associative effect.

4 *Pedestrian access*

Subdivision will include an additional pedestrian access track via the gully shown on the site plan. This will be in addition to the existing 'Crocodile Track'. The tracks will enhance people's appreciation of the Port Hills environment and the presence of wildlife. They will also connect with the existing network of tracks within Halswell Quarry Park.

Disadvantages

1 *Diminished Outstanding Natural Landscape*

The subject site is currently within the Rural Port Hills zone which carries an 'Outstanding Natural Landscape' (ONL) overlay. It is therefore subject to RMA s6(b) which seeks protection of such landscapes from inappropriate subdivision, use or development. Rezoning will result in a relatively minor reduction of the ONL area.

2 *Diminished rural area*

As for the ONL, rezoning will result in some loss of the rural landscape.

Conclusion

In landscape terms there are clearly costs and benefits arising from the proposed re-zoning. As is the case with all land use proposals, context is the key consideration. As identified and considered in the foregoing discussion it is evident that there exist favourable conditions –

contiguousness, remediation, modest size, the lack of significant site features, good access and the enhancement opportunity involving the planting in the vicinity of the site with indigenous re-vegetation.

The chief cost is lessening of the ONL, where in this case the primary landscape value is loss of vegetated open space. Further, the area lost from the ONL will be small relative to its overall extent.

There will be no adverse amenity effects arising from development following re-zoning. The reason is that modern housing on large lots will be high quality. The large lots will further enable large scale planting which will further provide amenity.

Overall, it is my opinion that the land use and its effects arising from the proposed re-zoning will, on balance, be appropriate in landscape terms given the circumstances discussed above.

Andrew Craig
Landscape Architect
29 May 2015

aston CONSULTANTS
resource management & planning

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

Foddercube Products Ltd

November 2018

Greater Christchurch Partnership

Submission No: 047

Submitter Details

Name: Foddercube Products Ltd
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

I wish speak at the hearings.
Preferred location: Christchurch City
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background:

Foddercube Products Ltd ('Foddercube') owns 374 Springs Road, legally described as Lot 1 DP 53489 (5.2611 ha) and Lot 2 DP 49632 (7.6308 ha). There is only one other rural property (8 ha in area, owned by Kovan Ltd) separating the Foddercube land from Industrial Heavy zoned land to the north which adjoins the southern boundary of the Southern Motorway – see aerial photo below. The Kovan Ltd property is legally described as Lots 1 and 2 DP 82095.

The above two properties ('the Site') are located on the corner of Marshs and Springs Road on the boundary between Christchurch City and Selwyn District. The Southern Motorway extension is located approximately 500m to the north. The Foddercube land contains the Texture Plants 'niche' garden centre which provides quality native, exotic and evergreen trees and shrubs, and focusses on plants with foliage, form and structure. Texture Plants also grows turf on the site. The Kovan land is used for grazing.

The Site is zoned Rural/Urban Fringe and adjoins but is outside the Greenfield Priority Areas – Business as shown on Canterbury Regional Policy Statement (CRPS) Map A and **Our Space** Fig 16 – see zoning map below.



Fig 1: Location plan

Foddercube submitted on the Christchurch Replacement District Plan seeking rezoning of its land and the adjoining 8 ha to the north to Industrial Park Zone, a total area of 20 ha. Its preference now is for Industrial General or Industrial Heavy zoning, consistent with the zoning of adjoining land. This would consolidate the south Hornby industrial area, contained by Marshs Road to the south and Springs Road to the east. This is one of several cases where rezoning could not proceed, regardless or the merits because of Commissioners' finding that to give effect to the CRPS, 'higher order document', they were not entitled to zone for urban purposes land beyond

the existing urban area identified on Map A.

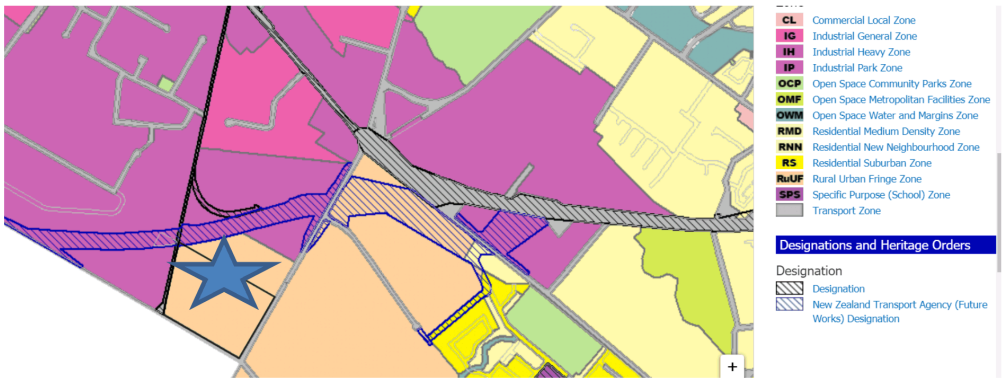


Fig 2: District Plan zoning map – Foddercube and Kovan sites marked with star

The **Our Space** Settlement Update provides the much needed opportunity to finally address these anamolous and meritous urban boundary cases and enable the necessary changes to Map A to be made, and/or to provide some flexibility within the **Our Space** and the CRPS policy framework to achieve the same.

Merits of Rezoning

Experts for the Council and Foddercube agreed that there were no wastewater and water servicing constraints to rezoning and that the rezoning would achieve a consolidation of the south Hornby industrial area. [1]

Traffic modelling was undertaken which established that some parts of the road network in the area are operating at or near capacity, specifically the Halswell Junction Road/Springs Road and Marshs/Springs Road intersections. The modelling took into account the Southern Motorway Extension proposal, currently under construction. Changes predicted in road network operation over a 10 year period (2016-2026) as a result of the rezoning are marginal to negligible (see **Appendix A**for details). The modelling assumed 20 ha of Industrial Park zoning, whereas the Submitter now proposes Industrial Heavy zoning. The traffic generation rates are less for these alterative industrial zones, and substantially so (by 75%) for Industry Heavy zoning. Also noted, is

[1] O'Brien Rebuttal Evidence dated 24 September 2015 [para 6.4], Stevenson Rebuttal Evidence dated 24 September 2015 [para 7.4] – see http://www.chchplan.ihp.govt.nz/hearing/chapter-15-commercial-part-and-chapter-16-industrial-part-stage-2/

that Selwyn District Council Long Term Plan 2018-2028 includes upgrading the Springs/Marshs Rd intersection in 2020/21.

The proposed rezoning will not result in any adverse effects which would preclude rezoning.

Industrial Development Capacity

It is acknowledged that there is a large area of existing industrial zoning at south Hornby. It is understood that a considerable amount is in the hands of a small number of landowners. The addition of a further 20 ha to the industrial land supply will have no adverse effects in terms of 'oversupply' and is entirely consistent with the intent of the **Our Space** and Canterbury Regional Policy Statement urban growth management approach – namely to provide certainty as to where development will take place to enable planning for and development of infrastructure required for projected urban growth; to protect key strategic infrastructure such as strategic transport networks; and to ensure development is appropriately located in terms of potential environmental effects. There is a benefit in enabling the delivery of land for industrial development which is in a different ownership to the major south Hornby industrial landowners. The latter are able to effectively control the rate at which industrial land is supplied to the market and so maintain higher land values.

Developments outside and changes to Rural/Urban Boundary

An unfortunate consequence of a fixed rural/urban boundary line in the Canterbury Regional Policy Statement (CRPS) and on **Our Space** Fig 16 and an associated objective and policy framework which requires 'avoidance' of urban activities outside that line (CRPS Objective 6.2.1 and Policy 6.3.1), is there is in effect, no flexibility to respond to development proposals, anomalies, or meritous boundary changes which do not offend the overall **Our Space** and CRPS urban growth management approach. The approach is intended to provide certainty as to where development will take place to enable planning for and development of infrastructure required for projected urban growth; to protect key strategic infrastructure such as strategic transport networks; and to ensure development is appropriately located in terms of potential environmental effects. Suggested policy wording is included in the Relief Sought below to address this issue.

Relief Sought:

Additions are shown in bold and underlined and deletions as strike through.

1. Amend Fig 16: Proposed locations of future development areas in Greater Christchurch by as follows:-
   Change status of 374 Springs Road, Prebbleton legally described as Lot 1 DP 53489 (5.2611 ha) and Lot 2 DP 49632 (7.6308 ha) and the Kovan Ltd land adjoining to the north legally described as Lots 1 and 2 DP 82095 to Greenfield Priority – Business

2. 6.2 Schedule of future work
   Amend 8 (page 34) as follows:-
   Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement to:-
   - amend/delete Map A to be consistent with the relief sought in this submission (including 1. above and 3. below); and
   - provide flexibility to accommodate meritous proposals for urban development and zoning and to facilitate a responsive planning approach by amending and adding to the objectives and policies as follows (insertions in bold and underlined):-

   Add new Policy 6.3.1A as below:-

   Policy 6.3.1 A

   (a) Enable urban development or zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

   (i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

   (ii) Any additional land will integrate with the provision of infrastructure; and

   (iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

   (iv) The beneficial planning outcomes for the urban development or extension outweigh any disbenefits arising from increasing the land available for urban development; and

   (v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritous proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land capacity assessments which have informed Map A, and with the primary drivers and influencers of urban development in Greater Christchurch.

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 **and zoning** outside of existing urban areas or greenfield priority areas for development, unless expressly provided for in the CRPS **or which has only minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.1 Development within the Greater Christchurch area

In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS **or have minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**

3. Specify in **Our Space** that Fig 16 be included in District Plans rather than the Canterbury Regional Policy Statement, thus facilitating the ability for private plan requests for changes to the same, with appropriate criteria for assessment being included in the CRPS and/or District Plans; or as a less preferred alternative, other methods to retain flexibility and 'future proofing' to respond to meritous housing and business development proposals which give effect to the NPS-UDC but are not recognized or provided for in **Our Space** and supporting documents.

4. Consider streamlined RMA or other streamlined processes to facilitate the amendments sought which are specific to the Submitter's land and adjoining Kovan land and

potentially other meritous rural/urban boundary changes, and associated policy wording. The rezoning has already been subject to rigorous 'testing' through the Christchurch Replacement District Plan process and its suitability for rezoning has already been established. Do not use streamlined processes for implementation of the overall **Our Space** strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

5. Such other consequential, additional or other amendments to Chapter 6 of the RPS and other documents, and any other actions, to be consistent with and give effect to theintent of this submission , including directing amendment to the Christchurch City Plan to rezone the Site (374 Springs Road and immediately adjoining Kovan Ltd 8 ha of land to the north) Industrial Park or other industrial zoning as appropriate (as identified on Fig 2 above).

Reasons for Relief Sought:-

1. For the reasons set out above under and under the responses to the Submission Form questions below.
2. The housing and business development capacity targets, urban form outcomes, and Schedule of Future Work measures (including change to the CRPS) contained in Our Space will have a profound and defining effect on the Greater Christchurch settlement pattern for the next 30 years. There will be significant flow on effects for the local, regional and potentially national economies. There is no s32 assessment accompanying Our Space despite its defining role in 'dictating' the urban growth approach for Greater Christchurch for the next 30 years.
3. The amendments sought will enable the owners of 374 Springs Road and adjoining land 8 ha to the north owned by Kovan Ltd to use the Site in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).
4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects 374 Springs Road the adjoining 8 ha to the north owned by Kovan Ltd which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.
5. The **Our Space** industrial development capacity targets are uncertain and likely to be inaccurate and based on a flawed methodology.

6. **Our Space** considers a responsive planning approach to the management of the urban growth within Greater Christchurch is necessary but does not facilitate or enable this, whereas the relief sought in this submission does.
7. **Our Space** as notified is contrary to and does not give effect to the National Policy Statement – Urban Development Capacity (NPS – UDC).
8. A fixed uncontestable urban/rural boundary line for Greater Christchurch as proposed by **Our Space** is likely to result in adverse social and economic effects, including for the following reasons:-
    - Overly strict limitations on peripheral growth causes excessive land price inflation that in turn has a negative effect on land affordability;
    - A planning regulatory regime which provides for a contestable urban/rural boundary sends an important signal to the property market that it is best to get on with development rather than "land bank" (because there is excessive capital gain due to scarcity of land supply);
    - A contestable urban/rural boundary is not 'laissez-faire' and ad hoc and will not result in uncontained urban sprawl. The proposed amendments to Our Space and other planning documents require strategic planning including with respect to infrastructure, and an evidence base in support of any amendments to the boundary.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

No comment

Question 2:

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.

Do you agree with this approach and why?

Response:
No comment.

Question 3:
Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.
What elements should be included in this action plan?

Response:
No comment.

Business Growth
Question 4:
Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.
Do you agree with this approach and why? What further measures would support such development?

Response:
No comment.

Question 5:
The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.
Do you agree or disagree this is sufficient and in the right location and why?

Response:
No - see comments above in particular under 'Industrial Land Capacity'.

Growth needs

Question 6:

The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.

Do you agree or disagree with this evidence base and why?

Response:

No – see comments above in particular under 'Industrial Land Capacity'.

Transport and other infrastructure

Question 7:

Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.

Do you agree or disagree with this approach and why?

Response:

No comment.

Question 8:

Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.

Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:

No comment other than to note there are no infrastructure constraints to the rezoning requested in this submission.

Other

What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

Response:

No further comments other than as noted above.

Appendices

Appendix A: Traffic effects of rezoning

Appendix A: Traffic Modelling – Impacts of rezoning Foddercube and Kovan land for industrial purposes [1]

The following traffic generation is based on the following estimate for the proposed 20Ha Industrial Park development:

- AM Peak Hour: 422 vehicles per hour (350 arrivals / 72 departures); and
- PM Peak hour: 437 vehicles per hour (92 arrivals / 345 departures).

If alternative industrial zonings were applied the traffic generation estimates would reduce as follows:-

	% reduction AM peak	% reduction PM peak
Industrial General	12	18
Industrial Heavy	75	75

Period	Approach	Change in Delay	Interpretation of Effect
2026 AM Peak	Springs Road approach to Halswell Junction Road.	124 seconds in Base model reducing to 115 seconds with Development (-9 seconds).	Negligible effect on operation.
	Halswell Junction Road west approach to Springs Road	40 seconds in Base model increasing to 56 seconds with Development (+16 seconds)	Level of Service E is acceptable for peak period traffic operation.
	Marshs Road North West approach to Springs Road	43 seconds in Base model increasing to 48 seconds with Development (+5 seconds).	Small change in delay and remains LoS D.
	Marshs Road South East approach to Springs Road	81 seconds in Base model increasing to 89 seconds with Development (+ 8 seconds).	Small change in delay affecting relatively few vehicles.
2026 PM Peak	Springs Road approach to Halswell Junction Road.	34 seconds in Base model increasing to 42 seconds with Development (+8 seconds).	Acceptable change in delay and remains LoS D.
	Halswell Junction Road east approach to Springs Road	70 seconds in Base model increasing to 72 seconds with Development (+2 seconds).	On the verge of LoS F without the development and will experience a small additional delay.
	Marshs Road North West approach to Springs Road	53 seconds in Base model increasing to 55 with Development (+2 seconds).	Small change in delay and remains LoS E.
	Marshs Road South East approach to Springs Road	54 seconds in Base model remaining at 54 seconds with Development.	No change in operation predicted.

NB: The site access intersections can be priority controlled from Marshs Road and Springs Road.

[1] Information supplied by Novo Group Ltd

Submission No: 056

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

Graeme Alan & Joy Yvonne Mc Vicar

November 2018

Greater Christchurch Partnership

Submitter Details

Name: GA & JY Mc Vicar
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

I wish speak at the hearings.
Preferred location: Christchurch City
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background:

Graeme and Joy McVicar ('the Submitters') own a property on Worsleys Road, Christchurch, legally described as Lot 12 DP 26575, comprising approximately 4.2 hectares. It is part of DP 26575, a historical 15 x 4 ha lot subdivision granted by the Heathcote County Council in 1963. The Submitters have owned Lot 12 since 1979. Most of the lot has until recently been used for plantation forestry. There are no existing dwellings on Lot 12.

The McVicars are filing this submission on behalf of themselves and the owners of Lots 11 and 13-15 DP 26575 as follows:-

Lots 11&12 Estate of Gary McVicar
Lot 13 June Leeming & Marilyn McVicar
Lot 14 Susan Edmeades & Julie Hitchings
Lot 15 Ian Jefferis & Peter Phillips

The relief sought (as set out below) also applies to Lot 10, owned by Grant and Susan Poultney and James Dawson.

Lot 12 is identified in the following Christchurch District Planning Map (50). It is one of five sites (Lots 10-15) zoned Rural Urban Fringe. The rest of the DP 26575 lots (Lots 1-9) have their front portion zoned Residential Large Lot (RLL), with the rear portion in each case zoned Rural Port Hills. The minimum lot size in the Worsleys Road RLL is 3000m^2.

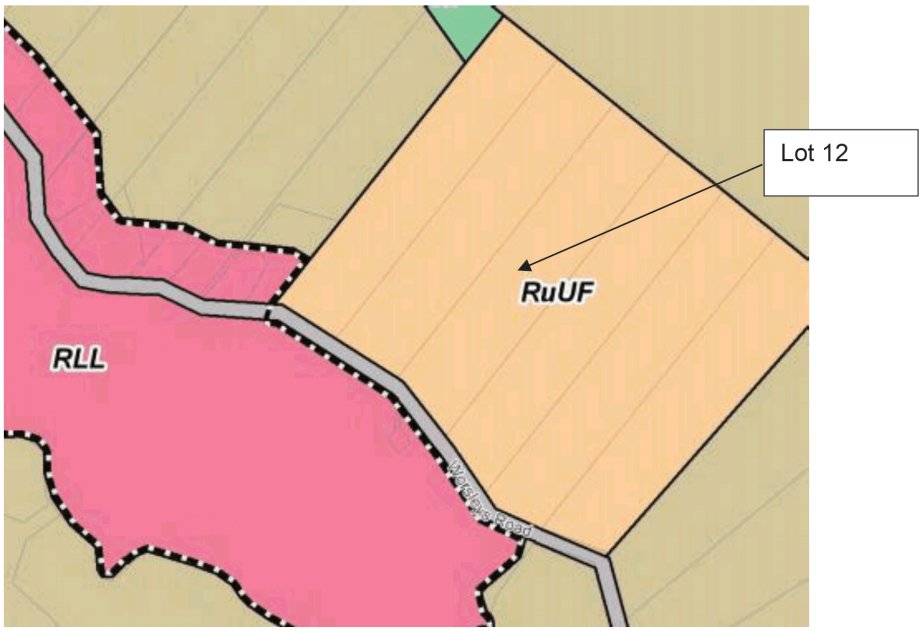


Fig 1: Zoning map. Lots 10-15 DP 26575 are 'buff' coloured.

With the exception of the frontage of the Site (i.e. a band approximately 80m wide), the majority of the area contained within Lots 10-15 are is located within ONL 38.3 and RAL 11.2. The frontage area was removed from the ONL by way of the decision on the Christchurch Replacement District Plan on the submission by the McVicars requesting this.

The Submitters also lodged a submission on Stage 2 of the Replacement Plan requesting that Lots 10- 15 re zoned from RUPH ('Rural Port Hills') to RLL (Residential Large Lot"). The relief sought was then amended to rezone only the front portion of the sites closest to Worsleys Road to Residential Large Lot (see amended planning map below "hatched area 6"), consistent with the extent of the RLL zoning over Lots 1-9 below.



Fig 2. Planning map showing ONL 38.3



The Commissioners considered they were unable to rezone all or part of the lots RLL because this was contrary to Strategic Objective 3.3.7 (c) which gives effect to the objective and policies and Map A of the Canterbury Regional Policy Statement (CRPS) i.e. avoid urban activities outside the greenfield priority and existing urban areas shown on Map A. Instead, Lots 10-15 were zoned Rural Urban Fringe which enabled one dwelling to be established on each 4 ha lot.

A joint memorandum between the parties recording the agreement reached regarding the most appropriate zoning given this 'higher order' constraint is attached as **Appendix A.**

Preferred Zoning

The **Open Space** submissions process provides the opportunity to revisit the most appropriate zoning for Lots 10-15 given that it proposes a change to the 'higher order' document, the CRPS. The Submitter seeks an amendment to CRPS Map A, and **Open Space** Fig 16 and such other changes as appropriate to facilitate zoning the road frontage areas of Lots 10-15 i.e. that portion outside the ONL, to RLL.

At the time of the Replacement Plan hearings the Submitters obtained expert advice on development costs, including provision of infrastructure. Malcolm Smith, a land and subdivision specialist, put together a conceptual 10 lot subdivision layout for the front portion of the Lots 11 - 15 including possible house sites (Lot 10 was the subject of a separate submission by the owners, Mr and Mrs Poultney who sub that Lot 10 sdl be rez RLL as part of their dev=c on 1995 plan.. = left out in error). In his professional opinion it would not be economic to provide the necessary infrastructure for the sites for less than ten lots (see copy of his evidence attached as **Appendix B** including Attachment 2 concept layout). The concept plan includes some lots in the 'rural residential' size range ie 5000m^2 – 1 ha lots. Mr Smith notes that the lots can be no less than 3000m^2 or greater than 1.015 ha if this is regarded as more appropriate (under the CRPS there is to be no provision for rural residential lots in Christchurch City).

Lot 10 was not included in the Smith subdivision concept as it was the subject of a separate submission on the Replacement Plan by the owners, Grant and Susan Poultney. Their submission was that RLL zoning of the front portion of Lot 10 had been agreed with the Council at the time of the previous 1995 District Plan Review, but the zoning had been 'left off' in error. This submission also includes Lot 10.

Merits of Rezoning

Notwithstanding the Map CRPS constraints, the Council did, helpfully, at the time of the Replacement Plan hearings, consider the merits of the proposed RLL rezoning for the front portion of Lots 10-15. A joint memorandum between the parties regarding the merits is attached in **Appendix A.** It was agreed that there were no stormwater, wastewater or water infrastructure

constraints provided the developer funds and constructs the necessary services, as is their intention.

The Council's traffic engineer was concerned that the location of the lots did not support multi-modal transport options i.e. residents would be reliant on the private car; and that cumulative effects of additional demands may also exacerbate the identified peak hour capacity constraints at the intersection of Hoon Hay Road/Cashmere Road/Worselys Road. The Rural Urban Fringe zoning now in place enables four additional dwellings to be established, one on each of Lots 11-15 (there is an existing dwelling on Lot 10). RLL zoning would enable a further additional six dwellings. It is unlikely that this very minimal additional level of residential development would have any significant adverse effects on the operation of the intersection.

The proposed area to be rezoned RLL is outside the ONL. The landscape experts were in agreement that it should be removed from the ONL to enable RLL rezoning. Their joint expert conferencing statement is attached to the Joint Memorandum relating to ONL matters (**Appendix C**).

In conclusion, there are no infrastructure or other anticipated adverse environmental effects which would preclude the proposed RLL zoning.

Urban development outside and changes to Rural/Urban Boundary

An unfortunate consequence of a fixed rural/urban boundary line in the CRPS and on **Our Space** Fig 16 and an associated objective and policy framework which requires 'avoidance' of urban activities outside that line (CRPS Objective 6.2.1 and Policy 6.3.1), is there is in effect, no flexibility to respond to minor anomalies, or meritous boundary changes which do affect or compromise the **Our Space** overall urban management approach - such as the development proposal and RLL rezoning outlined is this submission for Lots 10-15 DP 26575 (Worsleys Road). Suggested policy wording is included in the Relief Sought below to address this issue.

The **Our Space** urban growth management approach is intended to provide certainty as to where development will take place to enable planning for and development of infrastructure required for projected urban growth; to protect key strategic infrastructure such as strategic transport networks; and to ensure development is appropriately located in terms of potential environmental effects.

Relief Sought:

The changes which the Submitter requests are in line with its responses and reasons are outlined below. Additions are underlined and in bold and deletions are strike through.

1. Amend **Our Space** Fig 16: Proposed locations of future development areas in Greater Christchurch as follows:-
   Include within the Existing Urban Area - that part of Lots 10-15 DP 26575 located outside ONL 38.3 as shown on Fig. 2 above, and located with approximately 80m of the Worsley Road frontage of Lots 10-15 i.e. consistent with the depth of the RLL zoning of Lots 1-9 DP 26575.

2. 6.2 Schedule of future work
   Amend 8 (page 34) as follows:-
   Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement as follows:-
   - amending Map A to be consistent with the relief sought in this submission (including 1. above and 3. below); and
   - provide flexibility to accommodate meritorous proposals for urban development and zoning and to facilitate a responsive planning approach to management of urban growth of Greater Christchurch by amending and adding to the objectives and policies as follows (insertions in bold and underlined):-

   Add new Policy 6.3.1A as below:-

   Policy 6.3.1 A

   (a) Enable urban development or urban zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

   (i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

   (ii) Any additional land will integrate with the provision of infrastructure; and

   (iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

(iv) The urban development or urban zoning will have beneficial planning outcomes; and

(v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritorous proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land capacity assessments which have informed Map A, and with the primary drivers and influencers of urban development in Greater Christchurch.

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 **or which has only minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.1 Development within the Greater Christchurch area

In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS **or which have minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.7 Residential location, yield and intensification

In relation to residential development opportunities in Greater Christchurch:

7. Subject to Policy 5.3.4, residential greenfield priority area development shall occur **generally** in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.

3. Specify in **Our Space** that Fig 16 be included in District Plans rather than the Canterbury Regional Policy, thus facilitating the ability for private plan requests for changes to the same, with appropriate criteria for assessment being included in the CRPS and/or District Plans; or as a less preferred alternative, other methods to retain flexibility and 'future proofing' to respond to meritorous housing and business development proposals which give effect to the NPS-UDC but are not recognized or provided for in **Our Space** and supporting documents.

4. Consider other amendments to the CRPS and other documents and other actions which are appropriate to facilitate a responsive planning approach to management of urban growth of Greater Christchurch.

5. Consider streamlined RMA or other processes to facilitate the amendments sought which are specific to the Submitters' land and which provide flexibility to provide for meritorous zoning and urban development, including associated policy wording. Do not use streamlined processes for implementation of the overall **Our Space** strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

6. Any further, consequential or alternative amendments to any documents, and other actions which meet and give effect to the intent of this submission.

Reasons for Relief Sought:-

1. For the reasons set out above and below and in the responses to the Submission Form questions below.
2. The housing and business capacity targets, urban form outcomes, and Schedule of Future Work measures (including changes to the CRPS) contained in **'Our Space'** will have a profound and defining effect on the Greater Christchurch settlement pattern for the next 30 years. There is an acknowledged high level of uncertainty associated with the housing and business land capacity assessments and the adopted approach is aspirational and untested with its focus being redevelopment and intensification of existing urban areas, underpinned by an as yet unfunded *"vision for transformation of the transport network that fosters much*

greater pubic and active transport usage, and reduced reliance on the private vehicle".[1] Despite this, there is no s32 assessment accompanying **Our Space**.

3. The amendments sought will enable the owners of Lots 10-15 to use their land in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).
4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects Lots 10-15 DP26575, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.
5. The **Our Space** housing land development capacity targets are uncertain, inaccurate and based on a flawed methodology. With respect to hillside developments, it is likely that some of the existing zoned hill areas will not be practical, economic or feasible to develop, including due to geo-tech, access and other physical constraints.
6. **Our Space** considers a responsive planning approach to future the management of the Greater Christchurch urban growth but does not facilitate or enable this, whereas the relief sought is this submission does.
7. **Our Space** as notified is contrary to and does not give effect to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular Policy PB1 which requires housing capacity supply to meet demand for different types, locations and price points.
8. A fixed uncontestable urban/rural boundary line for Greater Christchurch as proposed by **Our Space** is unlikely to facilitate the urban form sought by **Our Space** including for the following reasons:-
    - Overly strict limitations on peripheral growth causes excessive land price inflation that in turn has a very negative effect on housing affordability;
    - A planning regulatory regime which provides for a contestable urban/rural boundary sends an important signal to the property market that it is best to get on with development rather than "land bank" (because there is excessive capital gain due to scarcity of land supply);
    - Containment and higher land values does not facilitate intensification;
    - If the Central City and the Key Activity Centres are attractive the market will locate there by people's choice. Generally carrots are better than sticks to achieve desired planning outcomes.

[1] Open Space p 19

- A contestable urban/rural boundary is not 'laissez-faire' and ad hoc and will not result in uncontained urban sprawl. The proposed amendments to **Our Space** and other planning documents require strategic planning including with respect to infrastructure, and an evidence base in support of any amendments to the boundary;
- A policy of both "up and out" that ensures there are a range of development opportunities and housing choices is appropriate.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

Our Space has a 30 year time horizon. It acknowledges that many of the primary drivers and influencers of urban development in Greater Christchurch are in a state of change and a responsive approach to planning is necessary. [2] It also acknowledges considerable methodological difficulties with the feasible housing and business capacity assessments contained within, and which have the informed the policy responses. Notwithstanding, it proposes to retain a highly inflexible non contestable fixed rural/urban boundary line, as shown on Figure 16 'Proposed locations of future development areas in Greater Christchurch'. This approach is opposed, including but not limited to, the following reasons:-

- It is the complete opposite of 'responsive' planning, and does not facilitate resilience which requires the ability to respond with options in the face of an uncertain future and/or major unforeseen events. For example, Greater Christchurch was able to respond and recovery relatively quickly from the 2010/2011 earthquake sequence because substantial areas of greenfield housing in Selwyn and Waimakariri Districts in particular (but also at Prestons and south west Halswell) were able to be brought 'on line' quickly.

[2] GC Settlement Update Section 6.1

- There were a significant number of red zoned houses on the Port Hills. Rezoning for replacement housing on the Port Hills in suitable locations (such as McVicars Site) is appropriate. Whilst there some other not fully developed areas of RLL zoning on the Port Hills, a choice of areas is appropriate, as the timeframes and development aspirations of different landowners will mean that not all land zoned will necessarily be available for development in the immediate term.

- Christchurch Council itself publicly expressed the view in its submission on the Draft LURP (Land Use Recovery Plan) that *"there are some relatively minor changes to the existing urban boundary that are considered to have merit at a local level and would not in fact compromise any higher order policy direction."*[3] (see **Appendix E**). The LURP review which resulted in the current 'version' of the statutory Greater Christchurch urban growth management strategy i.e. Chapter 6 of the CRPS focussed on the larger greenfield areas. It did not consider consequences of smaller anomalous situations where individual landowners were not given the opportunity to put their case (there were no hearings on LURP 'comments') and appeal rights were extinguished – or landowners were not even aware of the process. **Open Space** and the 2019 CRPS plan change should recognise such cases and make appropriate provision for them.

- **Our Space** and the CRPS are 'high level' documents which cannot realistically respond to local circumstances, land use patterns and needs which importantly inform land use planning at the local level. It needs to retain flexibility to enable appropriate response at the district level to local circumstances.

Question 2:
Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.
Do you agree with this approach and why?

Response:

[3] CRDP Exhibit B, Letter from CCC dated 29-5-15, page 2, section 2.3

The McVicars seek Residential Large Lot zoning along the frontage of Lots 10-15 (see above map). This is consistent with the RLL zoning of land directly opposite on the western side of Worsleys Road. Whilst at a Greater Christchurch wide level, there may be an increased demand for medium and higher density housing over time as household sizes reduce with an aging population, at a local level, other locationally specific factors such as existing amenity and character, physical land factors and servicing, particular in a hill setting, will often have a major bearing on the appropriate housing response. **Our Space** and the CRPS need to have the flexibility to accommodate such local factors.

Question 3:
Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.
What elements should be included in this action plan?

Response:
No comment.

Business Growth

Question 4:
Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.
Do you agree with this approach and why? What further measures would support such development?

Response:
No comment.

Question 5:
The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.

Do you agree or disagree this is sufficient and in the right location and why?

Response:
No comment.

Growth needs
Question 6:
The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.
Do you agree or disagree with this evidence base and why?

Response:
No – see comments above under 'Reasons for relief' and questions 1 and 2.

Transport and other infrastructure
Question 7:
Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.
Do you agree or disagree with this approach and why?

Response:
No response.

Question 8:
Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.
Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:

No response, other than to note that there are no servicing issues with the proposed RLL rezoning.

Other

What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

Response:

No further comments other than as noted above under 'Submitter Background', 'Relief Sought' and 'Reasons for Relief'.

Appendices

Appendix A: Joint memorandum regarding merits of rezoning
Appendix B: Evidence of Malcolm Smith
Appendix C: Joint memorandum regarding Outstanding Natural Landscape (ONL)
Appendix D: LURP Review Christchurch City Council Comment

Appendix A

Joint memorandum regarding merits of rezoning

BEFORE THE CHRISTCHURCH REPLACEMENT DISTRICT PLAN INDEPENDENT HEARINGS PANEL

IN THE MATTER	of the Resource Management Act 1991 and the Canterbury Earthquake (Christchurch Replacement District Plan) Order 2014
AND	
IN THE MATTER	of the Stage 2 Residential Proposal (part)

JOINT MEMORANDUM ON BEHALF OF GRAEME AND JOY MCVICAR (#2362) AND CHRISTCHURCH CITY COUNCIL RECORDING AGREEMENT REGARDING MERITS OF REZONING

13th October 2015

Simpson Grierson
Barristers & Solicitors

S J Scott / A O J Sinclair
Telephone: +64-3-968 4018
Facsimile: +64-3-379 5023
Email: sarah.scott@simpsongrierson.com
PO Box 874
SOLICITORS
CHRISTCHURCH 8140

MAY IT PLEASE THE PANEL:

1. This memorandum is filed on behalf of Graeme and Joy McVicar (#2362) (the **McVicars**) and Christchurch City Council (**Council**).

2. The purpose of this memorandum is to record the agreement reached between the McVicars and the Council in relation to the Council's infrastructure concerns regarding stormwater associated with the requested rezoning of land at 353-363 Worsleys Road (the **site**) (ie, the merits). There are no further submissions on submission #2362.

Background

3. The site was notified in Stage 2 as Rural Port Hills. For completeness, in the notified Stage 3 maps the site is subject to Natural Landscape overlays.

4. In their submission, the McVicars sought to have the site rezoned from Rural Port Hills to Residential Large Lot.

5. In evidence in chief, the Council recommended that the requested rezoning be rejected. In rebuttal, the Council maintained the position that the requested rezoning be rejected on the basis that the site is located outside Map A existing urban area.

6. In evidence in chief Mr McVicar suggested a site density rule permitting the erection of two residential units per 4ha lot as their preferred relief or in the alternative, a site density rule permitting the erection of one residential unit per lot[1]. As set out in the legal submissions for the McVicars, the definition of 'urban activities' in the Canterbury Regional Policy Statement (**CRPS**) includes residential units at a density of more than one residential unit per 4ha of site area.[2] The secondary form of relief suggested by Mr McVicar would not qualify as an 'urban activity' under the CRPS definition (as they seek one residential unit per lot, and each allotment is greater than 4ha in size) and therefore would not challenge the higher order policy direction against providing for any new urban activities outside the existing urban areas shown on Map A of the CRPS.

7. However, the Council has recorded that Policy 6.3.9 of the CRPS is relevant, which provides that no further *rural/residential development* is to be provided for in the

1 Paragraphs 1 and 13 McVicar Evidence in Chief dated 27 August 2015 and Transcript, pages 590 to 592.
2 McVicar legal submissions, 11 September 2015, paragraphs 10 and 13.

Christchurch City Plan area.[3] Rural / residential activities are defined in the CRPS as residential units outside of greenfield priority areas at an average density of between 1 and 2 households per hectare.[4] Each allotment can be surveyed in order to comply with Policy 6.3.9.[5] Should this alternative relief be granted, the Council's closing submissions outline a need for a maximum site density rule.[6] Ms Aston's evidence for McVicar suggests a site specific rule on the final page of Appendix A to her evidence.[7]

Merits/Infrastructure

8. Ms O'Brien considered there were outstanding wastewater issues and Mr Norton considered that there were outstanding stormwater issues. The Council's position is recorded in paragraph 4.41 of Ms Oliver's rebuttal evidence dated 2 September 2015.

9. During the course of the Residential (Stage 2) hearing, Ms O'Brien was provided with a report containing information on the wastewater capacity of the site. As a consequence of this information, Ms O'Brien no longer opposes the rezoning sought by the McVicars provided the developer funds and constructs the extension to the water and wastewater networks[8]. The McVicars have agreed that this be a requirement of a RLL zoning.

10. Since the filing of the Council's rebuttal evidence, the McVicars have informally provided Mr Norton with information on the stormwater concepts for the site. As a consequence of this information, Mr Norton no longer considers that stormwater issues should prevent the rezoning of the site.[9]

Agreement

11. Following Mr Norton's review of the stormwater information provided by the McVicars, the McVicars and the Council agree that there are no stormwater issues that prevent the rezoning of the site. Therefore, the only remaining infrastructure constraints in relation to the rezoning of the site are the transport issues identified by Mr Milne in his evidence in chief[10] and rebuttal evidence.[11] For completeness, we record that the site is located

3 Evidence in chief, Sarah Oliver, 18 September 2015, Attachment B, page 43.
4 McVicar, legal submissions, 11 September 2015, paragraph 20.
5 Evidence in chief, Malcolm Smith, 27 August 2015, paragraph 21
6 Council, closing submissions, 14 September 2015, paragraph 4.15.
7 Fiona Aston Evidence in Chief dated 27 August 2015, final page of Appendix A.
8 Paragraph 6.1 O'Brien Supplementary Evidence dated 7 September 2015 and Transcript, page 127.
9 Transcript, page 599.

outside the existing urban area identified in the Canterbury Regional Policy Statement Chapter 6, Map A.

DATED this 13 day of October 2015

B R D Burke
Counsel for Graeme and Joy McVicar

S J Scott / A O J Sinclair
Counsel for Christchurch City Council

10 Evidence in chief, paragraph 6.21.

11 Rebuttal, paragraphs 5.1 and 5.2.

Appendix B

Evidence of Malcolm Smith

BEFORE THE CHRISTCHURCH REPLACEMENT DISTRICT PLAN INDEPENDENT HEARINGS PANEL

IN THE MATTER	of the Resource Management Act 1991 and the Canterbury Earthquake (Christchurch Replacement District Plan) Order 2014
AND	
IN THE MATTER	of the Residential Stage 2 Proposal

STATEMENT OF EVIDENCE OF MALCOLM GROVE SMITH ON BEHALF OF G A & G Y MCVICAR (Submission no. 2362)

Dated: 27 August 2015

Harmans
Lawyers

PO Box 5496, Christchurch 8542
DX WP24506
Telephone: (03) 352 2293, Facsimile: (03) 352 2274
Solicitor: B R D Burke
Counsel: B R D Burke

Brian.burke@harmans.co.nz

BRB-204587-36-79-V1

STATEMENT OF EVIDENCE OF MALCOLM GROVE SMITH ON BEHALF OF G A & G Y MCVICAR

MALCOLM GROVE SMITH states:

Qualifications and Expertise

1. I am a consultant specialising in strategic advice and facilitation in the areas of land use, land development and subdivision.

2. I have been involved in land development and subdivision activities in New Zealand for the past 33 years. I have particular experience in project management and coordination of new land developments, subdivisions and cadastral surveys for both urban and rural purposes.

3. My work includes project management advice on development concepts or proposals, applying for and obtaining statutory consents and approvals, undertaking the physical construction works, attending to the conditions attaching to statutory consents and approvals and completing legal requirements up to and including the issuing of new titles.

4. I have worked in the Canterbury Region as well as the South Island Area continuously since 1988, and during this time I have been involved in a large number of projects of varying sizes and complexities. Many of these projects have involved urban type development in areas where typical urban infrastructures are either limited or unavailable.

5. I hold the following memberships and qualifications:

   - Bachelor of Surveying with Credit (BSurv) Otago University of New Zealand (1981).
   - Registered professional surveyor (accredited status);
   - Member of the New Zealand Institute of Surveyors;
   - Member of the Consulting Surveyors of New Zealand;

6. I have prepared my evidence in accordance with the Code of Conduct for Expert Witnesses (Environment Court Consolidated Practice Note, November 2014).

7. The issues in my Statement of Evidence are within my area of expertise except where I state that I am relying on the evidence or advice of another person.

8. The data, information, facts and assumptions I have considered in forming my opinion are set out in my evidence below.

9. I have not omitted to consider material facts known to me that might alter or detract from the opinions I have expressed.

10. The key documents which I have relied on in preparing my evidence are as follows:

- The Operative Christchurch District Plan;
- The Stage 2 of the Christchurch Replacement District Plan;

11. I have read the relevant parts of the Evidence of Sarah Oliver (Planner), Robert Norton (Planning Engineer – Stormwater), Bridget O'Brien (Environmental Engineer – Water and Waste Water), Andrew Craig (Landscape Architect), Dr Charles Wright (Geotechnical Engineer).

Scope of Evidence

12. In 2014 I was asked by some of the lot owners to carry out an investigation of the development potential of the 5 adjoining forestry blocks at the top end of Worsleys Road which are the subject of Mr and Mrs McVicar's submission. The scope of my evidence relates to the feasibility of a 10 lot subdivision for the subject sites. The exercise comprised the following:

(a) Research council services and infrastructure;

(b) Review potential planning aspects and requirements relevant to creating some residential activities;

(c) Site inspection to view the property, surrounding areas and consider the location and extent of any residential activities;

(d) Prepare a conceptual layout plan of the possible dwelling positions and associated allotment extents;

(e) Consider access and servicing requirements for the conceptual layout;

(f) Consider the range of tasks and activities that would be necessary to undertake the development and indicative costs of the same.

13. The present zoning of the allotments under the Operative Christchurch District Plan is Rural Hills. This zoning allows for very low levels of development – typically allotments of 100ha and density of dwellings also of 1 per 100ha. The zoning under the Christchurch Replacement District Plan is Rural Port Hills which provides for the same level of development.

14. On the south side of Worsleys Road, the lands are generally zoned Living Hills B under the Operative Christchurch District Plan. This zone provides for low density residential development – allotment sizes of 3000m^2 and a similar density for dwellings. It is of note that this zoning extends over the higher portions of the southern Worsley Spur slopes, and opposite all of the subject area with the exception of the eastern most allotment (Lot 15 DP 26575) although the back

portion of the zone is opposite Lot 15. This area is zoned Residential Large Lot under the Christchurch Replacement District Plan. The same level of development is maintained.

15. The Living Hills B zone under the Operative Christchurch District Plan also extends along the north side of Worsleys Road, however ends one property to the west of the western most allotment (Lot 11 DP 26575). Importantly, the zone only extends generally 75m from the Worsleys Road boundary. Below this is Rural Hills zoned land. This area is zoned Residential Large Lot under the Christchurch Replacement District Plan.

Subject Site

16. Attachment 1 is a copy of Planning Map 50 with the subject area highlighted.

17. The typical maximum ground slope of the subject area is 20º to 25º. This equates to 1 in 2.75 gradient (vertical to horizontal).

18. The land immediately to the north of Worsleys Road is relatively flat for a small distance, before sloping down in terms of the above gradient. The width of the relatively flat portion varies from 25m or thereabout to 50m or thereabout.

19. The track within Worsleys Road has a variable gradient, however the maximum is in the order of 1 in 7.

20. There are a number of small rock outcrops about the subject area, and more so close to Worsleys Road. There are a number of smallish boulders/rocks that are sitting on the ground.

Proposed Rezoning

21. Attachment 2 is a concept layout plan which outlines ten (10) potential dwelling locations, and corresponding allotments. It then provides a balance land parcel that comprises the residual lands about the subject area. From a surveying point of view, the concept allotments can be made no less than 3000m^2 or greater than 1.015ha if that is regarded as more appropriate. The line below which residential dwellings could not be erected would not have to change.

22. From a development point of view I consider that extending the Residential Large Lot zone over the subject area in the same manner as that which applies to Lots 1 to 9 DP 26575 would be consistent with the very low density residential development in the area. Five (5) of the building areas sit at least 20m down from the upper edge of the main hill slope. The remaining five (5) building areas are about the flattish lands immediately beside Worsleys Road.

23. The placement of dwelling sites in these locations is in response to visual amenity considerations. The five dwellings located a small distance down the hill slope will ensure that the backdrop is still hillside when viewed from the main City environs. The five dwellings on the flattish lands immediately adjoining Worsleys Road should have established vegetation as a backdrop, and this will then

minimise the perception that they are protruding above the "skyline" when also viewed from the main City environs.

24. The proposal would continue the theme of limiting the residential development outcome to the upper northern slopes, and in the vicinity of 75m – 100m from Worsleys Road, avoid visually obtrusive housing development at higher densities, and avoid excessive "clustering".

25. The proposal avoids shared access (Rights of Way) to building areas. This allows each property to have their own exclusive access that will then be minimalistic in form and less visually obtrusive. It also avoids shared maintenance aspects that can be problematic in the long term.

26. There are adequate setbacks of dwellings to boundaries. Road setback is a minimum of 5m – 10m and internal setbacks are a minimum of 10m.

27. There is an adequate separation of dwellings to the Balance Area for fire hazard avoidance. The Christchurch Replacement District Plan provides for a 30m separation of dwelling to woodlot. I would suggest a 40m to 50m separation. This will particularly apply to the lower slope boundary. Trees could be planted on the lower slopes of the proposed allotments to the Council's specifications.

Services

28. I foresee the access and infrastructures design activities as being reasonably straight forward albeit there will be a degree of design innovation particularly in respect of Sewage and Stormwater Disposal and High Pressure Water Supply.

29. Attachment 3 is a summary of subdivision engineering considerations.

30. Sewage could be individually pumped from each dwelling to the urban network – Aglaia Place. The sewage disposal will rely on individual allotments pumping their sewage downhill to the City network, and some careful design will be appropriate. However it should be feasible. Note that I have spoken to the supplier of the E/One sewer system and have been advised that this type of system should be suitable for this development proposal.

31. HP Water can be provided via the urban network in Worsleys Road, albeit there would be a need to be a pumped supply from the present CCC reservoir opposite Lot 12 DP 26575 to an "upper reservoir", and then a shared submain providing individual supplies to each dwelling.

32. Alternately, a pumped supply may be provided directly to each allotment without the need for an "upper reservoir".

33. I note also that the water supply needs to provide for firefighting as well as a potable water supply. Both the "upper reservoir" concept and the alternate direct supply option be able to provide for both.

34. Stormwater disposal would be via individual systems within each property. Likely a collection facility/tank to take discharges, and then with a "trickle" type disposal network over the land that controls discharge rates in an acceptable manner.

35. In general terms, all storm water from the development will have to be collected, treated if it has potential to contain contaminants and then discharged to ground in an appropriate manner. The method of discharge to ground will be important as discharges onto the hillside can lead to scouring and erosion. Therefore, it will be important to carry out the discharge in a careful and controlled manner – generally by systems that either "trickle" the discharge over large areas and at slow velocities, or discharge in a contained/concentrated manner however with virtually all of the "water energy" taken out.

36. Power and comms would be via standard underground extensions to the present networks. There is overhead power to the western end of the subject area. There is underground communications at least to this point, and possibly running further up Worsleys Road to at least the CCC reservoir opposite Lot 12 DP 26575.

37. It should be acceptable to extend vehicle access up Worsleys Road. I envisage that Council will allow an adequate formation within their legal road corridor albeit with construction costs met 100% by the owners. I note that a similar formed access may be required as the lands to the south are developed, and they want to utilise Worsleys Road for access to their properties. In addition, I understand that the recently consented Christchurch Adventure Park project is most likely to require vehicle access to a point above Lot 15 DP 26575. Clearly this will involve a similar formation.

38. A formed and sealed access of 4.5m, and with suitable shoulders and side swales to control and dispose surface runoff would be able to be formed. I am satisfied that the vertical gradient of this proposed access will be acceptable.

39. Access to all allotments will be via individual driveways. Those to the buildings on the sloping lands will "chase the contour" to a degree and enable suitable gradients.

40. Generous separations exist between adjoining buildings – approx 30m minimum. This should assist with the sense of very low density and avoidance of visually obtrusive housing at higher densities etc. It should also enable each dwelling to establish a suitable curtilage incorporation generous plantings and the like.

41. The lower slope boundary location is somewhat arbitrary, however the intention is to provide a generous separation between the dwellings and the adjoining "Balance Area" so as to deal with fire separations and the like.

42. The physical construction works should be reasonably straightforward albeit care will need to be taken to control storm water runoff during the exercise. A sediment and erosion management plan will be required, and this will have to be closely adhered to throughout the works phase.

Subdivision Costs

43. There will be a high level of expense to work through the development process, and then provide appropriate vehicle access and normal urban infrastructures to the proposed allotments. However, some of the cost could be shared with the owners of the RLL zoned land on the south side of Worsleys Road if and as they utilise the infrastructures.

44. I have determined an initial and high level development cost for the proposal and my present view is that it will be necessary to achieve a yield of 10 allotments to then have some expectation that the development will be economically viable.

45. In my view it may not be economic to provide the necessary infrastructure for the sites for less than ten allotments.

46. Notwithstanding, I note that the lot owners have proposed in the alternative a zone which allows for at least one residential dwelling per lot. This may still be economically viable depending on the level of access and infrastructure required for this alternate development scenario.

Dated: 27 August 2015



Malcolm Smith

BRB-204587-36-79-V1

Attachment 1

Planning Map 50 with the subject area highlighted.

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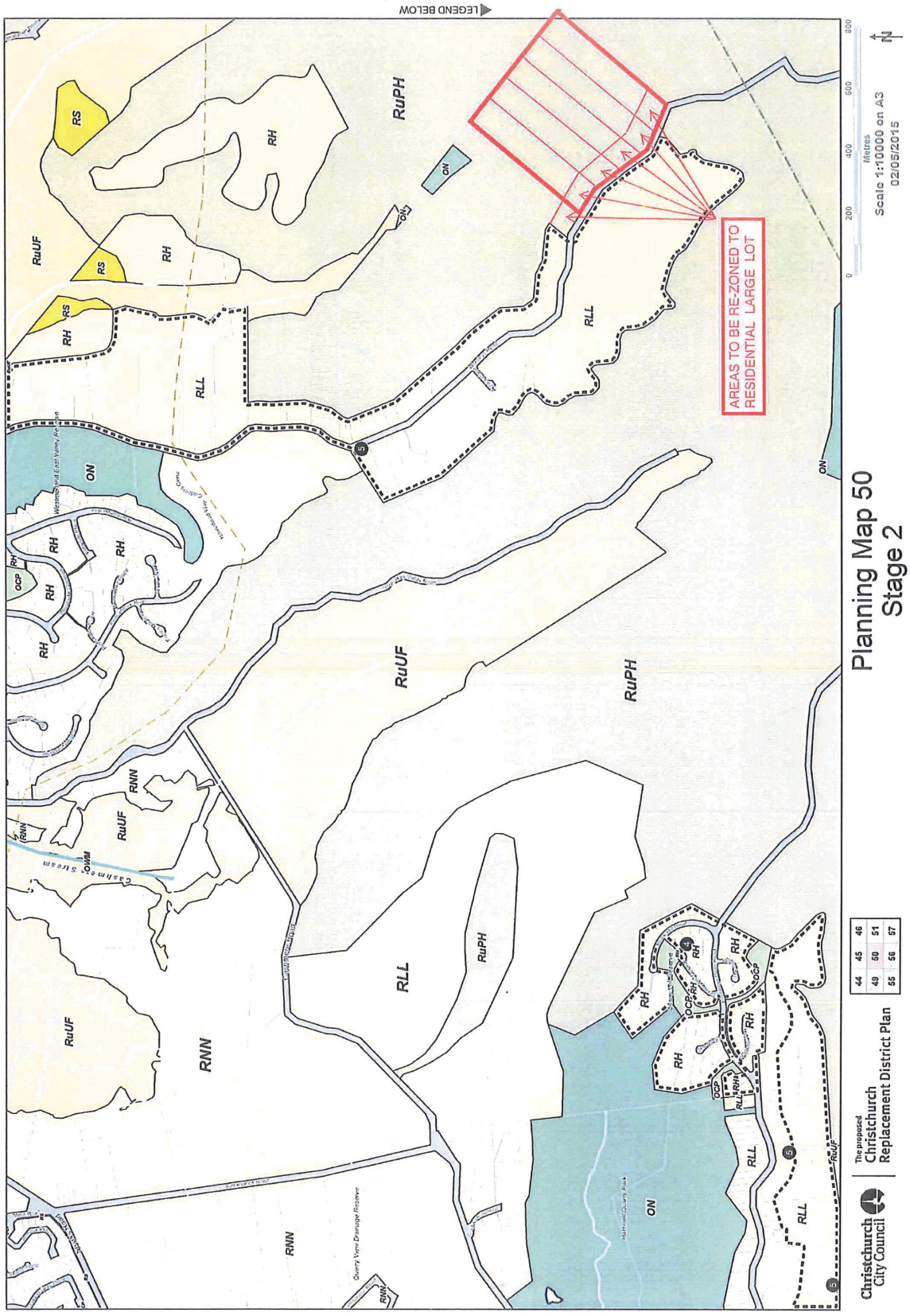
LEGEND BELOW
AREAS TO BE RE-ZONED TO RESIDENTIAL LARGE LOT
Planning Map 50
Stage 2
Scale 1:10000 on A3
02/05/2015
Metres
0
200
400
600
800
Christchurch City Council
The proposed Christchurch Replacement District Plan
RuPH
RuUF
RLL
RNN
RS
RH
ON
OCP

Attachment A Item 4

Attachment 2

Conceptual Layout Plan.



Page 175

Attachment A Item 4

Attachment 3

Summary of Subdivision Engineering Considerations.

Malcolm Smith Consulting Ltd

41A Avonhead Road
Avonhead
Christchurch 8042
New Zealand

T +64 21 645 003
E malcolmgsmith@me.com
W www.malcolmsmithconsulting.co.nz

MALCOLM SMITH CONSULTING
ADVISING AND FACILITATING ON LAND DEVELOPMENT AND SUBDIVISION

Memorandum

Project:	McVicar and Others: Worsleys Road, Port Hills	Reference:	076

To:	Copy:	Name:	Organisation:	Location:
✓		File		
From:	Malcolm Smith	Date:	26 August 2015	Total pages: 3

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Subject: Subdivision Engineering Considerations

ACCESS

1. Allow 150m of upgrade to the existing sealed road.
   - Widen existing seal by 1.5m
   - Create a S/W swale along the side of the widened seal

2. Allow 450m of new sealed road.
   - 4.5m sealed surface with a full crossfall.
   - Presume we need 0.150 AP65 and then 0.150 AP40 sitting above a prepared subgrade.
   - Formed and metalled shoulders on both sides.
   - S/W swale on one side to take surface runoff.

3. Allow for 10 vehicle entrances as per the main access carriageway, at 3m long and 3m wide.

4. Allow for a three-point turn at the top of the main access – turning for rubbish truck etc.

5. No pedestrian access footpath required at this stage – pedestrians can use the main access road.

SEWAGE RETICULATION

6. Allow for a total of 1,050m of pressure main to be laid in the main access road and discharge to the existing pumping main at intn of Worsleys and Aglaia Place.
   - 1,050m of pressure main in trench at 0.8m depth.
   - Connection into the existing pressure main at intn of Worsleys and Aglaia Place.
   - 10 non-return valves.
   - 10 lateral lines into the net areas – allow an average length of 10m each.

HIGH PRESSURE WATER

Option A

7. Allow for 4 lateral connections from the existing 150dia water main. To service the four lower allotments below the existing reservoir.
   - 4 by 150/25 joints
   - allow 4 by 10m laterals @ 25dia.
   - Allow 4 meter boxes and fittings.

8. For the six allotments above the reservoir, pump from a lower tank to an upper tank. Then provide a gravity supply from the upper tank to the six allotments.

1

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- 1 connection to a lower tank.
- Lower tank at 10,000 litres.
- Pump within lower tank including power supply.
- Allow 350m of pump line from lower tank to upper tank. Underground at 0.8m depth.
- Upper tank at 50,000 litres.
- Allow 300m of gravity line from upper tank to six allotments. Underground at 0.8m depth.
- 6 connections with meter boxes and fittings.

Option B

9. For all ten allotments, pump from a lower tank to an upper tank. Then provide a gravity supply from the upper tank to the ten allotments.
   - 1 connection to a lower tank.
   - Lower tank at 10,000 litres.
   - Pump within lower tank including power supply.
   - Allow 350m of pump line from lower tank to upper tank. Underground at 0.8m depth.
   - Upper tank at 50,000 litres.
   - Allow 500m of gravity line from upper tank to ten allotments. Underground at 0.8m depth.
   - 10 connections with meter boxes and fittings.

POWER RETICULATION

10. Allow for 400m of new underground power cable from the end of the existing overhead supply. Underground at 0.8m depth.
    - 400m of low voltage cable underground at 0.8m depth.
    - Pole mounted transformer to reduce from 33KV to std low voltage.
    - Provide 5 new boundary boxes (each serving two allotments).

COMMUNICATIONS RETICULATION

11. Allow for 400m of new underground comms cable from the end of the existing underground supply (assume it terminates about the water reservoir). Underground at 0.8m depth.
    - 400m of 50pair cable in a duct at 0.8m depth.
    - Provide 5 new upstands (each serving two allotments).

STORMWATER

12. Assume that each allotment will be serviced via individual and on-site stormwater systems. So each allotment incorporates an on-site storage chamber and then a "trickle" type disposal field that allows stormwater to discharge to the existing ground at a concentration and rate that replicates a natural and pre-development scenario.

13. However, the main access road will need to be suitably drained and this will incorporate a number of sumps within the roadside swale, and then discharge systems from each to a suitable natural watercourse close by. Assume one sump and disposal system each 100m of main access road. So a total of 7?
    - Allow for 7 sumps.
    - Allow for 30m of piping per sump.
    - Allow for each disposal system to have an energy dissipation mechanism (bouldered apron etc) at the lower end.

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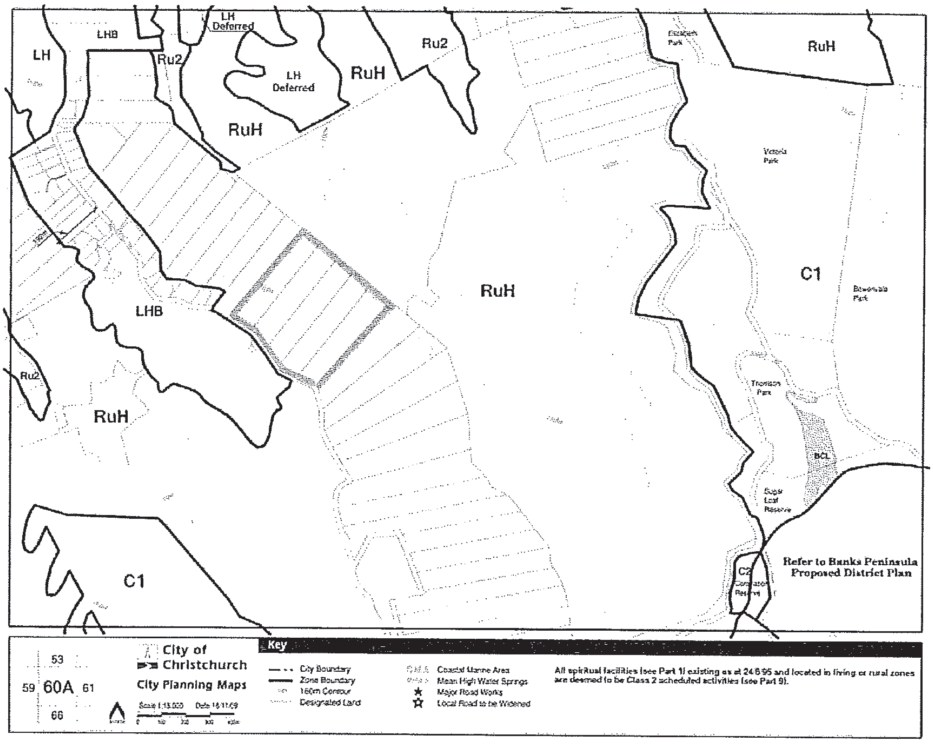

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Appendix C

Joint memorandum regarding Outstanding Natural Landscape (ONL)

BEFORE THE CHRISTCHURCH REPLACEMENT DISTRICT PLAN INDEPENDENT HEARINGS PANEL

IN THE MATTER	of the Resource Management Act 1991 and the Canterbury Earthquake (Christchurch Replacement District Plan) Order 2014
AND	
IN THE MATTER	of the Residential Stage 2 Proposal

MEMORANDUM OF COUNSEL ON BEHALF OF G A & G Y MCVICAR [#3613] AND THE CHRISTCHURCH CITY COUNCIL

Dated: 16 December 2015

Harmans
Lawyers

PO Box 5496, Christchurch 8542
DX WP24506
Telephone: (03) 352 2293, Facsimile: (03) 352 2274
Solicitor: B R D Burke
Counsel: B R D Burke
Brian.burke@harmans.co.nz

BRB-204587-36-518-V1

MEMORANDUM OF COUNSEL ON BEHALF OF G A & G Y MCVICAR [#3613] AND THE CHRISTCHURCH CITY COUNCIL

May it please the Hearings Panel:

1. This is a joint memorandum on behalf of submitter #3613, Graeme and Joy McVicar ("the submitters") and the Christchurch City Council ("the Council"). No further submissions have been made on #3613.

2. The purpose of this memorandum is to record an agreement reached between the submitters and the Council and the reasons for the agreement.

Background

3. The submitters filed a Stage 2 submission in which the submitters requested that the upper portion of Lots 10 to 15 (353 – 363) Worsleys Road be rezoned to Residential Large Lot ("RLL"). The submitters' Stage 2 submission (#2362) is the subject of a Joint Memorandum of Counsel dated 13 October 2015. The Panel has not made a decision on the submitters' Stage 2 submission (#2362).

4. For the avoidance of doubt, this memorandum relates to the submitters' Stage 3 submission (#3613) only. The submitters seek that the Outstanding Natural Landscape ("ONL") on planning Map 50, Stage 3, be amended to remove the ONL layer from an approximately 80 metre wide band running parallel with Worsleys Road consistent with the existing zoning pattern for Lots 1 to 9.

5. The submitters' requested alternative relief that if the ONL overlay was to remain over the site that rule 9.2.3.2.1 of the PCDP be amended to allow for the erection of two residential dwellings per lot as a permitted activity. Rule 9.2.3.2.1 provides for rules for residential units within the ONL and is in addition to site density rules in the PCDP which were considered during the Stage 2 hearing. For

the reasons given below, the submitters no longer request the alternative relief in their Stage 3 submission (#3613).

6. The submitters landscape architect, Jeremy Head, and the Council's landscape architect, Yvonne Pfluger, have produced an expert conferencing statement which is attached to this memorandum and marked "**A**". They agreed at the conference that a partial removal of the ONL on Lots 11 to 14 would lead to appropriate landscape outcomes. They agreed that it would be appropriate to remove the ONL overlay (approximately 350m in length) on the flat parts of these lots with an off-set from the road similar to the adjacent existing zoning on the lower spur. They further agreed that the partial removal of the ONL would be compatible with the residential development pattern for Lots 1 to 9. The main reason for their conclusion was that the RLL zone on the western side of Worsleys Road already extends as far as Lot 14. The existing landscape character of the site will be modified in the future following development of the west side of Worsleys Road.

7. At a subsequent mediation on 24 November attended by Mr McVicar and a subsequent meeting between Mr Head and Ms Pfluger, discussions were had concerning the removal of the ONL from the lower part of Lot 15. Mr Head and Ms Pfluger agreed that it would not have significantly adverse effects on the ONL to establish one dwelling on Lot 15 in proximity to the other lots as it would be visually associated with the existing development along the road and avoid creating an awkward orphan lot with little foreseeable use or value which could result in poor landscape outcomes.

8. Following both the expert conferencing and mediation Mr Head and Ms Pfluger have agreed that it would be an appropriate landscape outcome to remove the ONL from an 80 metre wide area on Lots 11 to 14 and half of Lot 15. The area in question is shown on the map on page 7 of the graphic attachment of the Statement of Ms Pfluger dated 2 December 2015. A copy is attached and marked "**B**". The area in question with the proposed removal of the ONL is shown on

figure 2, page 3 of the Evidence of Mr Head dated 10 December 2015 which is attached and marked "**C**".

Decision sought from the Panel

9. Therefore the submitters and the Council request that when the Panel makes its decision on the Stage 3, Natural and Cultural Heritage Proposal, Planning Map 50 be amended in accordance with attachment C by removing the area shaded orange from the ONL.

Dated: 16 December 2015

B R D Burke

Counsel for submitters

W Bangma

Counsel for the Christchurch City Council

BRB-204587-36-518-V1

"A"

Independent Hearings Panel

Christchurch Replacement District Plan

Te paepae motuhake o te mahere whakahou a rohe o Ōtautahi

In the Matter of the Canterbury Earthquake (Christchurch Replacement District Plan) Order 2014 and Resource Management Act 1991

And

In the Matter of Directions by the Independent Hearings Panel pursuant to cl 9 of Schedule 3 of the Order

EXPERT CONFERENCING STATEMENT

LANDSCAPE: CHAPTER 9

TOPIC: 9.2 OUTSTANDING NATURAL FEATURES AND LANDSCAPES, SIGNIFICANT FEATURES AND LANDSCAPES, AND AREAS OF NATURAL CHARACTER IN THE COASTAL ENVIRONMENT

Monday 09 November 2015

1. EXPERT CONFERENCING

Expert conferencing for this topic was held on Monday 09 November 2015 at the Hearings Venue, 348 Manchester Street, Christchurch. The session was facilitated by Environment Commissioner John Milne.

2. PARTICIPANTS

Name	Representing
Yvonne Pfluger	Christchurch City Council #3723
Jeremy Head	Graeme & Joy McVicar #3613

3. ISSUES DISCUSSED

In this expert conferencing session, the experts agreed that there were no issues requiring discussion other than those issues raised in the **Statement of Issues Relating to Natural and Cultural Heritage (Stage 3)** dated 29 October 2015.

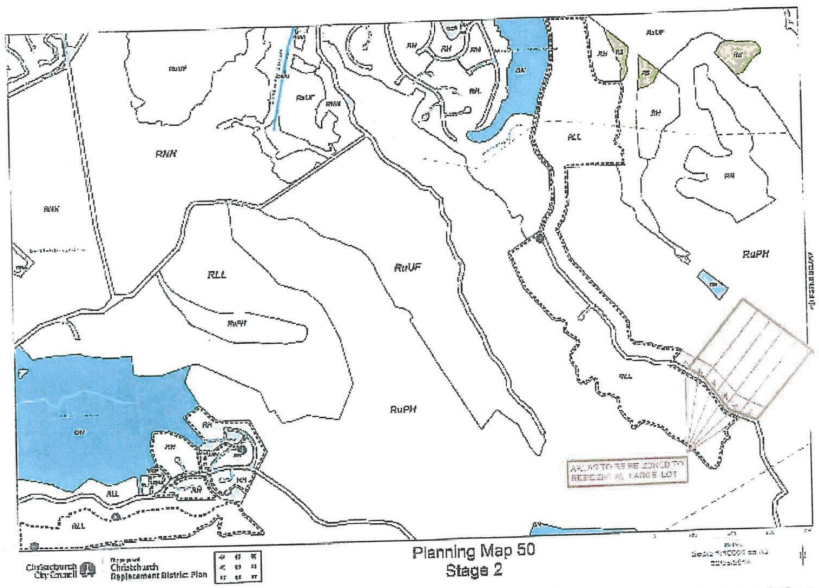
3.1 Statement of Issues: Issue 3(d) Have some sites been included within overlays when they have an underlying residential or special purpose zoning? And Issue 3(e) Is it appropriate to identify Worsley's Spur and Kennedy's bush land as part of a significant and outstanding landscape respectively, when those sites are zoned for residential purposes? And Issue 3(f) Are there sites that with 'ground truthing' do not meet the criteria to be included in an overlay?

The expert conferencing was focussed on a site-specific review of the Outstanding Natural Landscape (ONL) boundary on the submitter's land. The submitter asks for the boundary to be moved up the spur to allow for a rezoning of the land (five lots as shown on Map1 - Planning map 50 below) to Residential Large Lot (RLL).

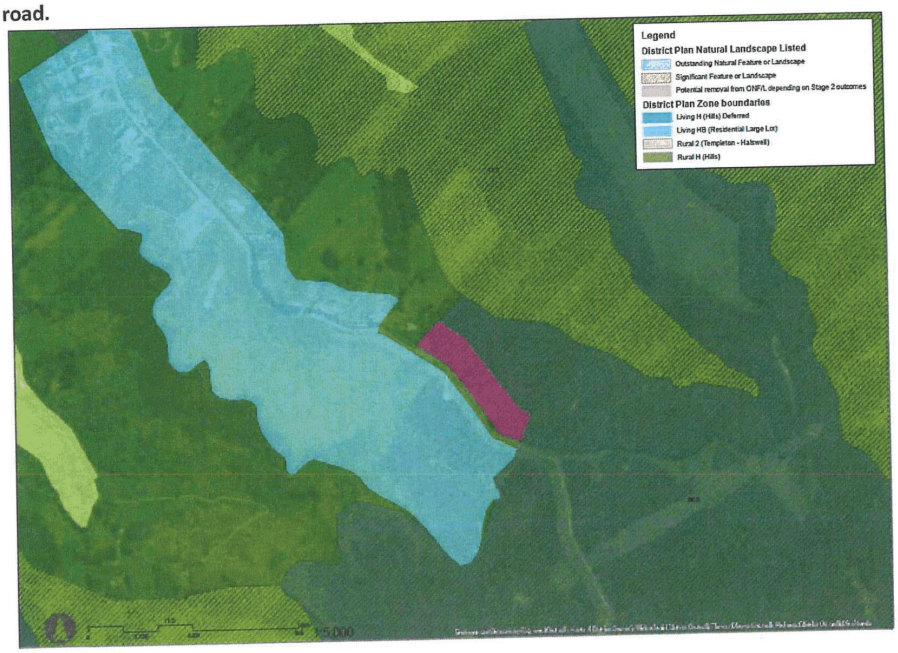
A submission has been made by G & J Mc Vicar on the Stage 2 Residential Chapter (submission # 2362) and outcomes from this chapter will influence the appropriateness of their submission on Chapter 9.2 from a landscape perspective.

If the rezoning to RLL is granted as part of Stage 2, the landscape experts agree that it would be appropriate to remove the ONL overlay (approx 350m in length) on the flat parts of these lots with an offset from the road similar to the adjacent existing zoning on the lower spur (ie approx 80 m east of the road). The area to be removed from the ONL under this scenario is illustrated on the map below. It is recommended to allow for the rezoning on the eastern side of Worsley Spur Road as far as on the western side, since the landscape character will be modified along this part of the spur due to the anticipated residential development under the existing RLL (Rural Living HB) zoning west of Worsley Spur Road. This would mean that the highest lying lot of the Mc Vicar submission would not be rezoned but is to remain in Rural Zoning and hence in the ONL overlay. It is also recommended that the rezoning would not extend onto the eastern slopes of the lots where they confine the adjacent valley to the east, since this would substantially change the existing land use pattern with residential development on top of the spur (rather than its sides).

Should the rezoning not be granted in Stage 2, the council witness considers that the ONL identification should remain in place as proposed by CCC. It is, however, recommended by both witnesses to grant the rezoning along the 80 m wide top of the spur as far south as the currently existing RLL zone boundary on the western side of Worsley Spur Road.



Map 1 from submission #2362 showing 5 lots for rezoning to RLL. Experts recommend that only four of these lots should be rezoned to align the boundary with RLL on the western side of the road.



Map 2 showing the area recommended by both experts for removal from ONL, if the RLL rezoning is granted under the Stage 2 submission (#2362).

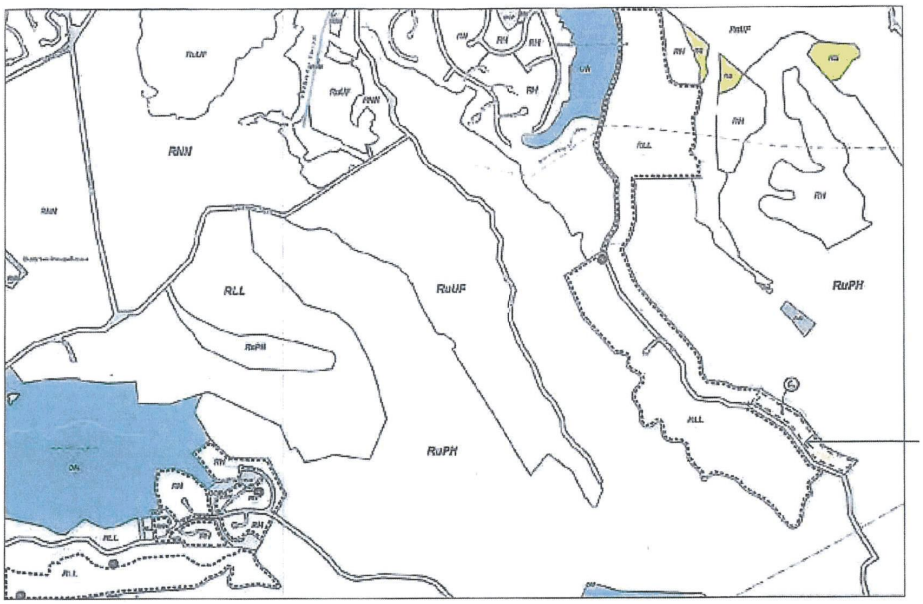
We confirm that this Expert Conferencing Statement is a true and accurate record of the conferencing session held on 09 November 2015 and we have complied with the Code of Conduct for Expert Witnesses.

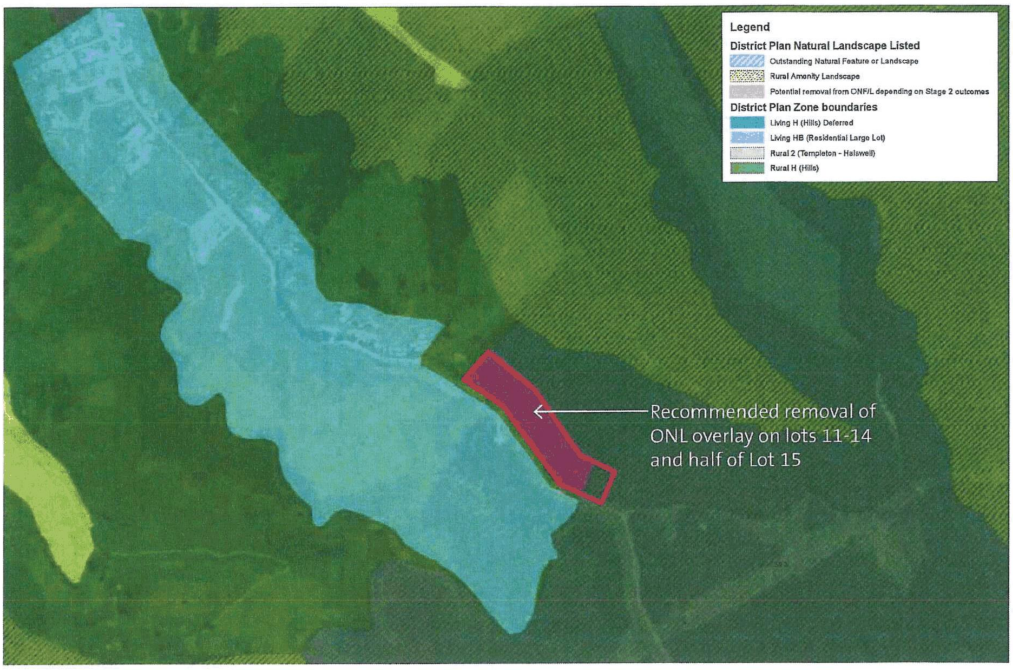
Signed:

Name	Signature
Yvonne Pfluger	
Jeremy Head	

"B"

File Ref: C14043_YP_Evidence_Graphic_Attachment.indd





Top map: Map from submitter's request for rezoning (stage 2 CRDP) on their properties (lots 10-15 Worsely Spur).

Bottom map: Map from conferencing statement (removal of ONL from lots 11-14) overlaid with additional recommendation for removal of ONL 38.3 (half of lot 15) as agreed in mediation.

Boffa Miskell
www.boffamiskell.co.nz

Not to scale

Data Sources: Aerial photography sourced from ECAN, parcel and zone boundaries sourced from CCC. Internet screenshots of properties are taken from http://proposeddistrictplan.ccc.govt.nz/propertysearch/

Projection: NZGD 2000 New Zealand Transverse Mercator

CRDP | INDEPENDENT HEARINGS PANEL
Christchurch Port Hills
Submitter McVicar | # 3613
Evidence of Yvonne Pfluger for CCC | November 2015

Page 7

"C"


Worsleys Road Cashmere
Proposed rezoning
December 10, 2015
SITE
with indicative
subdivision layout
shown
Pylon 66 to 67
RLPH
RH
ON
ON
RLL
Worsleys Road
5
Hoon Hay Valley Road
KEY
Area proposed for extension to RLL Zone
and excluded from ONL layer
ONL boundary (proposed)
ONL boundary (existing)

Appendix D

LURP Review Christchurch City Council Comment

Exhibit B

Christchurch City Council

29th May 2015

Comments on the Land Use Recovery Plan Review
Environment Canterbury
PO Box 345
Christchurch 8140

Via email: LURP@ecan.govt.nz

To Whom It May Concern:

Land Use Recovery Plan Review – Christchurch City Council - Written Comment

1. Introduction

Thank you for the opportunity to comment on the review of the Land Use Recovery Plan. The Christchurch City Council (Council) is a strategic partner in the development of the Land Use Recovery Plan (LURP) and supports its vision and intent. We have split our comment into two parts. The first part provides general comment on the LURP and the process for its review, whereas the second part focuses on the actions.

2. General Comment

2.1 LURP Review - Process

We remain concerned about the need to undertake a full review of the LURP when it is only a year and a half old and some of the actions are yet to be completed. The full review process has the potential to be very resource hungry when staff of this, and other organisations, are fully committed. Notwithstanding the issue of resourcing, Council is concerned about the review's potential to confuse those people who are currently engaged in the Replacement District Plan (RDP) and Long Term Plan (LTP) processes. For example, the review's consultation pamphlet raises 'considerations' on residential and business activities when these are being heard through the RDP process. Similarly, it's also asking questions about infrastructure (wastewater, cycleways and stormwater etc) when these issues are being addressed through the LTP. A significant amount of work has gone into both the LTP and the RDP and we don't want them being re-litigated through the LURP Review.

2.2 Timeframes

When Council endorsed the LURP in 2013 it did so on the assumption that it wouldn't carry any significant weight in decision making post the Canterbury Earthquake Recovery Act (CER Act) expiring in April, and any ongoing work would be reintegrated within the Urban Development Strategy (UDS) work programme. The consultation pamphlet indicates that the LURP review will be presented to the Minister for Canterbury Earthquake Recovery (Minister CER) by 30 September 2015, and presumably a revised document will be gazetted after that. Given the revised LURP will be 'approved' close to the time that the CER Act expires it raises the issue of whether the 'life' of the document is proposed to be extended post April 2016. From the Council's perspective, the LURP has been important for Christchurch's recovery, however, by April 2016 key documents such as the RDP, the Regional Land Transport Plan (RLTP), the LTP and changes to the Canterbury Regional Policy

Civic Offices, 53 Hereford Street, Christchurch, 8011
PO Box 73012, Christchurch, 8154
Phone: 03 941 8407, Facsimile: 03 941 8337
Email: Richard.osborne@ccc.govt.nz
www.ccc.govt.nz

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Statement (CRPS) will be embedded, and as outlined below we do not consider it necessary to continue the majority of the actions, or create new ones. Therefore, by April 2016 the LURP will have served its purpose and any ongoing issues should be addressed through the UDS framework.

2.3 Land availability

One of the key issues the LURP addressed was residential land supply. **Appendix A** of Council's 'comment' provides an overview of residential land supply. In summary, Christchurch has a plentiful supply of land to meet recovery needs and its growth needs into the future. Furthermore, the programme of work to bring forward infrastructure to support development is maintaining around 7-8 years of 'shovel ready' land with other sites expected to come online later in 2015 as well as 2016. As well as urban redevelopment and intensification opportunities, there is a competitive range of sources in the supply of residential land. Therefore, apart from the 'residual' land around Cranford Basin (refer section 3.11) we do not consider the LURP needs to re-zone additional Greenfields residential land.

That said, there is concern that the current CRPS policies that provide for new residential development lack some flexibility. Specifically Policy 6.3.1 - Development within the Greater Christchurch area ensures that "...new urban activities occur only within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are expressly provided for in the CRPS." This direction has been carried through under Strategic Direction Objective 3.3.7 Objective - Urban growth, for and design, specifically clause 3.3.7.c. Whilst the Council in not advocating for any major changes to the existing urban area or greenfield priority areas, there are some relatively minor changes to the existing urban boundary (i.e. a change in zoning from rural to residential) that are considered to have merit at the local level and do not compromise any higher level policy direction. It was the Council's past position that some flexibility is provided for within regional growth policies to enable local councils to make minor boundary adjustments. Proposed Change 1 to the CRPS usefully included the following and a similar policy could be directed to be included as part of CRPS Policy 6.3.1:

"Policy 12: Resolution of Urban Limits (a) During the process of completing district plan changes and Outline Development Plans, territorial authorities may make minor amendments to provide for urban zoning outside the Urban Limits shown on Map 1 provided all the following conditions are met: (i)Any proposed extension or reduction will not change the Outline Development Plan area by more than 5 %; and (ii) Any additional land is contiguous with the Outline Development Plan area; and (iii) Economies of scale or other efficiencies for infrastructure would arise; and (iv)All other provisions of Policy 8 are met."

2.4 Actions - Overall Feedback

Of the fifty actions contained with the LURP, twenty-five relate to Council. Of these eleven required either immediate amendments to Council's Operative City Plan, or directed the District Plan Review. The remaining fourteen address a range of issues, which are subject to specific comment below. In summary, we do not consider that the revised LURP needs to include the majority of these actions as they have either been completed, or they simply represent work that is being undertaken as part of Council's or the UDS work programme.

3. Comment - Specific Actions

3.1 Actions 7-10

Civic Offices, 53 Hereford Street, Christchurch, 8011
PO Box 73012, Christchurch, 8154
Phone: 03 941 8407, Facsimile: 03 941 8337
Email: Richard.osborne@ccc.govt.nz
www.ccc.govt.nz

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These actions were aimed at supporting change in the Christchurch housing market, in particular to increase the supply and quality of urban living alternatives to the traditional suburban style single house on a site model. Providing for housing choice remains a critical response to changing demographics, affordability constraints and different lifestyle choices.

Action 7 - Council undertook an evaluation of options in response to this action in mid-2014. This identified a range of interventions which could influence urban intensification. Some of those attributable to the Council, such as Development Contributions policies and planning requirements, have or are being actively progressed. Others, such as local amenity upgrades to stimulate higher density urban renewal, will be undertaken once spatial patterns of growth become clearer. Other options to support residential intensification were also identified but lay in the hands of central government agencies, particularly financial and fiscal tools (e.g. purchase guarantees, loan underwrites, taxation differentials).

A clear area for focus, whether in the LURP review or elsewhere, would be on consistency and coherence of incentive approaches across the city. For example, the LURP (which is guiding the land use framework for wider Christchurch) has driven District Plan based incentives such as density bonuses (i.e. enabling higher density redevelopment where multiple sections are developed as part of one comprehensive development). In contrast, within the Central City, while there is a collective view that higher density residential development should be encouraged, no such mechanism has been promoted in the Christchurch Central Recovery Plan's residential chapter "A Liveable City." This means that there is inherent tension between the two planning approaches. Giving a more coherent view of where the priority lies will help investors who are seeking out development opportunities and public agencies who need to plan ahead for investment in infrastructure upgrades to support that growth.

Action 8 - This action was aimed at actively supporting the delivery of a number of pre-advanced projects through regulatory and operational processes. The projects, based on concepts produced by their promoters, offered clear potential to demonstrate a step change in the nature of housing delivery.

Affordable Sector proposals:

The two Christchurch City Council mixed tenure proposals are advancing with tendering processes underway and development expected to proceed during 2015. Housing New Zealand's (HNZ) exemplar projects, which were identified early in 2013, have not progressed despite the LURP putting in place a very enabling planning framework.

Private Sector proposals:

The first, and so far only, exemplar project to be approved - at Spreydon Lodge, North Halswell - has committed to a different and innovative subdivision process. The project has committed to Homestar6 rated homes, comprehensive design and mixed density development along with over 20% of the homes being provided values at $350-450,000. Having gained approval as an exemplar in April 2014, the inability to find an expedited pathway to enable the land to be rezoned for development has meant that this development, which could have commenced in late 2014, is now unlikely to see its first homes built until 2016. The Riccarton Racecourse proposal is now being progressed as a Christchurch Housing Accord project. Whilst not delivering anything significantly new in terms of housing choice, the release of the Racecourse Reserve (under the guidance of the

Civic Offices, 53 Hereford Street, Christchurch, 8011
PO Box 73012, Christchurch, 8154
Phone: 03 941 8407, Facsimile: 03 941 8337
Email: Richard.osborne@ccc.govt.nz
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Minster of Housing and Building) is being tied to the delivery of 30% of the 600 homes at prices of $450,000.

The main issues around this action have been the limited degree to which the projects have been incentivised. For the CCC and HNZ projects, the LURP had already provided planning rules to enable development, regardless of the proposal being otherwise exemplary. To some extent this has influenced Housing New Zealand's decision making. In the case of Spreydon Lodge, the rezoning of the land for residential development (accelerated marginally ahead of the main residential proposals of the District Plan review) and behind the scenes some flexibilities around infrastructure connectivity represent tangible incentives, along with the significant time that has been spent resolving complex implementation issues.

Looking to the future, there is a place for encouraging, incentivising and showcasing good quality examples of Medium Density housing. Examples which can help educate the development industry and new streams of buyer interest are important in helping people explore their housing choices. Alongside the exemplar projects, proposals like the East Frame, 36 Welles St and 350 Colombo St are case studies that, if well executed, can help reframe impressions of urban living, in turn stimulating the social vibrancy and economic vitality which a major urban centre should have.

Whether the LURP needs to continue to explicitly include an action in this area is questionable. However, as part of an action drawing together incentives (Action 7) and affordability (Action 10) there may be a case for a consortia of public agencies to invite, evaluate and support suitably framed and commercially viable projects in the future.

Action 9 - This recognised that HNZ's longer term programme needed coordinated action with other agencies, especially Council, to effectively plan for particular areas. With concentrations of stock in areas like Shirley, Aranui and Bryndwr, the Masterplans were intended to be a vehicle to positively work through the practicalities of delivery of area wide renewal and change. There was also recognition that the Dallington/Avonside area warranted future attention although progress would be pegged to decisions yet to be made about the future of the adjacent Residential Red Zone.

In 2013, prior to LURP being finalised, CCC and HNZ had already embarked upon a masterplanning exercise for Shirley. In early 2014, HNZ staff identified that they would see benefit in progressing area wide plans for the Bryndwr area and residual areas of Aranui. However, soon after that HNZ's resource focus shifted towards its short term priorities with more time being spent on dealing with issues on current sites. Notwithstanding this, HNZ recognise that a lack of masterplanning will impose pressures on their programme in future years and have recently (in April 2015) commissioned further resources to help work more closely with Council.

As such this matter is a practical relationship between HNZ and CCC and does not warrant a formal action, especially one that attributes the Council as the lead agency for the masterplanning of Housing New Zealand's redevelopment programme. The Council has allocated staff resources in each of the last 2 years to support these planning exercises and following a review in August 2014 and April 2015, looks forward to working with HNZ on these matters.

Action 10 - Council was a supporting partner to MBIE and others in delivering this action although in reality much of the activity has been incorporated into activity around the Christchurch Housing Accord. This vehicle has proven to be a more productive interface for discussion about affordable housing, future models of public housing management and delivery of a number of development projects.

Civic Offices, 53 Hereford Street, Christchurch, 8011
PO Box 73012, Christchurch, 8154
Phone: 03 941 8407, Facsimile: 03 941 8337
Email: Richard.osborne@ccc.govt.nz
www.ccc.govt.nz

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Recommendation - Remove Actions 7-10.

3.2 Action 14 - Enhancement programmes

This requires that Council's identify and implement programmes through relevant LGA instruments for public facilities at key activity centres and neighbourhood centres. Council responded to this action within the 12 month timeframe outlined in LURP, and we note that all suburban centre master plans agreed in 2011 have now been adopted and are being implemented. However, as indicated in section 2.4 of this 'comment', this is something that Council undertakes as part of its business-as-usual work programme and is not necessary to include an action within LURP.

Recommendation - Remove Action 14

3.3 Action 23 - Provision of infrastructure to support development

This requires Councils to coordinate the funding, sequencing and provision of infrastructure to support actions 19-22. Council achieves this through its LTP and Annual Plan process in accordance with the relevant legislation. It is not necessary for this to be an action within the LURP.

Recommendation - Remove Action 23

3.4 Action 24/North West Review Areas

Council seeks that Areas 1 and 3 in the North West Review Area be removed from the LURP as part of the review due to a number of issues identified with each site. These are summarised below:

Area 1

- Pressure on the intersections of Waimakariri Road/Harewood Road and Watsons Road/ Harewood Road with long delays for traffic seeking to turn onto Harewood Road;
- Significant costs to mitigate effects with a new road recommended between Area 1 and Harewood Road, to consolidate the primary access to Area 1 with the existing intersection of Harewood Road and Stanleys Road. Alternatives were considered including:
    - Signals at Watsons Road/Harewood Road (in addition to signals at Wooldridge Road/ Harewood Road to mitigate the effects of Area 2)
    - Realignment of Waimakariri Road to form an all-movements intersection with Sawyers Arms Road, to the east of its existing alignment
    - Reduced area for rezoning without upgrades to intersections with Harewood Road
- These alternatives raise other issues, for example, signals at Watsons/Harewood Road would not be supportive of the intended function of an arterial road while also leading to delays for traffic on Harewood Road.

Area 3

- The Integrated Transport Assessment concluded that the space between the interchanges of Memorial Ave and the Southern Airport Access is 'substandard' without the development of Area 3, resulting in efficiency and safety effects. In practical terms, vehicles travelling southbound on SH1 have difficulty moving from the right hand to the left hand lane to exit at the Southern Airport Access due to the large volume of traffic predicted to join the left hand lane southbound on Russley Road from Memorial Ave.

Civic Offices, 53 Hereford Street, Christchurch, 8011
PO Box 73012, Christchurch, 8154
Phone: 03 941 8407, Facsimile: 03 941 8337
Email: Richard.osborne@ccc.govt.nz
www.ccc.govt.nz

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- The issue described above is exacerbated by the development of Area 3 on the basis that additional traffic from Area 3 increases the load on the network, making weaving movements more difficult.
- A connection with the Southern Airport Access (proposed interchange adjoining Area 3) would require the designation and/or acquisition of land. This would be at a significant cost for the Council, notwithstanding the ability to recover costs through development contributions.
- Additional traffic on Hawthornden Road and Merrin Street as a result of Area 3 may pose an actual or perceived risk for school children. In addition to effects on safety, the increased traffic on Hawthornden Road and Merrin Street is anticipated to impact on residential amenity.
- Insufficient capacity in the wastewater network but capable of being addressed through upgrades to the network.

The relevant *draft* section 32 information is contained within **Appendix B**.

Recommendation - Amend action 24 and Figure 4: Map A as required to reflect the above, and change the CRPS accordingly.

3.5 Action 30 - Case management approach

Council has reviewed the Suburban Centre Case Management service and concluded that there is little demand for a proactive approach at this time. However, staff involved in the preparation the master plans remain available and well placed to support projects coming forward in the relevant suburban centres as they emerge.

3.6 Action 31 - Case management approach

Over the past three years Council and Canterbury Development Corporation (CDC) staff have provided case management services to businesses in the earthquake-damaged industrial zones of Woolston and Bromley. While there are still a few insurance issues to settle most firms are now focusing on business-as-usual issues. As such, these industrial businesses may continue to access the usual industry sector support from CDC advisory staff if they need it. Notwithstanding this, Council acknowledges there are a range of issues that need to be addressed around the Woolston area arising from the industrial nature of some of the activities and adjacent commercial and residential land use. However, these are longstanding issues that are not about earthquake recovery and case management per se. Council will consider an appropriate response on these issues in due course.

Given that many firms are now engaged in activities that are hard to differentiate from normal business-as-usual activity and that standard processes enable a case management response for both earthquake and non-earthquake development issues, there is little value in retaining reference to an earthquake-focused case management role in the revised LURP.

Recommendation - Remove actions 30 and 31.

3.7 Action 33 - Prioritised infrastructure programmes

Council has addressed this action within the timeframe outlined in the LURP. Notwithstanding this, it is noted that the purpose of action 33 was to enable quick amendments to Local Government Act

Civic Offices, 53 Hereford Street, Christchurch, 8011
PO Box 73012, Christchurch, 8154
Phone: 03 941 8407, Facsimile: 03 941 8337
Email: Richard.osborne@ccc.govt.nz
www.ccc.govt.nz

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(LGA) plans without going through unnecessary process. However, as the LURP was gazetted on 6 December 2013, the 6 month timeframe for completing this action coincided with the Annual Plan process. The Annual Plan set out the proposed amendments to the Three Year Plan 2013/16. This has now been revised through the draft Long Term Plan. Therefore, Council has a process to ensure that infrastructure is aligned with development, and as such it is not considered necessary roll-over action 33.

Recommendation - Remove action 33.

3.8 Actions 40 - Transport

The title of this section is "support an integrated transport network", and action 40 refers to "protecting future opportunities in network rebuild". The philosophy behind action 40 is captured in the relevant transport planning documents, and in the body of the LURP itself. Having this as an action has achieved little tangible benefit and Council does not consider there needs to be a specific action on this matter.

Recommendation - Remove action 40.

3.9 Actions 49 & 50

These two actions address the Canterbury Sustainable Homes Working Party work process (action 49) and improving access to information and advice (action 50). This work is occurring independent of the LURP and they do not need to be included as actions in the revised document.

Recommendation - Remove actions 49 and 50.

3.10 Infrastructure map

Figure 5: Key regional infrastructure requirements through to 2028 on page 33 of the LURP represented a snapshot of thinking at a particular time, which made it almost immediately out of date. It also only addressed transport infrastructure, and does not denote 'three waters' infrastructure. Many projects had not been through the Better Business Case process, the relevant land use decisions were yet to be made (e.g. Halswell KAC/exemplar and Lincoln Road) and funding has been re-considered through the LTP and the RLTP. These projects are best assessed and prioritised through the appropriate processes, which are the LTP /Annual Plan and the RLTP.

Recommendation - Remove Figure 5 - Key Regional infrastructure requirement through to 2028.

3.11 Cranford Basin

Council is seeking to have areas of land around the periphery of Cranford Basin rezoned (subject to the relevant Notices of Requirement being confirmed) from rural to a low density urban residential zone which would equate to approximately 200-250 household units. A report and map are attached explaining why such a re-zoning should now be considered and showing the extent of the land to be re-zoned, which is approximately 40 Ha. The relevant *draft* section 32 information on this forms **appendix C** of this feedback.

Recommendation - Make the appropriate changes to the LURP and the CRPS.

Civic Offices, 53 Hereford Street, Christchurch, 8011
PO Box 73012, Christchurch, 8154
Phone: 03 941 8407, Facsimile: 03 941 8337
Email: Richard.osborne@ccc.govt.nz
www.ccc.govt.nz

Christchurch City Council

4. Monitoring

We understand that the Minister CER will want to monitor the LURP's achievements, but most of the actions have either been addressed, are in train through the RDP and LTP process, or are simply occurring as part of the business-as-usual work programmes. Therefore, any on-going monitoring can occur as part of the UDS work programme. The UDS work that informed the LURP demonstrates that the partners were addressing the elements needed to guide macro level land use planning and these matters can continue to be addressed through that forum.

5. Conclusion

The Council would like to thank Environment Canterbury for the opportunity to provide feedback on the Land Use Recovery Plan Review. Should any issues need clarifying then Council staff are happy to discuss the content of this comment further.

Yours sincerely

Michael Theelen
Chief Planning Officer

Civic Offices, 53 Hereford Street, Christchurch, 8011
PO Box 73012, Christchurch, 8154
Phone: 03 941 8407, Facsimile: 03 941 8337
Email: Richard.osborne@ccc.govt.nz
www.ccc.govt.nz

Submission No: 059

aston CONSULTANTS
resource management & planning

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

Ernst Frei

November 2018

Greater Christchurch Partnership

Submitter Details

Name: Ernst Frei
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

I wish to speak at the hearings.
Preferred location: Christchurch City
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background and Site

The submitter Ernst Frei ('the Submitter') owns 564 Cashmere Road, legally described as Lot 1DP82258 ('the Site'), total 18.5ha. The Site is located on the corner of Cashmere intersecting with Hoon Hay Valley Road. It is currently grazed organically for sheep and cattle and has previously been an organic market garden, certified by BioGro.

The Submitter has owned the Site for approximately 40 years and has developed it as a very high amenity area with substantial areas of native planting and pond area. Areas of exotic trees (Radiata Pine and Eucalyptus) within the Site and which are approaching the end of their lifecycle are in the process of being removed.

Approximately 1.5 ha of the Site with frontage to Cashmere Road is zoned Residential New Neighbourhood Zone (RNNZ) and the balance (approximately 16.5 ha) is zoned Rural/Urban Fringe (as shown below). The RNNZ component is within Area 3b of the Hendersons Outline Development Plan Area (as shown below). The ODP covers proposed development areas around the periphery of the Hendersons Ponding Basin and so the urban/rural boundary here has an irregular shape. It is understood that the development areas largely relate to higher land, but also, in the case of 3b

have taken into account the location of existing buildings. The existing dwellings (two + an existing cottage) on the Site are just to the south, and outside the RNNZ.

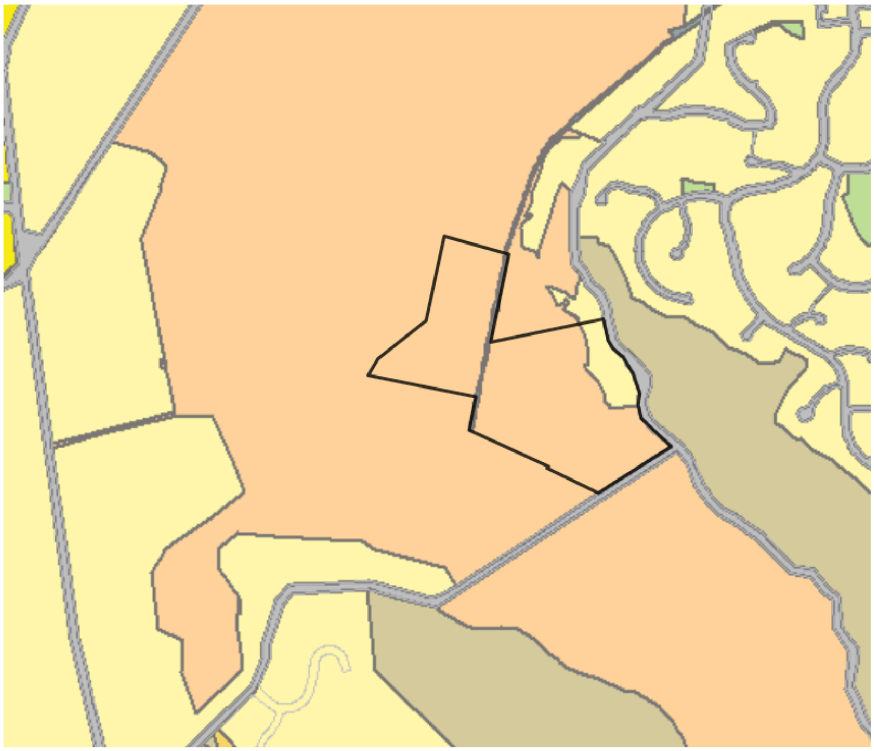

Fig 1: Zoning
Light brown – Rural/Urban Fringe
Yellow – Residential New Neighbourhood (RNN)
564 Cashmere Road (the Site) boundaries marked with black line

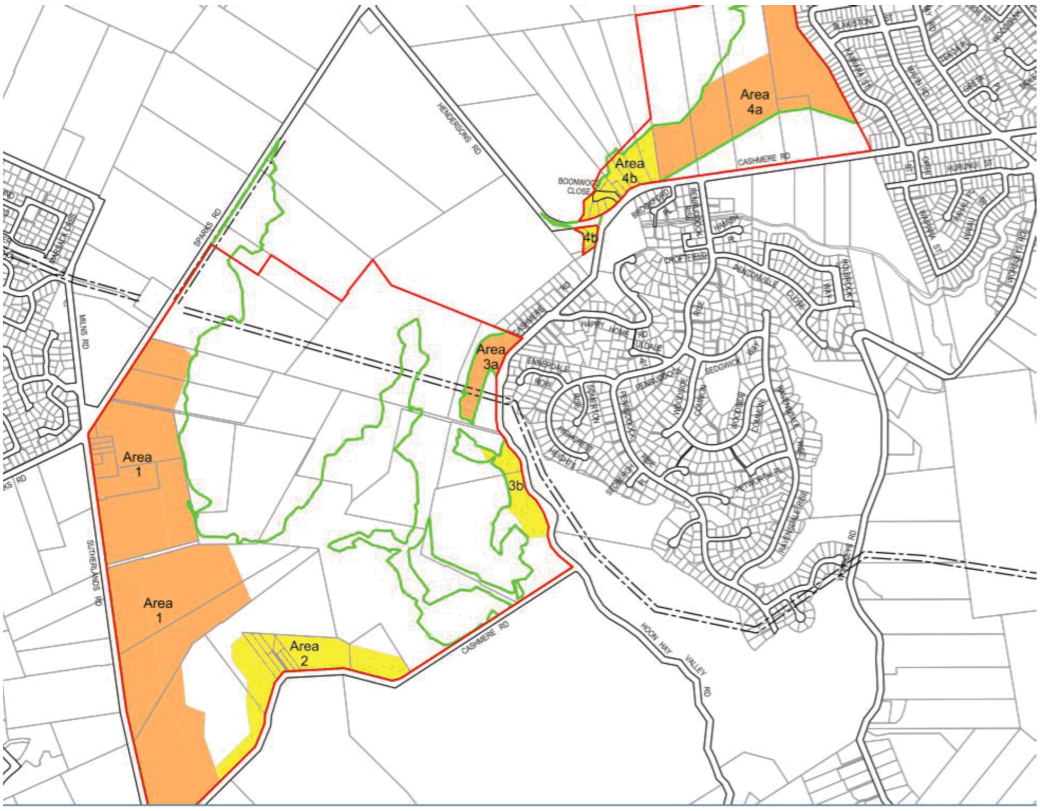

Fig 2: Hendersons Outline Development Plan

Land Use Recovery Plan (LURP) Greenfield area boundary marked green, Residential area boundary marked red.

The Hendersons ODP shows that the LURP Greenfield Priority Areas (on Map A of the Canterbury Regional Policy Statement) are more extensive than the ODP areas and New Neighbourhood. The reasons for the differences are not apparent or explained. The Greenfield Priority Area includes most of the proposed development area shown on the subdivision concept plan in **Appendix A**, whereas the RNNZ only covers the northeast portion. It is presumed that Fig 16 of **Our Space** locates the Greenfield Priority Area – Residential in the same position as on Map A. Approximately 3.9ha of the development area (which includes covenanted amenity areas) is located within Map A - Greenfield Priority Area with the balance (2 ha) located outside (refer to **Appendix A**). A total of 8.1 ha of the Submitter's property is within the Map A – Greenfield Priority. The development area, including the amenity area is less than this – 6ha i.e. the area of urban development is less than that provided for on Map A.

The current shape and size allocated as RNN on the Submitter's has very little to do with good urban design (including high level of amenities) but is merely the result of an overriding objective to reserve large areas of rural land for possible flood management purposes. . Any storm water implications with the development proposal however are very minor and the Submitter is very well positioned to address this with compensatory storage on their own land (see discussion under 'Suitability for Development' below).

Development Proposal

The Submitter wishes to develop a high amenity mixed density subdivision which retains and builds on the existing site features, and the attractive outlook onto adjoining proposed stormwater management areas. The proposed development area is approximately 5 ha (excluding the amenity area – 1 ha). It has been defined largely by the natural topography of the land. The natural ridge that can be clearly seen on the LIDAR (**Appendix D)** forms the curved boundary of the development.

A subdivision concept plan is attached as **Appendix A**. Two single entry points are proposed, thus avoiding the high amenity native planting around the Cashmere Road site frontages from being 'punctuated' by individual driveways onto Cashmere Road. This existing planting and other amenity features will be included in an 'amenity covenant' which prohibits its removal. Minimising the number of access points onto Cashmere Road is also beneficial from a traffic efficiency and safety perspective. The proposed development yield is 40-50 mixed density household units. This number of lots is necessary for the subdivision development to be feasible to develop. The proposed number of lots is necessary in order to spread the cost of infrastructure into the Site (ie principally sewage, stormwater).

Suitability of Land for Development

Possible Subdivision Concept:

An overall preliminary concept plan for the Site is attached as **Appendix A.** This shows an indicative roading pattern and amenity covenant area.

Servicing:

Attached as **Appendix B** is a letter from Fox Surveyors which confirms that there are no servicing constraints to development of the proposed zoning extension at the RNN Zone densities. (approximate yield 40-50 sections).

Potential Constraints:

Site level

Appendix B states that the proposed development area is similar to the area of land already zoned RNN. It reports that while some of the proposed development area is at a lower level, filling could be used to raise the site to meet minimum required floor levels. Compensatory storage may be required as a result of increased fill levels. It is possible that this storage could be provided on the land to the west of the proposed development are, also owned by Ernst Frei.

Contamination

Appendix C is a letter from Environment Canterbury stating that the Site is verified as a non Hail.

Meritorious developments outside and changes to Rural/Urban Boundary

An unfortunate consequence of a fixed rural/urban boundary line in the CRPS and on **Our Space** Fig 16 and an associated objective and policy framework which requires 'avoidance' of urban activities outside that line (CRPS Objective 6.2.1 and Policy 6.3.1), is there is in effect, no flexibility to respond to minor anomalies, or meritorous boundary changes which do affect or compromise the **Our Space** overall urban management approach - such as the development proposal outlined is this submission for 564 Cashmere Road. Suggested policy wording is included in the Relief Sought below to address this issue.

The **Our Space** urban growth management approach is intended to provide certainty as to where development will take place to enable planning for and development of infrastructure required for projected urban growth; to protect key strategic infrastructure such as strategic transport networks; and to ensure development is appropriately located in terms of potential environmental effects.

Relief Sought:

Additions are shown in bold and underlined and deletions as strike through.

1. Amend **Our Space** Fig 16: Proposed locations of future development areas in Greater Christchurch by as follows:-

Change status of the proposed development area and amenity covenant areas shown on the Subdivision Concept Plan attached as **Appendix A** to Greenfield Priority Area – Residential.

2. 6.2 Schedule of future work

Amend 8 (page 34) as follows:-

Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement to:-

- amend Map A to be consistent with the relief sought in this submission (including 1. above and 3. below); and
- provide flexibility to accommodate meritous proposals for urban development and zoning and to facilitate a responsive planning approach to urban growth management by amending and adding to the objectives and policies as follows (insertions in bold and underlined):-

Add new Policy 6.3.1A as below:-

Policy 6.3.1 A

(a) Enable urban development or urban zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

(i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

(ii) Any additional land will integrate with the provision of infrastructure; and

(iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

(iv) The urban development or extensionwill have beneficial planning outcomes; and

(v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritous proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land

capacity assessments which have informed Map A, and with the primary drivers and influencers of urban development in Greater Christchurch.

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 **or which has only minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.1 Development within the Greater Christchurch area

In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS **or which have minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.7 Residential location, yield and intensification

In relation to residential development opportunities in Greater Christchurch:…

7. Subject to Policy 5.3.4, residential greenfield priority area development shall occur **generally** in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.

3. Remove the rural/urban boundary line shown on CRPS Map A and **Our Space** Fig 16 (defined as the outer edge of Greenfield Priority Areas, Existing Urban Areas and Special Housing Areas) and insert in the relevant District Plans, with appropriate criteria for assessments of proposals to amend 'the line' included in the CRPS and District Plans.

4. Consider streamlined RMA or other streamlined processes to facilitate the amendments sought which are specific to the Submitter's land and potentially other meritous minor rural/urban boundary changes, and associated policy wording. Do not use streamlined processes for implementation of the overall **Our Space** strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential

testing.

5. Consider other amendments to the CRPS and other documents and actions as appropriate which facilitate a responsive planning approach to urban growth management of Greater Christchurch.

6. Consider streamlined RMA or other streamlined processes to facilitate the amendments sought which are specific to the Submitters' land and potentially other meritous rural/urban boundary changes, and associated policy wording. Do not use streamlined processes for implementation of the overall Our Space strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

7. Such other consequential, additional or other amendments to Chapter 6 of the RPS and other documents, and any other actions, to be consistent with and give effect to the intent of this submission, including directing consequential amendment to the Christchurch City Plan to zone the proposed development area shown in **Appendix A** as Residential New Neighbourhood Zone.

Reasons for Relief Sought:-

1. For the reasons set out above under and under the responses to the Submission Form questions below.
2. The housing and business development capacity targets, urban form outcomes, and Schedule of Future Work measures (including change to the CRPS) contained in **Our Space** will have a profound and defining effect on the Greater Christchurch settlement pattern for the next 30 years. There will be very significant flow on effects for the local, regional and potentially national economies. There is an acknowledged high level of uncertainty with the housing and business development capacity targets; and the adopted approach is aspirational and untested with its focus being redevelopment and intensification of existing urban areas, underpinned by an as yet unfunded *"vision for transformation of the transport network that fosters much greater pubic and active transport usage, and reduced reliance on the private vehicle".* There is no s32 assessment accompanying **Our Space** despite its defining role in 'dictating' the urban growth approach for Greater Christchurch for the next 30 years.

3. The amendments sought will enable the owners of 564 Cashmere Road to use the Site in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).
4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects 564 Cashmere Road, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.
5. The development proposal for 564 Cashmere Road has considerable planning merit and will not offend or comprise the overall **Our Space** approach to management of urban growth within Greater Christchurch.
6. **The Our Space** development capacity targets are uncertain and likely to be inaccurate and are based on a flawed methodology.
7. **Our Space** considers a responsive planning approach to future the management of the Greater Christchurch urban growth but does not facilitate or enable this, whereas the relief sought is this submission does.
8. **Our Space** as notified is contrary to and does not give effect to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular Policy PB1 which requires housing capacity supply to meet demand for different types, locations and price points.
9. A fixed uncontestable urban/rural boundary line for Greater Christchurch as proposed by **Our Space** is unlikely to facilitate the urban form sought by **Our Space** including for the following reasons:-
    - Overly strict limitations on peripheral growth causes excessive land price inflation that in turn has a very negative effect on housing affordability;
    - A planning regulatory regime which provides for a contestable urban/rural boundary sends an important signal to the property market that it is best to get on with development rather than “land bank” (because there is excessive capital gain due to scarcity of land supply);
    - Containment and higher land values does not facilitate intensification;
    - If the Central City and the Key Activity Centres are attractive the market will locate there by people’s choice. Generally carrots are better than sticks to achieve desired planning outcomes.
    - A contestable urban/rural boundary is not ‘laissez-faire’ and ad hoc and will not result in uncontained urban sprawl. The proposed amendments to **Our Space** and other

planning documents require strategic planning including with respect to infrastructure, and an evidence base in support of any amendments to the boundary;

- A policy of both "up and out" that ensures there are a range of development opportunities and housing choices is appropriate.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

There needs to flexibility to respond to meritous changes to the urban/rural boundary in locations other than at Rolleston, Rangiora and Kaiapoi – such as to accommodate the development proposal outlined in this submission.

Question 2:

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.

Do you agree with this approach and why?

Response:

There needs to be an ability to provide mixed density neighbourhoods in Greenfield Priority Areas – to respond to local site and amenity characteristics and to ensure a mixed demographic which has positive social and economic benefits. The proposed development will be 'mixed density'.

Question 3:

Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.

What elements should be included in this action plan?

Response:
No comment.

Business Growth

Question 4:

Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.

Do you agree with this approach and why? What further measures would support such development?

Response:
No comment.

Question 5:

The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.

Do you agree or disagree this is sufficient and in the right location and why?

Response:
No comment.

Growth needs

Question 6:

The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.

Do you agree or disagree with this evidence base and why?

Response:
No comment other than to note that a responsive planning approach is important given the acknowledged uncertainties associated with the housing and business capacity assessments

used to inform the **Open Space** urban growth strategy, and with the primary drivers and influencers on urban growth within Greater Christchurch.

Transport and other infrastructure

Question 7:

Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.

Do you agree or disagree with this approach and why?

Response:

No comment other than to note that the development site is within a mere 150m of the current edge of Christchurch (Westmorland) and within 600m of the new 400 section development of "Redmund Spur.

Question 8:

Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.

Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:

No comment, other than it is noted that there are no infrastructure constraints affecting the development proposal.

Other

What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

Response:

No further comments other than as noted above.

Appendices

Appendix A: Proposed subdivision concept plan

Appendix B: Preliminary infrastructure report

Appendix C: Letter from Environment Canterbury - verifying 564 Cashmere Road as non Hail

Appendix D: LIDAR map

Appendix A

Proposed subdivision concept plan

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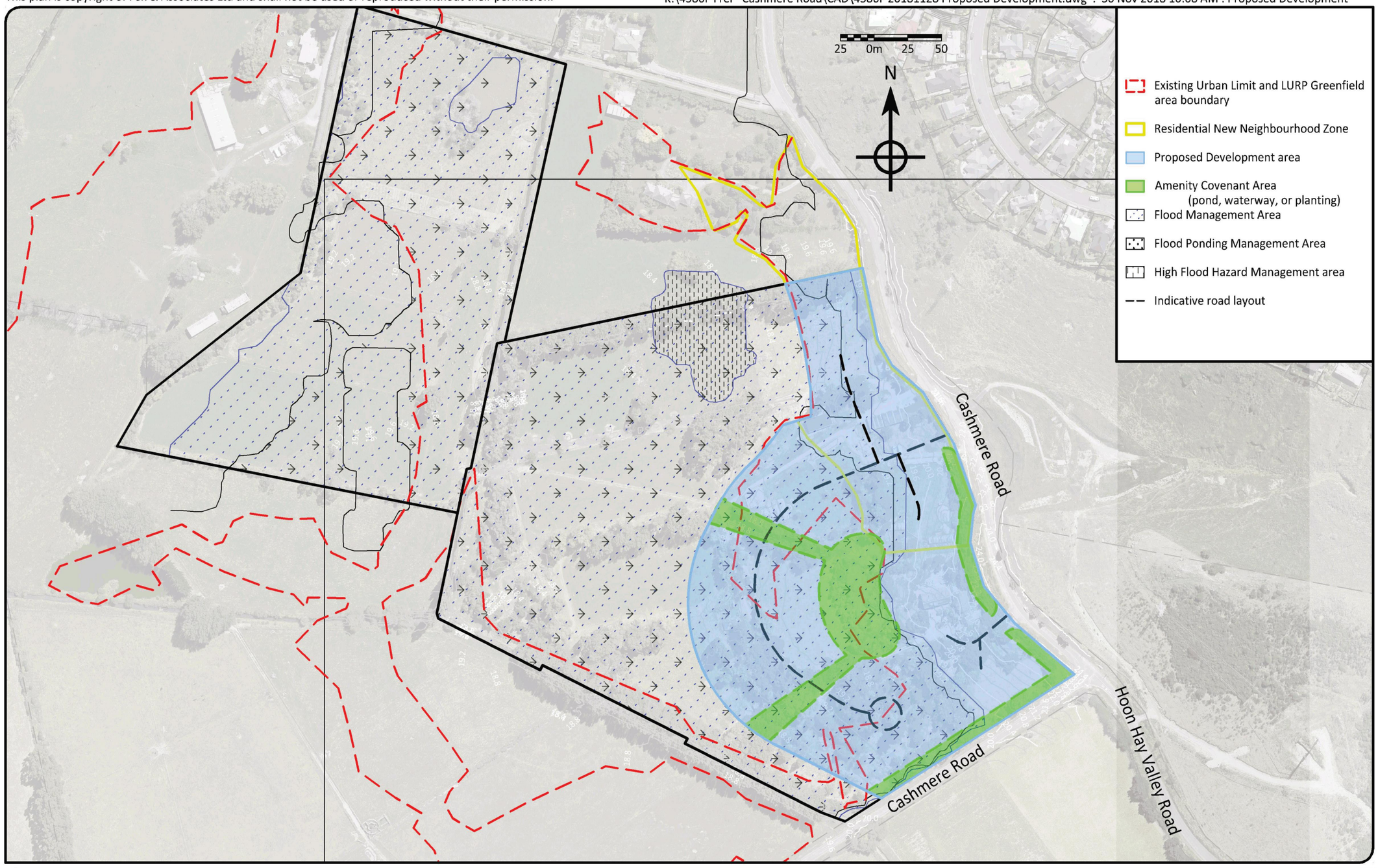


FOX AND ASSOCIATES
creating legacies with land
www.foxsurvey.co.nz
0800 FOX SURVEY
P.O.Box 895
CHRISTCHURCH

Proposed Development
564 Cashmere Road - Lot 1 DP 82258

No.	Revision	Appr.	Date
D	Dev Area amended	MJM	30/11/18
C	Key Updated	MJM	29/11/18
B	Viewshaft excluded	MJM	28/11/18
A	Urban Limit Updated	MJM	28/11/18

Scale 1:2500 | Designed | Drawn MJM | Date 28/11/2018 | Job No. 4386F | Rev. D

Appendix B

Preliminary infrastructure report

Date
28 November 2018

Job Number

4386F.01

195 Peterborough St, Christchurch 8013
PO Box 895, Christchurch 8140

0800 FOX SURVEY
0800 369 787

info@foxsurvey.co.nz
www.foxsurvey.co.nz

SUBMISSION ON GREATER CHRISTCHURCH SETTLEMENT UPDATE – OUR SPACE 2018-2048

CONCEPTUAL DESIGN AND SERVICING OF RESIDENTIAL DEVELOPMENT AREA

At: 564 Cashmere Rd

For: Ernst & Renate Frei

Date: 28th Nov 2018

Prepared by: Michael Martin - Surveyor and Land Development Consultant

Introduction
Our clients have owned the property at 564 Cashmere Rd for some decades, operating an organic farm from the site in the early years. Over the years they have planted significant areas of the proposed development area with native planting, and the proposed development is sympathetic to these existing plantings.

The majority of the land is flat and rises to the edge of Cashmere Rd on the northeast boundary.

A portion of the land in the northeast corner is zoned RNN (Residential New Neighbourhood). The Urban Limit / LURP line passes through the site in a very irregular path. The Proposed Development is more sympathetic to site topography and vegetation than these existing zone lines.

Our client proposes to protect existing vegetation, waterways and a pond with covenants and/or consent notices to restrict development in these areas thus providing amenity to neighbouring dwellings.

We estimate that 40-50 mixed residential dwellings could be developed on this site, and we consider that this number of dwellings is required to fund the necessary infrastructure (sewer, roading and stormwater). Without a greater number of allotments than what is currently zoned for development, this development would likely become unviable.

Services
A Low Pressure Sewer main could be extended along Cashmere Rd to the gravity outfall.

Stormwater: On-site stormwater treatment and retention could be achieved on the lower parts of the site. The adjacent property to the west is being developed by Council for large scale stormwater treatment and retention.

Water Supply: An existing water supply main is laid along Cashmere Rd and could be used to supply this site.

Power reticulation can be extended from the existing overhead HV along Cashmere Rd. Phone and fibre broadband reticulation could be extended from the existing network along Cashmere Rd.

Constraints
The proposed development area is similar to the area that is already zoned RNN. A detailed geotechnical assessment is not available, but the landform and levels are similar to the currently RNN zoned area. Neighbouring properties typically border on Technical Classification 2 and 3. Development of this type of land is achievable with appropriate engineering solutions.

Detailed requirements regarding floor levels were not available at short notice. While some of the proposed development area is at a lower level than the existing RNN area, filling could be used to raise the site to meet required minimum floor levels. This filling might reduce flood storage volumes and require compensatory storage. It is possible that this storage might be provided on the land that our client owns to the west. These requirements and appropriate engineering solutions could be worked out as the proposed development progresses through the planning phase.

Yours faithfully



Michael Martin | Registered Professional Surveyor
Fox & Associates Ltd
\\FOXDC01\Projects\4386F Frei - Cashmere Road\Correspondence\4386F.01 20181130 Urban Limit.docx

Appendix C

Letter from Environment Canterbury - verifying 564 Cashmere Road as non Hail

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

PO Box 345, Christchurch
General enquiries: 03 365 3828
Fax: 03 365 3194
Email: ecinfo@ecan.govt.nz
Customer services: 03 353 9007
or: 0800 EC INFO (0800 324 636)
Website: www.ecan.govt.nz

25 September 2018

Frei Ernst & Frei Renate Kathrine
564 CASHMERE ROAD
CHRISTCHURCH 8025

Dear Mr. and Mrs. Frei

REGISTRATION OF PROPERTY ON LISTED LAND USE REGISTER

SITE REFERENCE:
Site address: 564 Cashmere Road, Cashmere-Halswell
Register number: 26982

LAND REFERENCE:
Legal Description(s): Lot 1 DP 82258

I am writing to advise you Environment Canterbury have changed the category under which the property detailed above is registered on our Listed Land Use Register (LLUR). I understand that you are the owner of this property. You are invited to examine the information held by Environment Canterbury and to comment on it.

Your site was registered under category Partially Investigated. The site's classification is changed to category **Verified non-HAIL.** The change is based on information provided to Environment Canterbury which indicates that the previous classification was no longer appropriate. This information is provided by you is that the farm has operated from 1983 organically (registered with BioGrow 064) from that time and ceased market gardening in the early 2000's. No copper-based products or BioGrow restricted pesticides have been used by the operator of the property.

The Verified non-HAIL category is defined as:

… the site has been entered on the register based on information that subsequently was found to be incorrect. Information held at the time of this listing showed that this site had never been associated with any of the specific activities or industries on the Hazardous Activities and Industries List.

While the site category has changed, it will remain on the LLUR in order to provide an audit trail of information that led to the decision to classify the site as Verified non-HAIL. The information on the LLUR regarding this property is made available to outside parties.

Our Ref: IN7C/3739 - CN 216966
Contact: Conor Parker (Conor.Parker@ecan.govt.nz)

If you have any questions or concerns about the site classification, or if you wish to view the information held about your site, please do not hesitate to contact me.

Yours faithfully



Conor Parker
CONTAMINATED LAND OFFICER II

Our Ref: IN7C/3739 - CN 216966
Contact: Conor Parker (Conor.Parker@ecan.govt.nz)

Property Statement from the Listed Land Use Register

Visit www.ecan.govt.nz/HAIL for more information about land uses.

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324

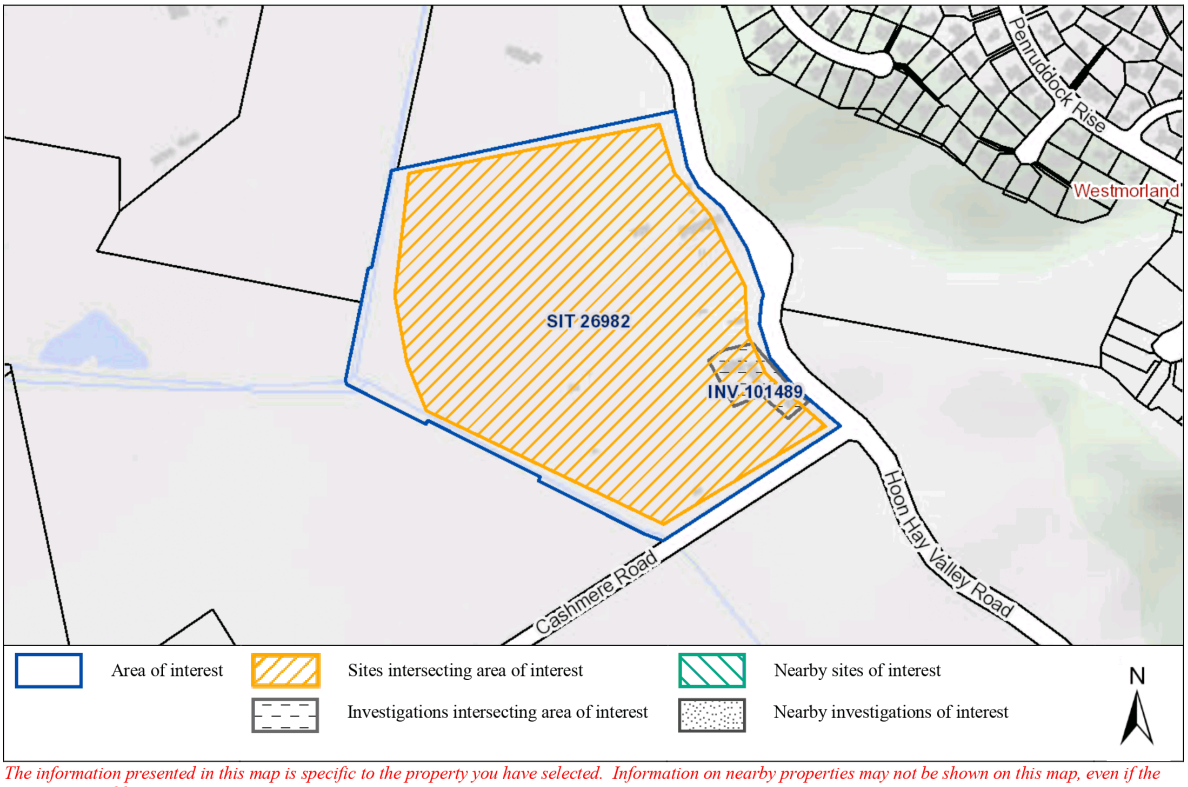
636

PO Box 345
Christchurch 8140

P. 03 365 3828
F. 03 365 3194
E. ecinfo@ecan.govt.nz

www.ecan.govt.nz

Date:	25 September 2018
Land Parcels:	Lot 1 DP 82258 Valuation No(s): 2356245700



The information presented in this map is specific to the property you have selected. Information on nearby properties may not be shown on this map, even if the property is visible.

Summary of sites:

Site ID	Site Name	Location	HAIL Activity(s)	Category
26982	Hoon Hay Valley Organic Farm	564 Cashmere Road, Cashmere-Halswell		Verified Non-HAIL

Please note that the above table represents a summary of sites and HAILs intersecting the area of interest only.

Information held about the sites on the Listed Land Use Register

Site 26982: Hoon Hay Valley Organic Farm (Intersects interest area.)

Site Address:	564 Cashmere Road, Cashmere-Halswell
Legal Description(s):	Lot 1 DP 82258
Site Category:	Verified Non-HAIL
Definition:	Site entered on register based on information found to be incorrect.

Land Uses (from

Period From	Period To	HAIL land use

HAIL):

Notes:

9 Oct 2013	Area defined from: 1984-2004 ECan Aerial Photographs Note: Market garden plots were noted in aerial photographs reviewed.
25 Sep 2018	Hoon Hay Valley Organic Farms at 564 Cashmere Road, Christchurch have was identified using aerial photographs as a horticultural area from the early 1980's to early 2000's. The landowner has stated that the farm has operated from 1983 organically (registered with BioGrow) from that time and ceased market gardening in the early 2000's. No copper based products or BioGrow restricted pesticides have been used by the operator of the property. The activity of 'persistent pesticide storage or use' has not occurred and this record is kept to prevent re-registration in the future.

Investigations:

13 Aug 2015 **INV 101489: Detailed Site Investigation, 564 Cashmere Road, Westmorland, Christchurch** (Detailed Site Investigation)
Coffey Environments

Summary of investigation(s):
A basic soil sampling investigation was undertaken to assess soil at the site, prior to works being undertaken to repair the existing residential dwellings at the site. The site is on Environment Canterbury's Listed Land-Use Register because historical aerial photographs indicate that horticulture was carried out at the site from the late 1980s until the early 2000s. The site investigation report states that the geotechnical investigation found "fill" material near the existing dwellings. Aside from traces of charcoal and bricks in a small number of boreholes the fill appeared to consist of gravels and silts.

10 soil samples were collected from around the existing buildings at varying depths from 0.1-0.2m to 1.0-1.2m. Three samples were collected from natural soils and the remainder were from the material described as "fill". The soil samples were analysed for a suite of eight metals and organochlorine pesticides. Some samples exceeded recorded background concentrations for the area, however none exceeded the relevant guidelines for residential land-use.

Information held about other investigations on the Listed Land Use Register

There are no other investigations associated with the area of interest.

For further information from Environment Canterbury, contact Customer Services and refer to communication number COM216966.

Disclaimer: ***The enclosed information is derived from Environment Canterbury's Listed Land Use Register and is made available to you under the Local Government Official Information and Meetings Act 1987 and Environment Canterbury's Contaminated Land Information Management Strategy (ECan 2009).***

The information contained in this report reflects the current records held by Environment Canterbury regarding the activities undertaken on the site, its possible contamination and based on that information, the categorisation of the site. Environment Canterbury has not verified the accuracy or completeness of this information. It is released only as a copy of Environment Canterbury's records and is not intended to provide a full, complete or totally accurate assessment of the site. It is provided on the basis that Environment Canterbury makes no warranty or representation regarding the reliability, accuracy or completeness of the information provided or the level of contamination (if any) at the relevant site or that the site is suitable or otherwise for any particular purpose. Environment Canterbury accepts no responsibility for any loss, cost, damage or expense any person may incur as a result of the use, reference to or reliance on the information contained in this report.

Any person receiving and using this information is bound by the provisions of the Privacy Act 1993.

Appendix D

LIDAR map

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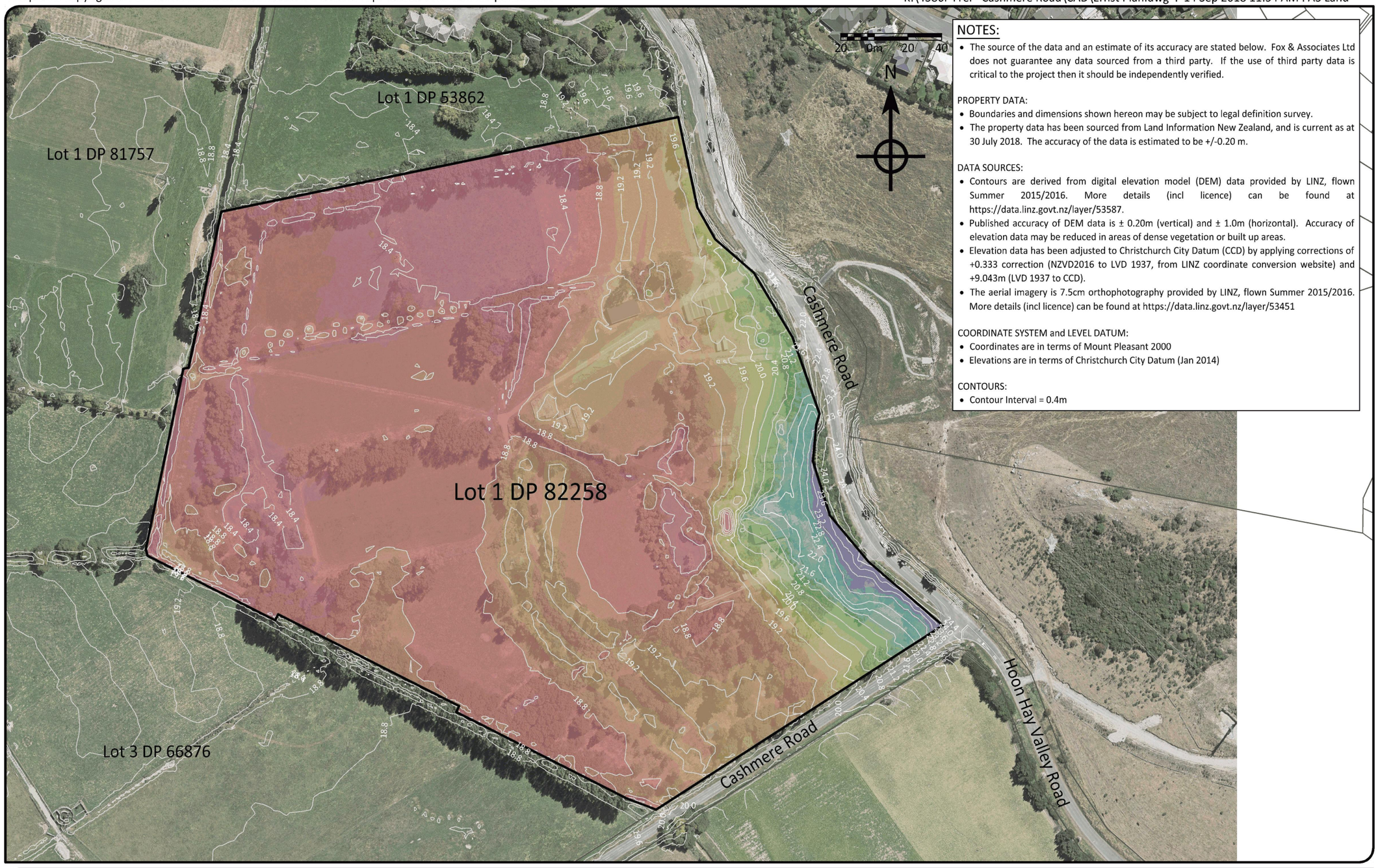
K:\4386F Frei - Cashmere Road\CAD\Ernst Plan.dwg : 14 Sep 2018 11:34 AM : A3 Land



NOTES:

- The source of the data and an estimate of its accuracy are stated below. Fox & Associates Ltd does not guarantee any data sourced from a third party. If the use of third party data is critical to the project then it should be independently verified.

PROPERTY DATA:

- Boundaries and dimensions shown hereon may be subject to legal definition survey.
- The property data has been sourced from Land Information New Zealand, and is current as at 30 July 2018. The accuracy of the data is estimated to be +/-0.20 m.

DATA SOURCES:

- Contours are derived from digital elevation model (DEM) data provided by LINZ, flown Summer 2015/2016. More details (incl licence) can be found at https://data.linz.govt.nz/layer/53587.
- Published accuracy of DEM data is ± 0.20m (vertical) and ± 1.0m (horizontal). Accuracy of elevation data may be reduced in areas of dense vegetation or built up areas.
- Elevation data has been adjusted to Christchurch City Datum (CCD) by applying corrections of +0.333 correction (NZVD2016 to LVD 1937, from LINZ coordinate conversion website) and +9.043m (LVD 1937 to CCD).
- The aerial imagery is 7.5cm orthophotography provided by LINZ, flown Summer 2015/2016. More details (incl licence) can be found at https://data.linz.govt.nz/layer/53451

COORDINATE SYSTEM and LEVEL DATUM:

- Coordinates are in terms of Mount Pleasant 2000
- Elevations are in terms of Christchurch City Datum (Jan 2014)

CONTOURS:

- Contour Interval = 0.4m

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0800 FOX SURVEY
P.O.Box 895
CHRISTCHURCH

Ground Surface Data

564 Cashmere Road - Lot 1 DP 82258

No.	Revision	Appr.	Date
D			
C			
B			
A			

Scale	1:2000
Designed	
Drawn	PRD
Date	14/09/2018
Job No.	4386F
Rev.	

Submission No: 015	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Warren
Last name	Lewis
Email	[redacted]
Street name and number	[redacted]
Suburb	
Town/City	Christchurch
Postcode	[redacted]
I am completing this submission	On behalf of a group or organisation - Cashmere Park Trust
Hearings	
Do you wish to speak to the hearings panel?	I wish to speak at the hearings
Phone number	[redacted]
Preferred location to be heard	Christchurch City
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree.
Comment	Most people want to have a section in Christchurch. There is only a limited demand for Group Housing in Christchurch. If people can't get a house and section in Christchurch they will be forced out to Rangiora or Rolleston. Restricting the new supply of sections in Christchurch will push the price of sections up which will push the prices of sections in Christchurch up. Hence this policy will simply make houses more unaffordable in Christchurch.
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Neither agree nor disagree
Comment	This approach can only go as far as meeting the limited demand for more intensive development. With time, future generations may increase the demand for intensive development. Also as the population ages this will increase the demand for apartments. However this change will not be as quick as the Great Christchurch Partnership foresees.
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	Housing for ex inmates of our Prisons that removes their dependency on gangs for support. Such housing will need residential supervisors.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Do not agree
Comment	Many offices have migrated to suburban locations such as Addington and Roydvale. These offices have attracted staff that live nearby and staff have left who live far from such offices or

	service industries. This form of commercial development should not be forgotten, let alone disadvantaged by the planning framework, otherwise more transport demand will result.
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Do not agree
Comment	Much of this land has been in the hands of a few owners who restrict development to keep the price up. If these owners thought that the area of industrial land could double quickly, they would sell bare land, and a true industrial land market would result.
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Somewhat disagree
Comment	There are many factors not accounted for such as the increasing time delays of getting land rezoned, getting subdivision approval, getting resource consents, getting building consents, etc. This proposal is another planning process causing development delays, shortages of land and hence raising the price of land, development, and building including housing. The partners have put too much reliance on the past and too little on the future.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat disagree
Comment	Little account seems to be given to the future with autonomous vehicles, increase working from home, more variable working hours, increasing demand for more flexible working conditions, etc.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Do not agree
Comment	Limiting infrastructure by rigid planning is just another way to restrict the supply of land to develop. Local Authorities should respond to demand even if it means having special rating areas.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	Page 31 refers to Map A. However there is no Map A provided. There needs to be more flexibility in allowing new Greenfield areas especially where most of the infrastructure is already close to the boundary of these areas. The areas of Greenfield development proposed for Christchurch City is inadequate to satisfy the demand for house and section living. Hence housing will continue to get more unaffordable until it brings about an economic crisis such as happened in Ireland. Auckland has advanced further down the wrong track. Christchurch needs to take heed of that and start removing restrictions and rules that artificially reduce the supply of land for Urban use. If not the Government may simply open up the flood gates and allow huge areas be available for Urban use.
Attachments **Greater ChCh Settlement Pattern Update - Submission 26.11.18.pdf** **181120 RE-ZONING PROPOSAL SPARKS ROAD.pdf**	

I am a Trustee for a Trust that owns land at 36 Leistrella Road, 126 Sparks Road, and 17 Northaw Street. These three 4 hectare properties are within an area called the Henderson Basin which also shows in the Draft for Our Space 2018-2048-Greater Christchurch Settlement Pattern Update as a Projected Infrastructure Boundary on Figure 16.

The east and north edges of the Trust's land is at the 50 year flood level and the land slopes from there into the basin on a very slight slope of 10cm per 100m, i.e. the land slope is 1 in 1000. This eastern 100m of this land is wasted as a retention pond and 4 hectare lifestyle blocks, as the storage volume for a 50 year storm in this area is only 1,800 cubic metres compared to millions in the basin, i.e. the average depth is only 5cm over an area of 3.6 hectares. This 100m strip of eastern land would be far better converted to residential land by filling with material excavated from the western portions of the Trust's land using compensatory storage techniques. This technique is used in all new subdivisions now to create detention ponds to compensate for the extra runoff from the new urban land. By the Trust restricting the development to the eastern 100mm of the Trust's land there is also the potential to increase the amount of storage in the Henderson Basin. In addition, by building up the Trust's land to above the 200 year flood level, the Trust's land can act as a bund to protect the existing urban areas to the east of the Trust's land. Please see the attached plan.

The reasons why the area shown to be developed in the attached plan should be included in the Urban Area of Christchurch are as follows:

- The area sought to be included in the urban limits meets all the objectives of the City Plan, and in fact meets most of the priorities, and objectives better than other more outlying areas. It almost appears that the objectives and policies had been written with this land in mind.

- The Trust's land is only 6km to Cathedral Square in a straight line, whereas Rolleston is 22km, Kaiapoi is 16km, and Rangiora is 25km from Cathedral Square. The land is closer to the City Centre than any other Greenfield site.

- The unique advantages of this area for urban development are:

    i) It provides areas of stormwater cleansing by wetlands and swales for not just this area, but for all areas upstream. It is for this reason that the Christchurch City Council encouraged the Trust's owners to initiate a zone change to the City Plan before the Canterbury Earthquakes.

(ii) It provides for landscaping wetland areas.

(iii) It naturalizes concrete and timber sided drains that have reached the end of their life and have started to cave in.

(iv) It provides large active and passive reserve areas.

(v) It encourages public access and provides fresh water recreation opportunities especially for families and children.

(vi) It can form part of the Christchurch cycle ways/walkways network.

(vii) It helps provide part of a very attractive large naturalized part of Christchurch where housing will have direct or almost direct access.

(viii) It is not only on the edge of existing residential development, it is becoming surrounded on all sides by existing housing.

(ix) The land already has frontage to three roads which have their infrastructure terminated to allow for extension into the Trust's land.

(x) It has already had the Engineering carried out for a Plan Change including Hydraulic Modelling, Geotechnical Testing, Traffic Reports etc.

(xii) The storage in the Henderson Basin can be increased thereby reducing the flood risks downstream.

(xiii) The filled urban land will act as a bund to protect existing urban land to the east from flooding.

- Due to the proximity to the City Centre, and Commercial and Industrial areas, the travel distances for people living on the Trust's land would be much less than some of Christchurch, most of the other proposed Greenfield sites, and several times closer than Rolleston, Rangiora and Kaiapoi. The Trust's land is so close to the City Centre that people can walk to the City Centre in 1 hour and bike there easily within 20 minutes along the new cycleways. Hence developing the Trust's land for residential use is much more sustainable than developing land further out.

- Much of the Trust's land is already serviced, whereas most other Greenfield sites are not, i.e.

(i) The roads are in place to serve the area and are less congested than roads elsewhere in the city.

(ii) The area is well served by Public Transport with the Orbiter and other bus routes on Sparks Road, Hoon Hay Road, and Cashmere Road.

(iii) The Sewage Treatment Plant for Christchurch City is a much cheaper plant to run than the smaller plants of the outlying towns of Rolleston, Rangiora and Kaiapoi.

(iv) There are sewer mains in each of the 3 streets that serve this land. Some of these are deep enough to serve much of the site by Gravity alone. The sewer mains and pumps downstream of this site were damaged in places and had to be upgraded and repaired. However, these were meant to be repaired by 2014.

(v) Water supplies are in each street that serves this area.

(vi) The SW Christchurch Urban Area is well served by stormwater drains, creeks and rivers. In fact the Henderson basin is proposed to remain as an enhanced detention basin to process stormwater and to detain stormwater so as to keep flood flows to a minimum downstream.

The majority of the Henderson Basin will in time be enhanced by naturalizing waterways, deepening portions to increase detention volumes, and be landscaped to form a large regional park that has unique features such as springs and aquatic life. Such development is shown in outline form on the comprehensive development plans prepared as part of the City Council's SW Christchurch Development Plan.

(vii) The area is well served by power with two major electrical substations on two of the boundaries of the area.

(viii) The telecommunication network can be simply extended into the area as the networks go all around the area at present.

(ix) The area is already well served by reserves. In addition the South Henderson Basin area is already being developed with a large area becoming reserves, wetlands, etc. Extending this to include the land to the east of Henderson's Road is also possible. It is intended that the Trust's land not proposed to be urban land would be gifted to the City Council to become part of the Henderson Basin reserve in lieu of infrastructure contributions.

(x) There are 4 primary schools, 1 intermediate school, and two high schools in close proximity.

(xi) There are two large churches within walking distance.

(xii) The area is well served by local shops, service stations, medical centres, large shopping malls to the north, west and east, and pools at Halswell and at Pioneer Stadium. This land already has all the required community and social services already in place.

- Efficient and close public transport is already provided for this area and already provides better access than all the other Greenfield Priority Areas.

  This land is so close to the city centre that not only is bike travel viable but so is walking. There is already an excellent bus service to this area.

  Car usage will be less for residents of this area than any other Greenfield site due to its proximity to the City Centre and the Commercial and Industrial areas of Christchurch, which are mostly to the south of the city. It is also handy to Canterbury University, Lincoln College, and Christchurch Polytechnic.

- The development of the Trust's land is within the concepts set out in the Christchurch City Council South West Christchurch Area Plan, and a part of the Trust's land was included as one of the first areas to be developed.
  This shows how Urban development can proceed together with the creation of a large reserve, naturalized waterways, walkways, cycle ways, lowland forest and a large reserve for active and passive recreation. This area would attract native wildlife and could be developed to be similar to Riccarton Bush, only much larger.

- The present Trust's land use is probably temporary, as only horticulture and residential use are economically viable due to the high value and high rates payable on such land. Even horticulture has problems with Residential so close, i.e. sprays, noise, dust, etc. Hence the land either gets developed as proposed or remains as 4ha lifestyle blocks. 4ha lifestyle blocks this close to the city obviously are an anomaly that the Christchurch Urban Development Strategy should correct.

The best use for the Trust's land is obviously residential to the East, and a waterway and wetland reserve as shown on the attached plan, with the site providing its own stormwater disposal, as well as providing flood routing of water inflows from upstream as in the past. To leave this land rural while developing rural land twice to five times further out would be to go against the Objective of Urban Consolidation.

Removal of the existing use of the land, grazing cattle (the only viable livestock allowed) from this land removes a potential source of pollution of the streams that surround the site even with all waterways fenced off.

- **Comprehensive Development Plan**
  The outline development plan, Attachment 2, shows the vision by the Trust for the area, and forms a discussion document for all the stakeholders. The best time to develop the final plan would be after the New Christchurch District Plan includes this land in the New Neighbourhood Residential Area zone.

- **Timing**
  Of all the areas of Greenfield Development, the eastern part of the Trust's land should be one of the first to be developed for the following reasons:

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LEWIS & BARROW LTD
Consulting Civil And Structural Engineers

Attachment 2



Page 234

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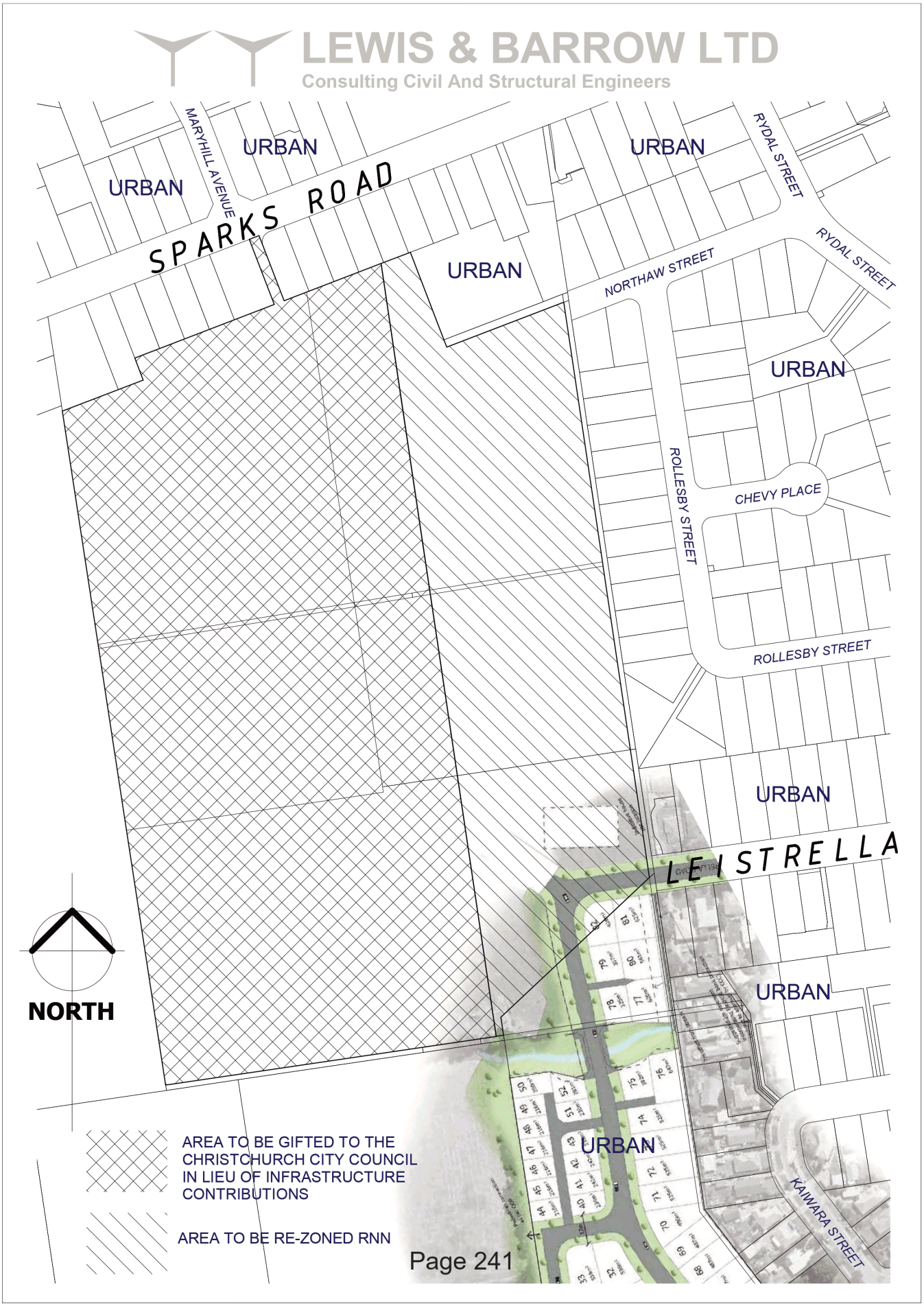
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ROLLESBY STREET
ROLLESBY STREET
CHEVY PLACE
LEISTRELLA
KAIWARA STREET
NORTH
AREA TO BE GIFTED TO THE CHRISTCHURCH CITY COUNCIL IN LIEU OF INFRASTRUCTURE CONTRIBUTIONS
AREA TO BE RE-ZONED RNN
Page 241

Submission No: 052

Submission Form

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

To:	Greater Christchurch Partnership
SUBMITTER:	Woolworths New Zealand Limited ("Woolworths")
Contact:	Matthew Grainger
Address for Service:	Woolworths New Zealand Limited C/- Planz Consultants Limited PO Box 1845 Christchurch 8140 Attn: Dean Chrystal M +64 21 668847 E dean@planzconsultants.co.nz

Hearing

Woolworths wishes to be heard in support of this submission and its preferred location is Christchurch.

Overview

Woolworths generally supports the direction of the Our Space 2018-2048 Greater Christchurch Settlement Pattern Update (Update). There are however some matters around the urban boundary and the current allocation of commercial land which Woolworths considers needs to be reviewed as part of this process and the forthcoming review of the Canterbury Regional Policy Statement.

Woolworths in Greater Christchurch

Within the Greater Christchurch area Woolworths operates and/or supplies 15 Countdown supermarkets, 5 Fresh Choice supermarkets and 5 SuperValue supermarkets. It also has a distribution centre based in Hornby. Woolworths also currently have consents lodged for a further Countdown supermarket in the Halswell Key Activity Centre and a Fresh Choice in the Prebbleton commercial area.

Submission Points

Woolworths wishes to make the following submission points:

1. *Expansion of Urban Limits Boundary at Prestons*

   Woolworths owns a property of the north-east corner of the Marshlands Road/Prestons Road intersection, known as 365 and 379 Prestons Road which is in two titles. Land 1 Limited owns the adjoining strip of land at 448 Marshland Road. The full extent of this land, which totals 4.94ha, is shown in the map below.



   Woolworths (or Progressive Enterprises Limited as they were then known) has a long background associated with this site dating back prior to the Christchurch earthquakes and Proposed Change 1 (PC1) to the Canterbury Regional Policy Statement (CRPS). During that process and as a result of the earthquakes the then Earthquake Recovery Minister exercised his powers and intervened in the PC1 proceedings revoking it and replacing it with a new Chapter 12A to the CRPS. As a result Woolworths lost all rights to appeal its case to the Environment Court to increase the urban limits to cover the above site through no fault of its own. The practical effect of this was that Woolworths were procedurally prevented from seeking to have its land included within the urban limits.

   This present process therefore represent the first opportunity since 2012 that Woolworths have had to seek to have this land included in within the Greater Christchurch urban limits.

Woolworths considers the inclusion of the land shown above represents a natural expansion of the urban limits boundary given the strategic nature of the intersection, its prominence as an entrance to the Prestons subdivision and the fact that it is bordered on two sides by the present urban limits boundary.

Woolworths considers that the land offers opportunities for both commercial and residential development and that its development would provide for an enhanced urban form in terms of this key gateway to the Prestons subdivision.

2. *Review of identified commercial areas*

Woolworths considers that as part of the work towards a comprehensive review of the CRPS scheduled for 2022 consideration needs to be given to:

i. Exactly where the new projected commercial growth will occur;
ii. Whether existing identified but undeveloped commercial land remains appropriately zoned; and
iii. Whether the hierarchy of centres currently identified remains appropriate.

In the context of the above, Woolworths notes that the commercial core area at the Northwood/Belfast Key Activity Centre remains undeveloped after a number of years being zoned and that the recent commentary associated with the site's sale referred to "*reversion to residential and/or retirement village use*[1]" as a possible future development outcome. If that were to occur then the sites status as a Key Activity Centre would be redundant.

Woolworths also notes that that part of the emerging greenfield commercial centre referred to as Groynes Park[2] on the eastern side of Groynes Drive has to a large degree already been subdivided and built out for residential development as shown on the aerial photograph below. Woolworths considers it would be appropriate to re-allocate this loss of commercial land to the nearby North West Belfast Neighbourhood Centre.

[1] CBRE Article - Northwood Supa Centa for sale as Christchurch population and retail sales top pre-2011 levels, 15 September
[2] Appendix 12 – Feasibility Assessments of the Business Development Capacity Assessment associated with the Update



Dated: 30th November 2018

Dean Chrystal

Consultant Planner (Director)

Planz Consultants Limited

Submission No: 053

Submission Form

Greater Christchurch Partnership
Te Tira Tū Tahi
One Group, Standing Together

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

To:	Greater Christchurch Partnership
Submitter:	Cockburn Family Trust
Contact:	Simon Johnston, Meares Williams
Address for Service:	Cockburn Family Trust C/- Planz Consultants Limited PO Box 1845 Christchurch 8140 Attn: Dean Chrystal M +64 21 668847 E dean@planzconsultants.co.nz

Hearing

The Cockburn Family Trust wishes to be heard in support of this submission and its preferred location is Christchurch.

Background

The Cockburn Family Trust (the Trust) owns two rural blocks of land inside the Projected Infrastructure Boundary (PIB) in the Canterbury Regional Policy Statement (CRPS) on the north side of State Highway 1 at Rolleston. Both blocks are bounded to the south and west by the Izone Southern Business Park (Izone).

The first block at 151 Hoskyns Road (Lot 2, DP 501038, being 32.1ha) is identified in the CRPS – Appendix 1, as a Greenfield Priority – Business and has been zoned B2A under the Selwyn District Plan. This block contains two dwelling houses, implement sheds, woolshed and sheep yards and is presently for sale and under contract.

The second adjoining block at 171 Hoskyns Road (Lot 1, DP 501038, being 49.2ha) is also identified as being inside the PIB but has not been included as a Greenfield Priority – Business. This block contains no buildings and is traversed by high tension power across its north-western corner. A potential road connection to this block has been provided from the Izone off Detroit Drive.

Submission

The Trust seeks that the 49.2ha of land at 171 Hoskyns Road being Lot 1, DP 501038, be included in the Our Space 2018-2048 Greater Christchurch Settlement Pattern Update (Update) as a Green Field Priority Area – Business or Future Development Area – Business.

The Trust considers that the fact that the site is already included inside the PIB and that it is bordered on two sides by industrially zoned land warrants consideration of this land for industrial purposes. The Trust understands that industrial land development at Rolleston is continuing to grow and intends to provide evidence at the hearing stage.

Dated: 30th November 2018



Dean Chrystal
Consultant Planner (Director)
Planz Consultants Limited

Submission No: 040

LOCALITY

SUBMISSION TO OUR SPACE 2018-2048

GREATER CHRISTCHURCH SETTLEMENT PATTERN UPDATE

SUBMITTER DETAILS

Name: Ben and Sally Tothill

Address:

Email:

This submission has been prepared for Ben and Sally Tothill by Locality Ltd.

Do you wish to speak to the hearings panel? Yes

Preferred location: Christchurch City

Contact Number: Ben Tothill Locality Ltd (Nicola Rykers)

B and S Tothill are the owners of a block of land on the corner of Marshs and Shands Road in Selwyn District.

The property has been significantly affected and dissected by Stage 2 of the Southern Motorway currently under construction. Please see the attached plans showing the Southern Motorway and associated re-alignment of Marshs Road traversing the property. Post construction of the motorway B and S Tothill will retain ownership of approximately 6.6ha of land.

Of this total land area, 3.56ha becomes an island sitting between the Heavy Industrial Zone in Christchurch City and the motorway designation and 1.1ha is entirely surrounded by motorway designation.

B and S Tothill are generally supportive of the strategic planning approach described in Our Space 2018-2048 Greater Christchurch Settlement Pattern Update and recognise the need for integrated planning of land use and infrastructure. They are concerned however that the concept of integration in the Settlement Pattern Update is focused on the relationship between infrastructure and future urban zoning, but fails to consider of how major infrastructure extensions, such as the Southern Motorway, integrates with the existing zoning of adjoining land. This is of particular concern where infrastructure expansion creates isolated or remnant land parcels that have limited potential uses under their current zoning.

The land concerned in this submission is zoned Rural Inner Plains in the Selwyn District Plan. The submitters consider that this zoning is no longer appropriate following construction of the Southern Motorway, as the land concerned is physically and permanently separated from the Canterbury

Plains and is instead effectively a small island of rural land surrounded by Heavy Industrial zoned land in Christchurch City and significant roading infrastructure. Due to its location it has no rural amenity and is of limited use for productive rural activities.

In this context B and S Tothill are considering a range of possible economic uses for the longer term use of the land, which may better suit its location hard against the heavy industrial edge of the City, its confinement by the Southern Motorway and small land area available. Potential options include yard based industrial uses or activities which serve primary industries.

This scenario has raised a number of planning issues for B and S Tothill which they consider are relevant to the Settlement Pattern Update and future provisions which may be contained in the Canterbury Regional Policy Statement. These include:

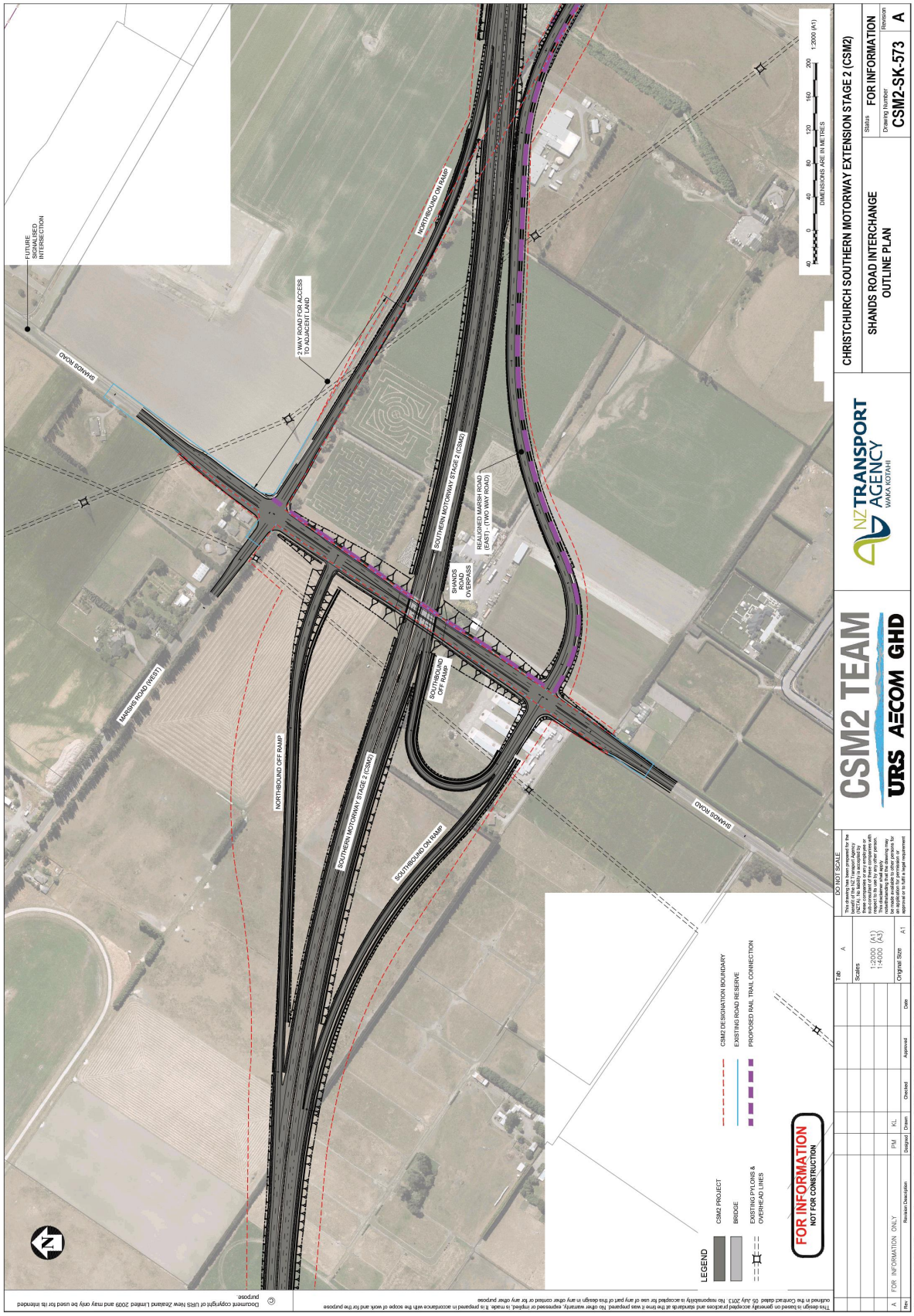
1 The objectives and policies of the Canterbury Regional Policy Statement (CRPS), and in particular the provisions of Chapter 6 of the CRPS, promote the integration of land use and infrastructure. The integration described is at a strategic level and focuses on the location and scale of future residential areas, commercial and industrial zones in relation to services and transport links. There are no provisions in the objectives and policies which specifically require consideration of the effect of major infrastructure expansions on the existing, adjoining land and if that land is being constrained or altered in terms of its suitability for the activities for which it Is zoned. For example, **Policy 6.2.2 Urban Form and Settlement Pattern** requires consideration of greenfield priority areas on the periphery of Christchurch and the self-sufficient growth of towns such as Rangiora, but there is no requirement to consider the pattern of land use at the existing rural/urban interface where land use changes have been brought about by major transport infrastructure up-grades. **Policy 6.2.4 Integration of transport infrastructure and land use** is limited to "integration with the priority areas and new settlement patterns". It does not address integration in respect of the existing urban form and existing land use. **Policy 6.2.6 Business land development** does include "a range of business activities are provided for in appropriate locations". It is possible that this could be interpreted to apply to remnant parcels of land following construction of the motorway.

2. The appropriate RMA process for consideration of zoning is at the time of a district plan review. If the Settlement Pattern Update does not include the "left-over" pockets of rural land owned by B and S Tothill there is a risk that the land is not able to be rezoned as it will not be included on Map A of the CRPS. Similarly, it is possible that a future resource consent for an industrial related activity would similarly be rejected on the basis of fundamental inconsistency with the rural objectives and policies of the District Plan and the settlement objectives and policies of the CRPS. This is a risk that could be removed or minimised through a number of possible actions. These include:

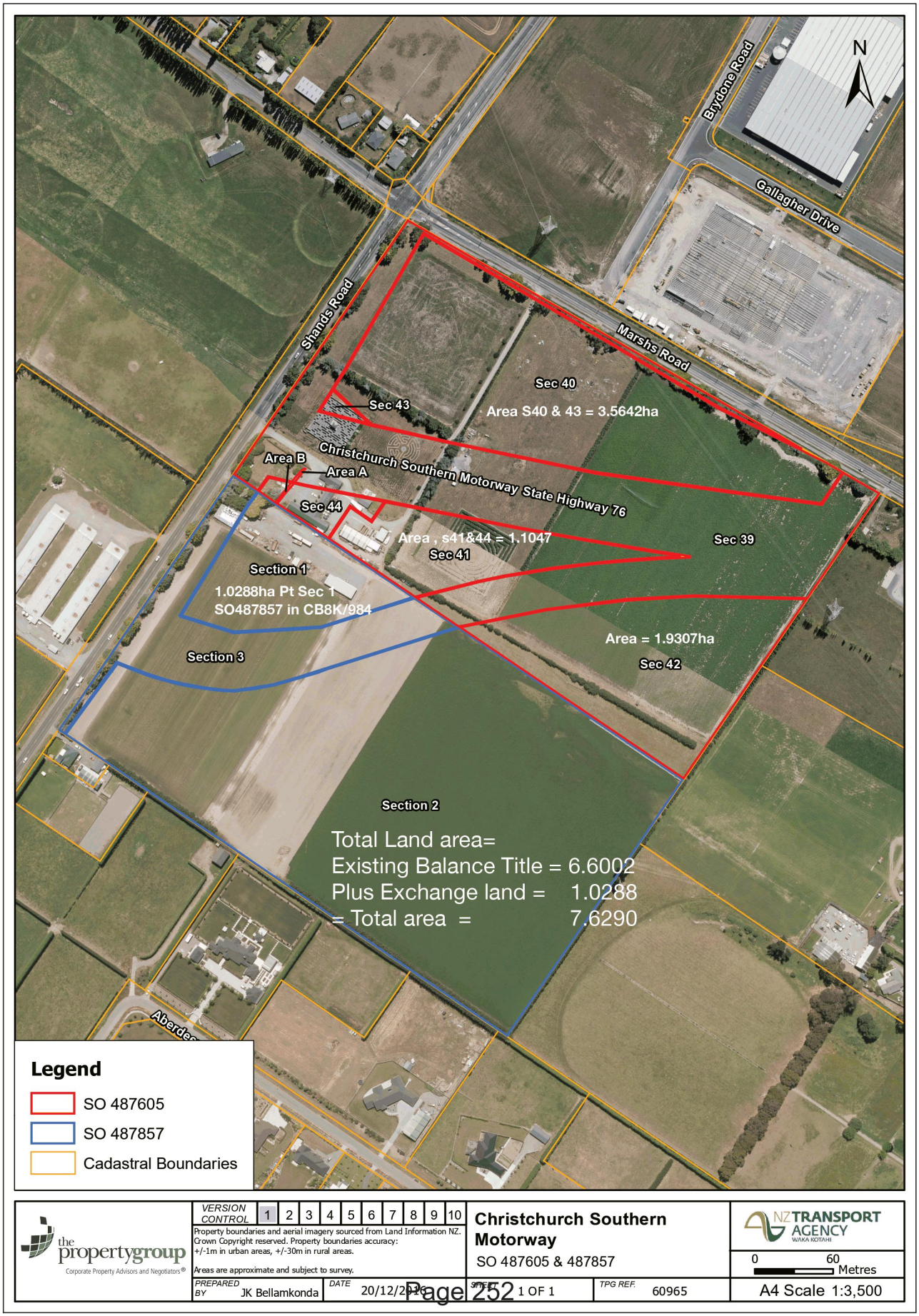
    - Including the land parcels concerned as part of the future growth areas for industrial activities (the area being so small as to be inconsequential in the overall calculation of business land required); and/or

    - Addition of a sub-clause to Policy 6.2.4 of the CRPS which recognises that the integration of transport infrastructure and land use should include consideration of existing, adjoining land uses and scenarios where major transport infrastructure up-grades create remnant or isolated pockets of land; and/or

- Addition of a sub-clause to Policy 6.3.1 (4) of the CRPS. The policy currently seeks "to 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 policy could be expanded to expressly provide for new urban activities new urban activities on land where major infrastructure up-grading has isolated land parcels altering the range of suitable land uses for which the land is zoned.



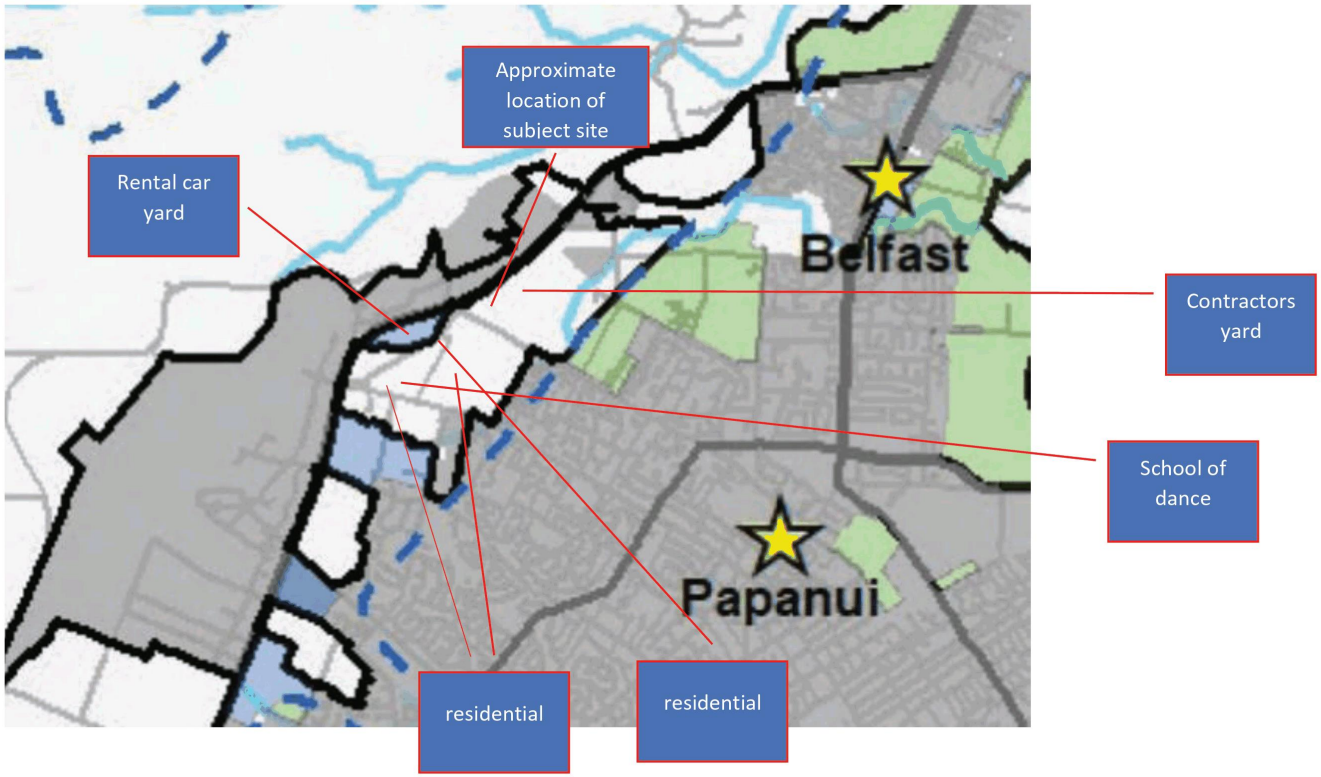
Attachment A Item 4


N
Brydone Road
Gallagher Drive
Shands Road
Marshs Road
Sec 40
Sec 43
Area S40 & 43 = 3.5642ha
Christchurch Southern Motorway State Highway 76
Area B
Area A
Sec 44
Area , s41&44 = 1.1047
Sec 41
Sec 39
Section 1
1.0288ha Pt Sec 1
SO487857 in CB8K/984
Section 3
Area = 1.9307ha
Sec 42
Section 2
Total Land area=
Existing Balance Title = 6.6002
Plus Exchange land = 1.0288
= Total area = 7.6290
Legend
SO 487605
SO 487857
Cadastral Boundaries
the propertygroup
Corporate Property Advisors and Negotiators®
VERSION CONTROL 1 2 3 4 5 6 7 8 9 10
Property boundaries and aerial imagery sourced from Land Information NZ. Crown Copyright reserved. Property boundaries accuracy: +/-1m in urban areas, +/-30m in rural areas.
Areas are approximate and subject to survey.
PREPARED BY JK Bellamkonda
DATE 20/12/2018
Christchurch Southern Motorway
SO 487605 & 487857
SHEET 1 OF 1
TPG REF. 60965
NZ TRANSPORT AGENCY WAKA KOTAHI
0 60 Metres
A4 Scale 1:3,500

Submission No: 035		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Hamish	
Last name	Anderson	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Christchurch	
Postcode	[redacted]	
I am completing this submission	On behalf of a group or organisation Role: Planning agent for RJ Civil	RJ Civil Construction, 510 Sawyers Arms Road No of people: 2
Hearings		
Do you wish to speak to the hearings panel?	I wish to speak at the hearings	
Phone number	[redacted]	
Preferred location to be heard	Christchurch City	
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat agree	
Comment	Agree with the sentiment but feel that, particularly near our site, there is potential for Rural Urban Fringe land to be developed. Our client's site is located at 510 Sawyers Arms Road and is bordered to the north by Johns Road with commercial immediately on the opposite side of Johns Road and a general push to the north of residential. This is not reflected in the Figure 16 identifications of the land (map attached)	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	
Comment		
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment		
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Somewhat agree	
Comment	Arguabily our clients side of Johns Road should also be commercial or industrial also. Currently the south and east side of this section of Johns Road is relatively undeveloped but given the proximity to the airport and the great transport links provided by both Johns Road and Sawyers Arms Road, pressures to provide for more development. This is the case with the recently approved rental car yard and the reason why business, such as our clients wish to located here. The clients are contractors and it makes sense for them to be located either near their clients (NZTA, Local Authorities and ECan) or on routes that can enable easy access to those clients and	

	their sites. A contractors yard should not be located within a fully developed area as truck movement can clog up the local road network and lead to noise effects if driving through residential.
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Somewhat agree
Comment	We agree in part. Our client's site is at 510 Sawyers Arms Road and appears to be in an area not identified for infrastructure on Figure 16 (we have attached a blown up version with our clients site and other none rural uses also identified. Our client's have an existing consent for use of the site as a contractors yard and are seeking to make that permanent rather than having an existing lapse date in 2020. In our opinion, this is an appropriate land use and reflects that occurring on other sites on the south side of Johns Road that are also located outside identified business or residential land. This is not a large land area but is one where non rural land use has occurred. To change the identification to something more appropriate would more readily enable the District Plan zoning to change. Currently this area is zoned rural but there are no real rural land uses occurring. Each of the sites is not large enough to have a realistic rural use hence the applications for non rural. The planners at Council are then put in an awkward position of struggling to support them based on some policies in the District Plan that are not really relevant to these sites.
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Agree
Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Somewhat agree
Comment	This area would be relatively easy to service with appropriate infrastructure. It is a relatively small block within the urban area so the existing networks could join across the area rather then having to expand into it as with other peripheral areas and urban sprawl.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	We agree with the sentiment of the document and it is commendable trying to stop the City from excessive sprawl. In this instance a correction to the future development areas map would not change that. The area identified has a natural border being Johns Road and the land with is too small to have a rural use. Account should be made of the current land occupancy and those recently consented by Council. We have attached a photograph that shows the location of our client's site and other sites in the surrounding area. We have included just a few of the existing land uses on a copy of figure 16. Our concern is that the coding does not accurately reflect what is occurring. We note that the recently approved rental car yard has been included in Greenfields Priority Area - Business which is appropriate but it would be equally appropriate for our client's site similarly notated.
Attachments **site and surrounds**	

Submission No: 035
Attachment 1




Existing contractors yards
510 Sawyers Arms Road
Apollo Motorhome Holidays...
HAREWOOD
Sawyers Arms Rd
Sawyers Arms Rd

Our Space 2018-2048 - Submitters Hearing Schedule for TUESDAY 26 February

Please note that there may be some changes to this schedule as commitments change and some unplanned rescheduling may be required. We apologise in advance for any inconvenience this may cause.

Schedule Updated 17 February 2019

Day 2 [Tuesday 26 Feb] Christchurch City Council - Committee Room 1			
Time	**Submitter Number**	**Submitter/Presenter**	**On behalf of…**
9.20	#20	Lauren Semple/Fiona Aston	Dalkeith Holdings Ltd
9.40	#19	Hamish Wheelans	Gillman Wheelans
10.00	#46	Don Babe	
AMT [10.20]			
10.40	#16	David Zussman	Te Waipounamu Community Housing Trust Network
11.00	#37	John Peet	Sustainable Otautahi
11.20	#42	Katherine Peet	One Voice
11.40	#41	Dirk De Lu	Spokes Canterbury
12.00	#70	Brendon Harre	
LUNCH 12.20]			
13.20	#79	Rebecca Beals	KiwiRail Holdings Ltd
13.40	#65	Juliette Derry/Ewan Carr	Scarborough Hill Properties
14.00	#50	Jo Appleyard	Grant Poultney
14.20	#89	Chris Morahan	
14.40	#77	Steve Clarke	ChchNZ and Development ChchNZ
15.00	#36	Lawrence and Cherry McCallum	
PMT [15.20]			
15.40	#18	Suzanne Vallance	
16.00	#39	Matt Bonis / Jo Appleyard	Christchurch International Airport Limited (CIAL)
16.20			
16.40			

Submission No: 020

Submission Form

Greater Christchurch Partnership
Te Tira Tū Tahi
One Group, Standing Together

HAVE YOUR SAY BY 30 NOVEMBER 2018

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

How to make a submission

Online: Make a submission using the online submission form at www.greaterchristchurch.org.nz/ourspace

Email: ourspace@greaterchristchurch.org.nz

Post: Our Space consultation, Greater Christchurch Partnership, PO Box 73012, Christchurch 8154

Hand deliver: Civic Offices, 53 Hereford Street

SUBMITTER DETAILS

Name: Dalkeith Holdings Limited

Address:

Email:

I am completing this submission: [ ] For myself [ ] On behalf of a group or organisation

If you are representing a group or organisation, how many people do you represent? 1

HEARINGS

Hearings are planned for February 2019.

Do you wish to speak to the hearings panel?

[Y] Yes, I wish to speak at the hearings [ ] No, I do not wish to speak at the hearings

If you wish to speak at the hearings, please indicate your preferred location to be heard and provide a contact number.

Preferred location: [ ] Christchurch City [Y] Rangiora [ ] Rolleston

Contact number:

QUESTIONS

The questions below may help you structure your submission in relation to the various aspects covered in **Our Space 2018-2048**. Section 5.7 of **Our Space** briefly outlines some alternative options considered when preparing this document. You can make submission points under each question and/or other and more general comments under question 9.

Housing growth

Question 1

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree or disagree with this approach and why?

Y Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Do not agree

The submitter generally agrees that further greenfield land around the identified areas is required although notes that it may be more urgently needed than the strategy document suggests. Moreover, in the absence of a clear indication as to the intended policy framework to support the practical release and development of these additional areas, it is difficult to comment further on the appropriateness or otherwise of the approach. In particular, it is not clear as to why these areas are to be identified as "Future Development Areas" rather than "greenfield priority areas" as is currently the case. The submitter is also concerned that the proposal to identify these areas as "Future Development Areas" in the Canterbury Regional Policy Statement, and to leave the detail as to how and when these areas are to be developed to the District Plan review stages, may result in a prolonged shortfall of housing capacity, particularly in Waimakariri where the projected shortfall is greatest.

Among the areas identified for further greenfield development, the submitter strongly supports the approach of selecting those areas which fall within the projected infrastructure boundary and which have been identified for development by the constituent councils. For example, the 'Future Development Area' on the western side of the Rangiora township has been identified for development since the release of Proposed Plan Change 1 to the Regional Policy Statement in 2007. Since that time Waimakariri District Council has developed and published the West Rangiora Structure Plan which sets out the Council's preference for the location and servicing of urban growth, should development of the identified area (which includes the FDA) proceed. Like the draft Update that Structure Plan also has been prepared in consideration of the Council's responsibilities as a service provider and regulatory authority under the RMA, as well as its responsibilities under the Urban Development Strategy. It also provides a framework for integrating development of the area (including the FDA) with the existing Rangiora township. The decision to include the identified area for further greenfield development is therefore consistent with what has been anticipated and planned for in the western side of Rangiora for a number of years. With development now underway/completed to the north and south of the identified area, the "unlocking" of the site for development through amendment to the Regional Policy Statement provides the opportunity to consolidate that development, and complete the delivery of infrastructure to support that urban growth.

Question 2

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why?

Y Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Do not agree

The submitter generally supports the enabling of a range of housing typologies.

Question 3

Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home.

What elements should be included in this action plan?

N/A

Business growth

Question 4

Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why? What further measures would support such development?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

N/A

Question 5

The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses.

Do you agree or disagree this is sufficient and in the right location and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

N/A

Growth needs

Question 6

The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.

Do you agree or disagree with our evidence base and why?

Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Do not agree
		Y		

It is noted that the assessment of demand is based on medium to high growth projections from Statistics New Zealand for the Waimakariri District. It is not entirely clear why this projection scenario has been chosen rather than the high growth scenario identified particularly given the growth over the past decade and the expressed intention to be "ahead of the curve". It is submitted consideration might usefully be given to the implications of the high growth projections for this District.

Transport and other infrastructure

Question 7

Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors.

Do you agree or disagree with this approach and why?

Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Do not agree

N/A

Question 8

Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.

Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Y Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Do not agree

The submitter supports the approach of aligning development areas with areas that are currently, or can easily be, supported by infrastructure. It supports the identification of additional development areas within the projected infrastructure boundary in the CRPS, and particularly where those areas have also been identified for provision of infrastructure for development within Councils' own planning frameworks (such as structure plans and/or funding).

Other

Question 9

What other points do you wish to make to inform the final **Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?**

The submitter strongly recommends that the Panel consider how it might enable development of the "future development areas" identified in the draft Update to occur more expediently than what is currently proposed. While it is noted a streamlined process is intended to be used to remove the barrier to development currently within the CRPS, the deferral of decision-making on the nature and timing of the development to the District Plan review stage risks unduly prolonging the identified shortfall in housing capacity over the medium term.

The Draft Update indicates that decisions on the second generation District Plans could be issued in 2022. Given the development of these second generation District Plans is not occurring through a streamlined process (such as the Christchurch Replacement District Plan or Auckland Unitary Plan) and changes to the CRPS are anticipated during the proposed timeframe (which would have implications for both District Plans), the proposed timeframes are, in the submitter's view, highly optimistic. Further, while decisions on the second generation Waimakariri and Selwyn District Plans could be released in 2022, those decisions would be subject to appeal which could add further, considerable delay to their operation. This delay would significantly threaten the ability of the identified Councils to provide sufficient housing capacity as required under the National Policy Statement for Urban Development Capacity.

Given the issues, it is submitted that consideration should be given to whether contemporaneous plan changes should be pursued, amending both the CRPS and the Waimakariri and Selwyn District Plans at the same time. This would ensure that any further delay in the second generation District Plan process would not threaten the ability for the Councils to meet their obligations under the NPSUDC.

Dependent on the rationale for using "future development areas" as opposed to "greenfield priority areas" in the CRPS, consideration might also be given to identifying these areas as "greenfield priority areas" now under the CRPS. This may remove any unnecessary delay that would result from Councils seeking to negotiate the timing of the release of this land.

We require your contact details as part of your submission — it also means we can keep you updated throughout the project. Your submission, name and contact details are given to decision-makers to help them make their decision.

Submissions, identifying submitter names only, will be made available online. If requested, submissions, names and contact details may be made available to the public, as required by the Local Government Official Information and Meetings Act 1987.

If you consider there are compelling reasons why your name and/or feedback should be kept confidential please outline this in your submission.

Submission No: 019

Submission Form

Greater Christchurch Partnership
Te Tira Tū Tahi
One Group, Standing Together

HAVE YOUR SAY BY 30 NOVEMBER 2018

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

How to make a submission

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Post: Our Space consultation, Greater Christchurch Partnership, PO Box 73012, Christchurch 8154

Hand deliver: Civic Offices, 53 Hereford Street

SUBMITTER DETAILS

Name: Hamish Wheelans

Address:

Email:

I am completing this submission: ☐ For myself ☑ On behalf of a group or organisation

If you are representing a group or organisation, how many people do you represent? Group of Development Companies

HEARINGS

Hearings are planned for February 2019.

Do you wish to speak to the hearings panel?

☑ Yes, I wish to speak at the hearings ☐ No, I do not wish to speak at the hearings

If you wish to speak at the hearings, please indicate your preferred location to be heard and provide a contact number.

Preferred location: ☑ Christchurch City ☐ Rangiora ☐ Rolleston

Contact number:

QUESTIONS

The questions below may help you structure your submission in relation to the various aspects covered in **Our Space 2018-2048**. Section 5.7 of **Our Space** briefly outlines some alternative options considered when preparing this document. You can make submission points under each question and/or other and more general comments under question 9.

Housing growth

Question 1

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree or disagree with this approach and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☑ Somewhat disagree ☐ Do not agree

The inclusion of additional land within Selwyn and Waimak districts is helpful however the availability of development land within Christchurch City is becoming constrained. Ground improvement on land zoned residential and currently undeveloped within Christchurch leads to such land becoming uneconomic to develop. As Christchurch has constraints such as CIAL Noise Contours, the Greater Christchurch Partnership should be considering further expansion of townships such as West Melton, Prebbleton, Woodend to cater for any shortfall.

Question 2

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☑ Somewhat disagree ☐ Do not agree

It is clear that the aim is to significantly increase the stock of multi-unit dwellings, irrespective of demand profiles. 60% of new growth is to be met by multi-unit developments (page 11), whereas demand for this type of housing would anecdotally be in the 15-20% demand profile. Local authorities determining the form of housing its residents should be allowed to live in goes beyond planning and becomes controlling. Furthermore the constraint of land supply for greenfields subdivision within Christchurch will have the effect of increasing the cost of raw or undeveloped land, feeding through to the increasing cost of housing for the majority of the market. Whilst multi-unit developments may use less land, they are more expensive per square metre to build due to the complexities of vertical height and multi-level.

Question 3

Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home.

What elements should be included in this action plan?

Having an action plan is one thing. Being able to achieve that action plan is somewhat different. Private developers are unlikely to consider affordable housing as to achieve this would require cross-subsidisation by those which are not termed 'affordable'. If central/local government undertake to meet the cost of that subsidization, such as Kiwibuild then the action plan may have merit, otherwise it will not work.

Business growth

Question 4

Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why? What further measures would support such development?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☑ Somewhat disagree ☐ Do not agree

Requiring new commercial development within Key Activity Centres contradicts having availability of business and convenience shopping that can be reached without modes of transport. Constraining business locations will also lead to more bulk retail which has the effect of tipping the balance against the small shop, the shoe repair shop, the tailor, small food offering, etc, thereby sterilizing variety of offerings to be based around malls type shopping.

Question 5

The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses.

Do you agree or disagree this is sufficient and in the right location and why?

☐ Agree ☐ Somewhat agree ☑ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

No comment

Growth needs

Question 6

The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.

Do you agree or disagree with our evidence base and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☑ Do not agree

Population growth is dynamic. Growth areas of Greater Christchurch will change and the factors leading to those changes may be unforseen, taking into account technology, travel times, transport modes, self drive vehicles, ride sharing, etc. The ring fencing of townships based on currently known factors, growth models and reverse view economics will not enable growth locations to move with the needs of the population and technology.

Transport and other infrastructure

Question 7

Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors.

Do you agree or disagree with this approach and why?

☐ Agree ☐ Somewhat agree ☑ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

I agree that growth should occur around KAC's however there is no allowance for a new KAC to be created. Northwood SupaCentre is an example of a centre that was not foreseen to the extent that it exists today. Planning environments need to able to cope with change rather than being rigid.
Townships such as West Melton must have the ability to grow in form, extent and shape to enable greater retail offering, accomodation, businesses, to ensure alternative modes of transport are also cost effective and efficient.

Question 8

Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.

Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

☐ Agree ☐ Somewhat agree ☑ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

I feel it is hard to disagree with this question however I dont think the question invites commentary around delivery options of these forms of infrastructure. A more appropriate question would be to ask whether privately supplied infrastructure to encourage growth would be appropriate if it meant the population could have greater say in where and what form of housing they chose to live in, rather than this being determined by local and regional councils. Private and public sector needs to work together to deliver good outcomes.

Other

Question 9

What other points do you wish to make to inform the final **Our Space 2018-2048: Greater Christchurch Settlement Pattern Update**?

I submit that the Settlement Pattern Update is based around planning ideals of constraining greenfield growth within Christchurch in the unproven hope that the population will embrace high density living. 45% of growth to be met by redevelopment of existing housing areas (through intensification) is unlikely to occur (figure 12). Furthermore constraining growth in Selwyn and Waimak to a handful of centres removes the potential for townships such as West Melton to grow, enabling efficiency in infrastructure and modes of travel.
I believe the update understates the growth that will occur in Selwyn in favour of Christchurch. Since 2011, Selwyn District has extracted a large population from Christchurch City based on better provision of land, wider scope of living environments and a more pro-active council in delivery of infrastructure. This will continue.

Submissions are public information

We require your contact details as part of your submission — it also means we can keep you updated throughout the project. Your submission, name and contact details are given to decision-makers to help them make their decision.

Submissions, identifying submitter names only, will be made available online. If requested, submissions, names and contact details may be made available to the public, as required by the Local Government Official Information and Meetings Act 1987.

If you consider there are compelling reasons why your name and/or feedback should be kept confidential please outline this in your submission.

Submission No: 046		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Don	
Last name	Babe	
Email	don@blueberrybliss.co.nz	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Christchurch	
Postcode	[redacted]	
I am completing this submission	For myself	
Hearings		
Do you wish to speak to the hearings panel?	I wish to speak at the hearings	
Phone number	[redacted]	
Preferred location to be heard	Rolleston	
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat disagree	
Comment	Make more of an effort to have more of the growth within the Central City.	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat agree	
Comment	Need more mixed use buildings in the Central City	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment	Less caveats on new developments. Development levies discounts for affordable housing within new developments.	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Somewhat disagree	
Comment	There is a lot of commercial development along the axes between the Central City and Rolleston and Rangiora so existing plans are not concentrating development around the centres.	
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*		
Agree/disagree	Somewhat agree	
Comment	No real opinion but there is a lack of cheap rental properties for start up businesses like High Street used to provide.	

Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Somewhat agree
Comment	It is hard to argue with Statistics but the 2013 Census was biased by the part completion of earthquake remediation work so can not be relied upon for trends. Not a lot of recognition of climate change impacts.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree
Comment	Provide excellent services within the Central City to encourage re-population. That may replace the need for continual upgrading of the access from the outlying areas.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Somewhat agree
Comment	Yes but concentrate them around the central city.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	See attached written submission.
Attachments **Regenerate Our Space DB**	

Submission on Our Space.

It is commendable that this planning document is being compiled and the degree to which its predecessors; the Urban Development Strategy of 2007 and the updated Action Plan of 2010 were followed by the affected local authorities. Having Bob Parker, thwe champion of the 2007 Strategy become mayor of its largest council certainly helped this process but a number of planning constraints included in the earlier plan are still evident in the proposed plan, a testament to the success of the earlier plan.

The proposed plan follows the same overall strategy with almost 50% of the projected growth in households planned to be delivered in the outlying districts.

This approach will continue the trend of the past 15 or 20 years where the periphery of the city is thriving but the centre is struggling. This is detrimental for residents of both the centre and the periphery.

The new Strategy feels like business as usual and this concept needs to be tested. There are a number of factors that have changed since the original strategy was developed;

- There are infrastructure changes with more roads either installed or under construction to service the outlying areas.
- The earthquakes had an impact with a number of houses being completely lost in the city and the underlying land being declared unfit for future residential development. Whilst the September 2010 earthquake was centred in Selwyn District the outlying districts are considered safer places to be for residents during periods of seismic activity.
- There are more climate change concerns. The population are now expecting there will be changes to coastlines over the planning period. What they are and how they will manifest is still uncertain but the impact is mostly expected to be within city boundaries.
- The Central City commercial areas are continuing to be rebuilt with some changes in the way it is used. There are less on-street car parks, more cycle paths and a much better city bus exchange. Old buildings that were under-utilised before the earthquake have disappeared and new buildings are mostly occupied.
- Dwelling numbers have declined substantially in the central city and in some suburbs to the east. There has been a less substantial decline in a number of other central city areas, particularly to the north and northwest from the city centre. (quickstats-greater-chch.pdf reported by Statistics New Zealand on the 2013 Census results.)
- A new generation of people have made their presence felt in work forces, target markets and politics. The new generations have some values that are different to their forebears; they are likely to be more concerned about the environment, have different aspirations in terms of work and there are less of them becoming licensed drivers as young as their parents did.
- Our population mix has changed. The influx of immigrants over the past ten years has meant there are significant numbers of us from different cultural backgrounds.

As well as the differences there are some things that have not changed;

- The central city is still struggling to compete with suburban malls for retail dollars.
- The population of the area is still getting older
- The size of the average household is still declining.
- The preferred mode of transport to work is still a single occupancy motor vehicle and there are more of these being provided by employers.

The proposed strategy recognises some problems with this business as usual approach. These have been encountered by most other sprawling cities so are nothing new.

This proposed strategy fails to address the changes that have occurred since the original Urban Development Strategy nor does it fix the problems that remain or halt sprawl.

Most of the problems would be solved if the increase in housing stock was closer to a common percentage increase across the 3 territorial authorities.

Census 2013 data reports there were almost 150,000 dwellings in Christchurch, a little over 20,000 in Waimakariri and just under 17,000 in Selwyn. The housing target is an additional 86,600 units so applying a constant uplift percentage would see almost 70,000 of them in the city, 9,000 in Waimakariri and the last 7,600 in Selwyn.

The proposed strategy recognises that most of the jobs in the future will be in the central city or along the axes from Rolleston to the Central City, from the Waimakariri Bridge to the Central City and between these two axes at the airport. Travel from these outlying towns to the Central City will continue to be important, it is the degree of importance that this strategy can shape.

The proposed strategy targets a further 17,290 housing units in Selwyn so a doubling of the existing number. That will require major changes in the provision of transport for these residents. Limiting the increase to 7,600 could mean that the infrastructure currently under construction may be sufficient. The same may be true for Waimakariri.

Furthermore, increasing the number of housing units in the city has a number of advantages;

- Infrastructure improvements can be concentrated on the Central City. An individual named James Dann recently posted an article on The Spinoff website with a suggested Central City rail network. See https://thespinoff.co.nz/society/24-11-2018/a-new-plan-for-christchurch-rail/?fbclid=IwAR38oLO7yzCPvjfbfZN9iT2C6Pfzh2EV04x5y-BP13TjUhzXh9zkGTPnrHw. This is not necessarily the best rail system we could have for our Central City but it is a good point from which discussions could be had and may be possible in the planning period if less road improvements to Rolleston and Rangiora are required.
- The extra people in and closer to the Central City will go a long way towards the revitalised centre citizens have been seeking since before the earthquakes.
- Active transport becomes viable for people that live less than 10kms from their place of work. It is no surprise that the most people that walk to work live in or close to the Central City.
- The number of motor vehicles coming to the city will not increase as rapidly because of the transport options available to commuters and visitors.
- Many services become so much easier to deliver. In addition to the obvious supply of roading, power and water and the removal of waste, waste water and stormwater there will be advantages for emergency services too.
- The agglomeration effect of concentrating businesses in close proximity will be improved if people do not have to rush away for long commutes home at the end of the working day. With the dominant mode of travel being single occupancy motor vehicles it is difficult for workers to socialise at the end of the day. If they lived a 20 minute walk, bike or bus ride from work there are more opportunities.
- There are social benefits from people using alternatives to single occupancy motor vehicles for their trips to and from work. Single occupancy motor vehicle users are usually the unhappiest commuters and are quite isolated. They know the yellow Toyota they see every day but do not have any contact with other users.
- The health benefits of using active transport for short journeys to and from work are well documented. To put it in context, Type II diabetes costs the Canterbury District Health Board about $100million per annum to treat. It is 80% avoidable by an active lifestyle. If

one quarter of that benefit could be channelled back into infrastructure improvements our active transport modes would be very well catered for.

- Developers of large, greenfield estates often protect the neighbourhoods by imposing building caveats that exclude certain people. This has resulted in a separation of housing types with less well-off people clustering together in older housing whilst the more affluent congregate in the more pricey and newer areas. This has had quite an impact on social cohesion. Redevelopment of small city areas of one or two sections would mean the developer does not feel as pressured to maintain standards so may build more affordable housing. Society may find it benefits from being mixed up again.

The proposed strategy puts forward the concept of the 10 minute neighbourhood. This is well presented but has been around for some time, especially in the United States. They have a concept called a walkability score where each address gets a value assigned from 0 to 100. A low number means there are few facilities within walking distance whilst a high score indicates the presence of most amenities close by. This score can be applied to New Zealand addresses and this has been done on a random basis in Christchurch.

This submission suggests that the efficacy of the walkability score in Christchurch be assessed and if it is good then all new developments should have a minimum they need to achieve. This may change over the distance from the Central City. For example Central City units may require scores in excess of 90. That could reduce to 85 outside the one way streets but within the four avenues. Maybe the next suburbs are at 75 and some on the edge of town may be permitted to have scores as low as 60.

This submission has some lofty goals and some may say they could never be implemented. That is the advantage of a long term strategy, significant changes can be signalled for the future so changes can be made. This approach worked well for the dairy industry where effluent limits were signalled 5 years out so farmers were able to modify their behaviour to meet the targets as they became operational.

In order to encourage more development in the city a carrot and stick approach could be used. Part of the carrot would be to allow mixed use buildings anywhere within the Central City. A building may have retail and hospitality on the ground floor, office space above that for a few floors then residential at the top. These buildings would not have to be excessively tall, they could be accommodated in 5 levels.

A further carrot would be ensuring development levies make it more attractive to build closer to the Central City. This gives developers some of the gains from the lower service costs highlighted earlier.

Sticks generally involve the taxing of unwanted activities. Hong Kong imposes a steep tax on empty houses in order to utilise more of the existing housing stock before expensive reclamation projects are undertaken to provide more. There are a large number of unoccupied dwellings in central Christchurch although the 2013 Census figures that are available would have included red zone houses awaiting demolition. It will be interesting to see what the 2018 data has to show. If the number of unoccupied houses is still high then this issue needs to be addressed.

Undeveloped sites are also a drag on re-population. Maybe empty sites have a year to have a new dwelling built or the rates are increased to the average of the addresses around them. This would mean the owner would be paying rates on a house that is not there and service costs for services that are not being used. Putting a time limit on the increase would mean that the transfer price would

reflect how much of the time is left before the rates are increased so encourage developers to sell quickly.

From a commercial point of view, one of the big losses from the earthquakes was the small, old shops in town. These were great business incubators. People with an idea could rent a shop quite cheaply and if their idea worked they could move onto bigger and better locations. There were a number of apparel shops for instance that started their life in High Street. These are missing from the Central City now and we are poorer for that. Mixed use buildings may be part of the solution.

In summary this submission suggests that more housing needs to be provided within the city and preferably close to the Central City. This will address a number of the changes that have happened since the original Urban Development Strategy was adopted and provide much better transport outcomes and choices.

Submission no: 016

Community Housing
Nga Whareraū o Aotearoa

PO Box 11543
Wellington
New Zealand
Ph 04 385 8722
www.commmunityhousing.org.nz

27th November 2018

Greater Christchurch Partnership
ourspace@greaterchristchurch.org.nz

RE: Our Space 2018-2048, Greater Christchurch Settlement Pattern Update, Whakahāgai O Te Hōrapa Nohoanga. Draft for Consultation November 2018

1. Community Housing Aotearoa (CHA) is the peak body for the community housing sector that provides social and affordable housing throughout New Zealand. We represent the interests of our members on issues that impact their ability to fulfil their organisational missions. Our 90 provider members house approximately 25,000 people nationally across 13,000 houses. Our 19 partner members include developers, consultants and local councils.

2. CHA provides support to the Te Waipounamu Community Housing Providers Network (The Network) and this submission is made on behalf of the Network and its members. The draft document was discussed at the 22nd November 2018 Network meeting.

3. The Network brings together community housing providers and their partners operating in the South Island. Its members' primary activity is to provide community housing solutions for people in housing need. Member organisations operating in the Greater Christchurch area include:

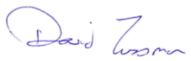
   Abbeyfield Christchurch
   Accessible Properties
   Christchurch Methodist Central Mission
   Cobham Street Trust
   Comcare Charitable Trust
   Community Housing trust
   Compass Housing Services Ltd
   Emerge Aotearoa
   Habitat for Humanity (Christchurch) Ltd
   Housing Plus Charitable Foundation
   Lifemark
   Mike Greer Homes NZ Ltd (Social & Affordable Housing)
   New Zealand Housing Foundation
   Ōtautahi Community Housing Trust
   Pathway Charitable Group
   Salvation Army
   Stepping Stone Trust
   Te Rūnanga o Ngāi Tahu
   Tenants Protection Association (Christchurch) Inc
   Vision west Community Trust

4. Our Space 2018-2048's commitment "to working collaboratively to develop an action plan and establish partnerships to enable social and affordable housing provision across Greater Christchurch" is supported by the Network and is consistent with the views of the wider membership of CHA.

5. The Network is pleased to see the adoption of the United Nation's Right To Adequate Housing and the 7 measures that form part of this (Security of Tenure, Affordable, Habitable, Accessible, Culturally Appropriate, Location, Services).
6. The Network is pleased to see Inclusionary Zoning and covenants within the action plan work streams as well as the identification of the Network as a partner. An additional area should be the provision of community facilities and infrastructure.
7. The Network would like the opportunity to further develop and present its submission to the Hearings Panel.

Thank you for the opportunity to submit.

Kind regards,



On behalf of Jill Hawkey
Co-Chair Te Waipounamu Community Housing Network

Please contact David Zussman at Community Housing Aotearoa,

Submission No: 037

sustainable
ōtautahi christchurch

Sustainable Ōtautahi Christchurch Submission

on the

Our Space Draft for Consultation November 2018

The Government's National Policy Statement on Urban Development Capacity (NPS-UDC) came into effect in December 2016. That document makes it clear that growth is to be planned and managed to support the long-term needs of people and communities. That is the background to this Our Space document. In our opinion, last year's change of Government towards a coalition with markedly-different approaches means that there is the need for us to think very differently about plans for the future.

"Urban growth" seems to be a default option in the Our Space Draft, albeit qualified by the need to "manage" growth. "Sustainable growth" also reflects the previous government's urban growth agenda. In all of these contexts, it is in fact "economic growth" that is being referred to. Until very recently this was defined, explicitly or implicitly, as growth in GDP. This growth is assumed to be "market led" unless decisions are made to set out a different approach. We can identify only one example currently before us which refers to social/affordable housing.

While economic growth has been a default policy mantra for most societies for a long time, it is not until recently that the reality of "*un*economic growth" has been realised, validated

and quantified. In short, it is now well-known that economic growth measurements are largely computed by only including positive contributions to GDP and ignoring the growing reality of what economics refers to as “negative externalities”, where further “growth” may actually involve more damage to Environment, Society, Economy and Culture than real benefits. Promotion of further economic growth is also unavoidably associated with non-renewable, especially fossil fuel, resource use and its inevitable by-products of global climate change and pollution. This has been documented for many advanced economies, including NZ.

Our Submission is based on a call to take seriously the idea that our city and our nation may already have reached a stage where this policy update for the Greater Christchurch Settlement Pattern may not be what it is designed to be and may in future years be regarded as having been an undesirably risky direction to be following. Given that local government only has limited powers and is subject to priorities set by central government, it could be argued that this exercise will, by default, follow previous government policy that emphasises simple GDP growth

We submit that this Update needs URGENTLY to address the truly long-term needs of the Greater Christchurch area taking account of zero carbon aspirations etc.

We note that the Local Government Act will shortly be amended to restore the statutory responsibility for local government as being to uphold the Four Well-beings, and that the 2019 Budget will be a Wellbeing Budget. The opportunity for a wider approach to planning is soon to be enacted by the current Government. It would be a pity if this well-intentioned Draft before us were to be overtaken by a markedly-different framework for development shortly after it is put into place.

Faced worldwide by what has been termed a Gathering Storm of interconnected high-level risks (climate change, sea-level rise, financial system breakdown, depletion of high-quality resources such as petroleum, pandemics, poverty, starvation, mass migration, escalating tensions between large highly-militarised countries and so on) any confidence in the idea that continuing the previous government’s simplistic Business as Usual approach into the long term future is at best naïve and at worst criminally-irresponsible. Our grandchildren deserve better.

The future envisaged in the Our Space draft will not happen in the way it is described. A comprehensive risk-based approach is badly needed, to bring a strong dose of realism into planning. Even though this particular planning exercise is directed only towards allocation of land for the EXTRA housing and business expected in the near future, we see it as vital that it takes into account a much larger frame of reference than has been used in this Draft.

A much broader summary of the overall situation we in New Zealand are experiencing has been provided by the expert work of the Third Sector Organisation (TSO) Wise Response Society (www.wiseresponse.org.nz) in its Submission, in response to a recent discussion paper from Treasury on Resilience and Future Wellbeing. It is included here as a Supplement to our Submission, with the permission of Wise Response.

To summarise our main points, the finer points of detail in the Draft, relating to future "growth needs" for housing, business, land, transport and so on must be firmly-redirected towards Big Picture issues such as those referred to above. If the foundations on which we plan to build our regional future are as unsound as we believe, the risks of continuing along this path of market-led growth will become very clear, probably within a generation. It is perhaps not inappropriate, given the outcomes of the 2011 Earthquakes, to make an analogy with the history of Christchurch's urban development, where putting building foundations on inappropriate soils started in the late 19th Century, with disastrous effects when the 2011 earthquakes happened. Clear thinking about the Future must take centre stage in our planning, in place of rose-tinted dreams of the previous Business as Usual.

We also submit that our work in Sustainable Ōtautahi Christchurch, together with that of Wise Response and many other such groups is typical of the contribution to policy formation by a wide range of Third Sector Organisations (TSOs). These bring together considerable expertise, technical and other, from the wider community, with people working together, most of them voluntarily without payment, for the common good "for us and our children after us". We wish to signal that consultation processes currently followed by government are seldom put forward in a way that encourages respect for meaningful inputs from TSOs.

Due November 30th

wiseresponse .org.nz

Submission No: 037
Attachment 1

Wise Response Society Inc.

SUBMISSION TO TREASURY on the LIVING STANDARD SERIES

Discussion Paper 18/05.

Resilience and Future Wellbeing: The start of a conversation on improving the risk management and resilience of the Living Standards Capitals.

Sir Alan F. Mark, FRSNZ.
Chair,
Wise Response Society Inc.,
alan.mark@otago.ac.nz

October 21, 2018.

A. SUBMISSION

1. The Society strongly endorses the substance and importance of the Treasury's Resilience and Future Wellbeing, Living Standards Series: Discussion Paper 18/05. This paper is generally consistent with the purpose and philosophy that has been promoted by our Society since its establishment in 2013, and it represents the first time we have seen risk and resilience addressed directly by a Government department. We therefore appreciate the opportunity to formally comment on it.

2. We note in the Disclaimer that the paper is "not the Treasury's position on measuring intergenerational wellbeing and its sustainability in New Zealand."

3. We also note the paper's statement (Executive summary) that, to date, much of New Zealand's risk management has been decentralized and siloed, and consequently insufficient attention has been paid to the interconnectedness and cascading nature of risk factors. We concur with this assessment, which was apparent in the Treasury response to our original submission to the Finance & Expenditure Select Committee (Petition 2011/106 of Sir Alan Mark 2015), which pointed to various activities of the branches of government.

4. That Treasury response, however, failed entirely to identify a strategic, coordinated approach to identification and management of risk, which could provide consistency in the data used, and the strategic analysis relied upon. It is therefore most heartening to see this type of approach integral to this discussion paper.

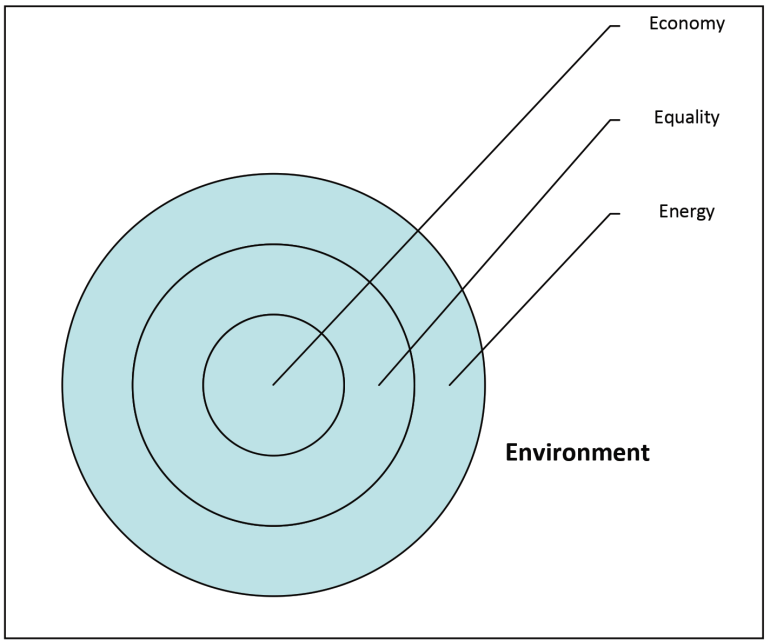
5. Further, we note that the paper recognizes that "[a] more proactive, coordinated and evidence-based approach to risk management and resilience building is required to maintain societal resilience and sustainability in the face of the complex risks we are facing domestically and globally." We certainly endorse this statement.

6. We note, and strongly endorse the statement that "Because of the cross-cutting nature of risks, cross-government coordination is key to strengthening our overall resilience." We endorse a sense of cohesion and widespread capacity to talk across the usual divides and believe shared principles are crucial to dealing with almost every aspect of resilience.

7. We support the Treasury's proposed "Living Standards Framework and its stated objective: "to maximize intergenerational wellbeing." We also endorse the proposed "Four Capitals" framework of interdependent Natural Capital, Social Capital, Human Capital and Financial/Physical Capital, as described, and as the basis for policy development to improve wellbeing for New Zealanders, in both improved risk management and resilience building.

a. A caveat to this support comes from the ecological-economics perspective, and consideration of '4 E's' – Economy, Equality, Energy and Environment. This perspective relies on the insight that, in order for the economy to serve the needs of the people engaged in it, it requires a number of other matters to be considered and accounted for.

b. Furthermore, those considerations are not of equal weight, as the ECONOMY sits within a society whose EQUALITY allows it to continue functioning peacefully. Within this is the ENERGY that enables GDP activity, all of which is derived from and dependent on the ENVIRONMENT - specifically, both functioning ecosystems and resources at a price that the market can bear.



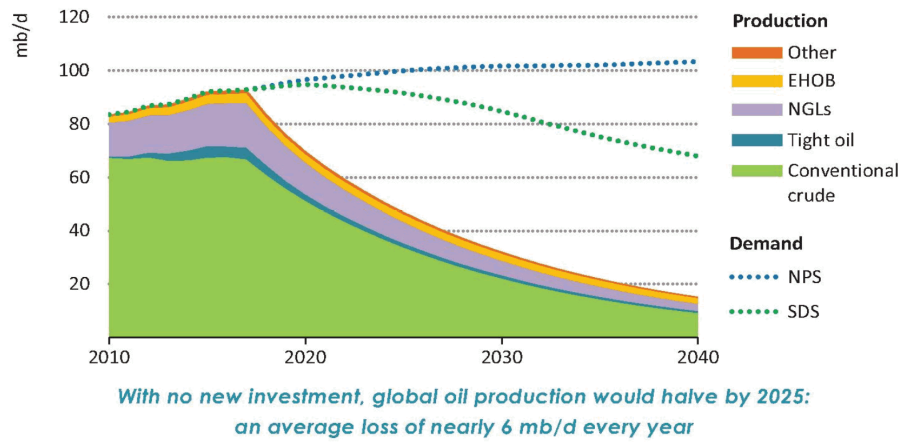
c. Growing in-equality has led historically to a decline in living standards for the majority, and ultimately to conflict and revolution.

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

d. A further caveat concerns that supply-side of fossil energy to our global society and hence, NZ as inextricable part of that society:

i. Changes in the energy supply situation. The economy shows a tight correlation between GDP levels and the energy available to it. The International Energy Association (IEA), in the just-released World Energy Outlook 2018, is forecasting strong demand growth for energy following historical trends (Figure 3.13). At the same time, it is saying that it is very uncertain from just where the investment, that would enable the supply increase necessary to realise that growth will come.

Figure 3.13 ▷ **Oil production with no new investment from 2018 and demand in the New Policies and Sustainable Development scenarios**



Note: EHOB = extra-heavy oil and bitumen; NGLs = natural gas liquids; NPS = New Policies Scenario; SDS = Sustainable Development Scenario.

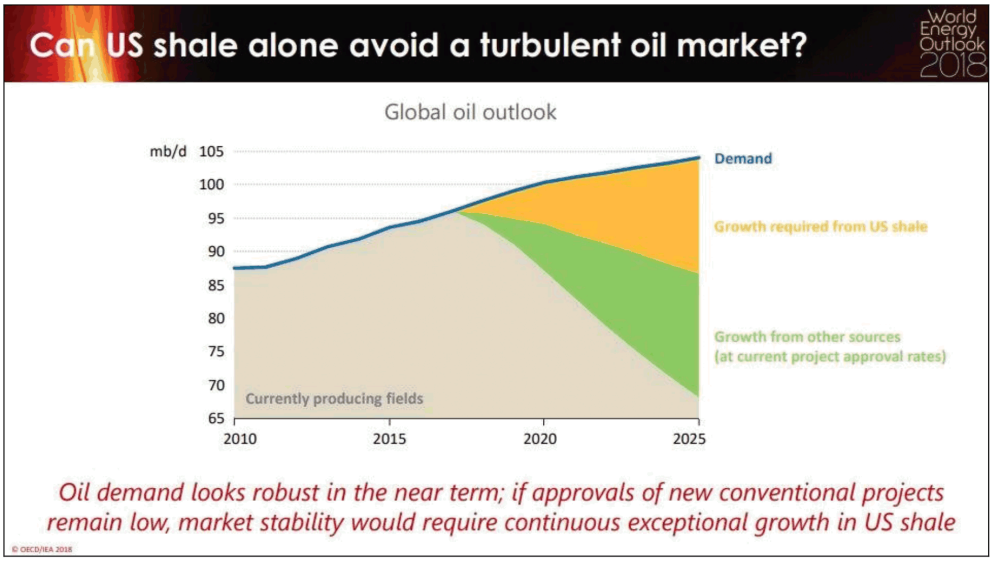
ii. In particular, it is saying that without a pick-up in investment, global supply will start to decline in total volume from around 2020, and HALVE by 2025, based on the decline rates of existing production assets. The second figure below shows that if approvals of new conventional oil prospects remain low, market stability would require "continuous exceptional growth in US shale". Yet experience to date with shale wells is that their useful life is typically limited to a few years.

iii. Even if only partially realised, **the grim implications of this energy scenario, for the Risk and Resilience of society generally, can not be overstated**.

iv. Indeed, it is seeking redress for our refusal to consider as yet the probability and implications of supply side limits to fossil carbon on both the economy and GHG emissions that is the primary objective of our Society and the reason why we have worked so determinedly for a national assessment of risk. This article

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

by Dr Tim Morgan[1] is a helpful summary, in financial language, of the issues regarding energy: http://bit.ly/2BnRMvC



v. There is a growing understanding of the environmental issues we face, concerning climate change and the local environmental impacts of industrial activity (including farming). But there is also the 'Planetary Boundaries' framework, that speaks to other critical factors in the broader risk environment as described by science <https://www.stockholmresilience.org/research/planetary-boundaries.html>.

8. We are impressed by the future strategic planning described for both Finland and Singapore (pp. 36-7), both countries renowned for their successful governance. In this context, New Zealand had a successful Commission for the Future (CFF) in 1979-82, which was dismissed by the Muldoon Government in 1982, and further to this, I was invited, in February, 2017, by the Ministry for the Environment, together with Sir Geoffrey Palmer QC, and Mr Bryce Johnson (in his capacity as Chief Executive of Fish & Game NZ), to present a case for "planning for the future", when we all recommended a Futures Commission or equivalent, be proposed for the then Government's consideration. But we heard no more!

a. The Wise Response Society has discussed whether this would be most effective as a separate legal entity to the Climate Change Commission (CCC). Whilst this would appear logical, we consider it will be politically difficult enough simply to get cross - party agreement for an effective CCC.

b. Accordingly, we recommend that a broad enough remit is given to the CCC that it can take a wider view of the risk environment as we have outlined (including fossil

[1] Cambridge educated Dr Tim Morgan is an energy industry and economics specialist, having worked at investment house UBS Drew Phillips as an oil analyst and then as Head of Research at Tullett Prebon from 2009 to 2013.

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

carbon supply, which is clearly highly relevant to GHG emissions), and how this pertains to discussions around Climate Change mitigation and adaptation.

c. With this perspective, climate warming and destabilisation can be helpfully framed as a 'risk multiplier', as the Pentagon has described it in the past.

9. We support the overall substance of this discussion paper and endorse the stated intent of classifying the risks by their likelihood and impact and encouraging further thinking and discussion as to how to strengthen risk management and resilience building through public policy.

10. We also endorse the recognition of the importance of a multi-stakeholder (whole-of-government plus whole-of-society) coordinated approach to risk management and resilience building among the four interrelated capitals that have been identified.

a. When this issue was discussed with our Patron, Sir Geoffrey Palmer QC, last year, he suggested that we needed to advocate for an approach that integrated deeply with the various branches of government to improve consistency.

b. He suggested that the analysis should be done by an independent body similar to the PCE, and disseminated through the ministries and executive / legislative branches of government via a network of specialists located within the various bodies.

11. Finally, we anticipate and strongly support the stated intent of building on this discussion paper to formulate the basis for a formal government policy in the general field of risk management and resilience, directed at planning for a much more sustainable future for this country.

12. Fundamental to seeing the importance of this is that you 'don't know what you don't know'… We have a situation where our predominant analytical frameworks are almost completely blind to resource depletion and largely unable to properly account for climate change mitigation and adaptation costs. This situation is unacceptable, and must change, if our children are to have any hope of a safe and fulfilling life within a liveable climate.

13. Our review of risk assessments undertaken by other states is that a robust, objective outcome that is ultimately useful for effective policy development, is not always achieved. We of Wise Response therefore request active participation in the process of defining the scope / terms of reference for any body assembled to address Risk and Resilience for New Zealand.

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

B. BACKGROUND: Wise Response Society's Appeal to Parliament

Details of the Society's Appeal to Parliament in 2015 are relevant to our response to the Treasury's current Discussion Paper 18/05, so we present it here:

THE APPEAL
Symptoms too serious to ignore: a call to face up to NZ's critical risks.
Appeal to Parliament for a NZ Risk Assessment.
Petition Presented April 10, 2014.

As demand for growth exceeds earth's physical limits, causing unprecedented risks, what knowledge and changes do we need to secure New Zealand's future wellbeing?

> ***To the House of Representatives:*** *We the undersigned, request that the House:*
> *(1) urge Government to undertake a National Risk Assessment of: Economic Security, Energy and Climate Security, Business Continuity, Ecological/ Environmental Security and Genuine Well-being, and:*
> *(2) that from that Risk Assessment, develop and implement cross-party policies to avert any confirmed threats to future generations of New Zealanders.*

We live on a biologically complex and exquisite planet, home to 7 billion people and a myriad of other unique life forms. We believe it is our human responsibility to maintain the integrity of life support systems and the natural processes which sustain and renew them.

We believe it is also our responsibility to fervently defend the basic right of humans to live secure and fulfilling lives consistent with the UN Declaration of Human Rights. It follows that our generation must satisfy our present material needs in ways that do not diminish the prospect of their realisation for present and future generations.

We are deeply concerned about the links between global climate change, fossil fuel extraction and combustion, and the economy. We consider the evidence is now overwhelming (refer Urgency below) for accepting that human-induced climate change, (including extreme weather events) and impending oil constraints threaten our ability to meet those environmental and social obligations. There are also numerous other unprecedented trends and threats of the present era which, individually or in combination, could destabilise New Zealand's wellbeing.

So far, New Zealand has failed to truly face up to such unprecedented threats to its collective security. Indeed, some policies exacerbate the situation. There appears to be an unwavering faith that technological fixes will be found in time. Yet with scientists saying critical "thresholds" are upon us, the odds of such solutions being found diminish by the day and the consequences of this faith being ill-founded will, in all probability, be disastrous and irreversible.

Therefore, in the name of all our children and grandchildren we, the undersigned, call on the New Zealand Parliament to face up to this situation now by dispassionately assessing risk levels in the following five areas. Then, if found necessary, and with public input, design coherent, robust cross-party strategies and policies to avert these risks and give future generations the very best chance of security, peace, social justice and opportunity for all.

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

1. Economic security: the risk of a sudden, deepening, or prolonged financial crisis. *Such a crisis could adversely impact upon our society's ability to provide for the essentials, including local access to resources, reliable supply chains, and a resilient infrastructure.*

2. Energy and climate security: the risk of continuing our heavy dependence on fossil fuels*. Progressively restricting their extraction, importation and use could promote a switch to genuine renewables and encourage smarter use of existing energy and energy systems while creating better public transportation. Such responses would simultaneously lower GHG emissions.*

3. Business continuity: the risk exposure of all New Zealand business, including farming, to a lower carbon economy. *To mitigate this risk, all businesses could explore both market and job opportunities in reducing the human ecological footprint, finding substitutes for petroleum-based goods and services, increasing efficiencies and reducing waste in food and resources. This would position New Zealand as a market leader in low-carbon technologies and living arrangements.*

4. Ecological security: the risks associated with failing to genuinely protect both land-based and marine ecosystems and their natural processes. *We believe that such protection is essential for both the maintenance of indigenous biodiversity and ultimately, all human welfare.*

5. Genuine well-being: the risk of persisting with a subsidised, debt-based economy, preoccupied with maximising consumption and GDP. *An alternative is to measure progress by means of indicators of community sustainability, human well-being, more equitable wealth-sharing and environmental resilience, and to incorporate full-cost pricing of harmful environmental impacts.*

A risk assessment is the first step in determining the scale, timeframe and interactivity of the risks faced by New Zealand. It would build on international risk assessments such as the World Economic Forum's Global Risks 2013 report. Such a report for New Zealand should then be used as the basis for engaging the public and businesses of New Zealand in informed discussion as to what choices need to be made to buffer New Zealand from such risks and to work towards genuine well-being.

Thirty years ago, widespread public concern about nuclear proliferation led to cross-party support for New Zealand's anti-nuclear legislation. This was a defining moment in New Zealand's history, and was in response to just one single risk. The Land and Water Forum is another example of where New Zealanders have come together to acknowledge, work through and address the risks of deteriorating water quality. Today New Zealand faces numerous additional risks, which are all the more risky for being largely unacknowledged. We believe Parliament should build on its proud tradition of foresighted collective response to risks, and initiate a risk assessment as the first step in achieving a more secure future.

Urgency

The International Energy Agency (IEA) warned in 2013 that less than one-third of proven reserves of coal, oil, and gas could be burnt by 2050 to avoid exceeding 2degC of global warming. Put another way it also states that "If current trends continue, and we go on building high-carbon energy generation, then by 2015 at least 90% of the available "carbon

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

budget" will be swallowed up by our energy and industrial infrastructure. By 2017, there will be no room to move at all". (http://www.guardian.co.uk/environment/2011/nov/09/fossil-fuel-infrastructure-climate-change, IEA (2011) *World Energy Outlook*). The IPCCs latest assessment details impacts and vulnerability associated with climate change predicts future food and water supply insecurities, and calls for both urgent mitigation and adaptation (IPCC 5th WG 2 Adaptation report April 2014).

- The American Association for the Advancement of Science provides an update summary on climate change in "What we know: the reality, risks and responses to climate change" 2014. International negotiations to combat human-induced climate change (Rio 1992, Kyoto 1997, Copenhagen 2009, Durban 2011) reveal that the course of climate diplomacy has increasingly lost touch with the scientific evidence (New Scientist 3843: p3. We can still avoid a 'lost decade' on climate change. Dec 2011). Not only is the widely used target, based on the 4th IPCC assessment report (450 ppm atmospheric CO2 equivalent) now very difficult to achieve, but this limit may be far too high. Scientists such as Jim Hansen argue that the maximum safe level for atmospheric CO2 concentration is 350 ppm (Hansen, J. 2012. Scientific Case for Avoiding Dangerous Climate Change to Protect Young People and Nature. http://pubs.giss.nasa.gov/abs/ ha08510t.html).
- Fatih Birol from the IEA (2011) has also stated that maximum global conventional crude oil production ("peak oil") occurred in 2006. This means that "all liquids" supply will likely steadily decline after an undulating plateau with a growing gap between demand and supply occurring from around 2015. The economic implications of this decline are likely to be serious. See Hirsch, R. L., Bezdek, R. & Wendling, R. 2005. Peaking of World Oil Production: Impacts, Mitigation, & Risk Management, US Department of Energy, and Hirsh R.L, ASPO presentation Vienna. 2012). Only by moving away from fossil fuels can we both ensure a more robust economic outlook and address the challenges of climate change. This process will be a "decades-long transformation that needs to start immediately" (see Murray, J. & King, D. 2012. Climate policy: oil's tipping point has passed, Nature 481: 433–435.).
- Financial inequity is increasing and the world financial system is unable to deliver security; social cohesion is at risk both nationally and globally (see Jackson, T. 2009. Prosperity without Growth. Earthscan. London, UK). In 1998, more than 45% of the globe's people had to live on incomes averaging US$2 a day or less while the richest one-fifth of the world's population has 85% of the global GNP. The gap between rich and poor is widening (see Meadows, D., Randers, J., Meadows, D. 2004. Limits to Growth: the 30 Year Update, Chelsea Green, USA.). The perpetual exponential growth myth is enthusiastically embraced by politicians and economists as an excuse to avoid tough decisions facing humanity (see The Asahi Glass Foundation. February 2012. Environment and Development Challenges: the Imperative to Act, and Lloyd, B. 2009. The Growth Delusion, Sustainablity1: 516-536). The impossibility of this goal in a finite system has been outlined by Albert Bartlet. http://www.albartlett.org/books/essential_exponential.html
- For a readable and integrated summaries of limits and the reasons why we face some difficult decisions and how we might respond see Richard Heinberg's 'The End of Growth' (http://www.postcarbon.org/end-of-growth-chapters) and the Tullett Prebon report 'The Perfect Storm' (http://www.tullettprebon.com/Documents/strategyinsights/TPSI_009_Perfect_Storm_009.pdf) An Emerging Issues paper by the Royal Society of NZ presents evidence

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

from local and global trends suggesting that New Zealand should carefully review its direction of development examines a "green economy" for NZ - low carbon, resource efficient and socially inclusive (Facing the future: towards a green economy for New Zealand March 2014).

APPENDIX: Background to the Wise Response Society Inc:

Purpose of the Society:

1. The purpose of this Dunedin-based but New Zealand-wide Society is to persuade the New Zealand Parliament, Government and New Zealand's civil society in general, to confront and respond effectively to any confirmed threats arising from the question: "As demand for growth exceeds earth's physical limits, causing unprecedented risks, what knowledge and changes do we need to secure New Zealand's future well-being?" Our website: www.wiseresponse.org.nz contains a relatively comprehensive record of the Society's activities since its establishment in March, 2013.

2. During the establishment phase of the Society I gave a series of 12 presentations in the main centres from Auckland to Invercargill. This included details and endorsement of Forgie and McDonald's (2013) proposal for a Genuine Progress Indicator (GPI) for New Zealand, "to provide a measure of national well-being that can be used to complement economic indicators", as a substitute for the traditional GDP measure of the economy (see Forgie, V.E & McDonald, G.W. 2013. Towards a genuine progress indicator for New Zealand. In: Dymond, J.R. ed. "*Ecosystem Services in New Zealand: Conditions and trends*." Lincoln. Manaaki Whenua Press. Pp. 474-94.).

3. The Society lodged a petition to Parliament in April 2014 requesting it undertake a New Zealand-wide Risk Assessment in five key inter-related subject areas - economic security, energy and climate security, business continuity, ecological-environmental security, and genuine human wellbeing. It presented its case to the Finance and Expenditure Select Committee on July 1, 2014[2]. Its case was dismissed by the Government members with a supporting statement from Treasury, which claimed the Society's concerns were being adequately addressed by Government. All three Minority parties on the Select Committee, however, each accepted the Society's case. In this context it is reassuring to now witness their sincerity as members of the present Coalition Government, and also the notable change in the Treasury's current response from that we witnessed in their response to our submission in 2014, under the previous Government.

4. The Society has continued to promote its purpose through submissions on several relevant issues, including resource consent applications and also press releases and several presentations: most recently, in 2018, these were a video presentation to the Engineers for Social Responsibility on: "High expectations for the proposed Climate Change Commission: Will the Government's action plan push us fast enough"; a session on: "Climate Change:

[2] Petition 2011/106 of Sir Alan Mark

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

Why, when and how do we respond", at Otago University's International Science Festival, and a U3A course on: "Finding a sustainable transition path to zero net carbon emissions for New Zealand."

5. In 2016, the Society appealed the Otago Regional Council's draft revised Regional Policy Statement (RPS) Review to the Environment Court, with the assistance of Dr Royden Somerville QC and barrister William Anglin, to seek strengthened recognition in the Statement of the importance of resilience, ecosystem function, risk assessment and precaution, as well as addressing renewable energy and the causes of climate change, not just adaptation to it.

6. We also submitted on the Emissions Trading Scheme (twice), the Resource Legislation Amendment Bill, the Conservation and Environment Science Roadmap, the Productivity Commission (twice), the Child Poverty Reduction Bill, the Zero Carbon Bill, the Taxation Working Group, the Crown Minerals (Petroleum) Amendment Bill, the IPCC 2018 Report, and the Paris UN Negotiations – NZ Priorities. We also facilitated the development a Position Statement and Action Plan for NGOs and civil society, under the name Climate Consensus Coalition Aotearoa (CCCA), which proposed a goal and a process by which to effectively meet the spirit and intent of the Paris Accord of December, 2015. The total of individuals and the membership of organisations which formally endorsed the CCCA statement numbers approximately 330,000 from about 100 organisations.

7. On 16 August, Wise Response Chair, Sir Alan Mark led presentations of the CCCA Position Statement and Action Plan to MPs at Parliament on behalf of its creators and supporters. There were two presentations - one to GLOBE-NZ members (chaired by Dr Kennedy Graham) and the second to an invited audience of all MPs in the Beehive Theatrette, hosted by GLOBE-NZ.

8. Professor Jonathan Boston and our Patron, Sir Geoffrey Palmer QC, as well as representatives of five other NGOs, who helped develop the CCCA statement, spoke in support. These included James Drew-Young (GenZero), Adelia Hallett (Forest & Bird), Dr Roger Blakeley and Sue Kedgley (Wellington R.C. & Local Govt NZ), Gay Keating (Ora Taiao) and Katherine Peet (Network Waitangi Otautahi/One Voice Te Reo Kotahi). Concluding remarks were provided by Sir Geoffrey Palmer QC (for WR), and Tracey Martin (NZ First), David Parker (Labour) and Kennedy Graham (Greens), for GLOBE-NZ.

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

SUBMISSION on
Our Space 2018-2048 Greater Christchurch Settlement Pattern Update.
from One Voice Te Reo Kotahi (OVTRK) Organising Group

***One Voice Te Reo Kotahi (OVTRK) Organising Group supports the attached submission from* Sustainable Otautahi Christchurch.**
Emphasising the last phrase of the SOC submission which seeks encouragement of respect for meaningful inputs from Third Sector Organisations (TSOs)
OVTRK further submits
on Section 6.3 Collaborative partnerships that:
Relevant TSOs need to be specifically included as collaborative partners.
They are not mentioned either in the setting of the agenda nor in the implementation of this Update.
The private sector and the community are recognised as having a key role - but not relevant TSOs.
These TSOs are in the neighbourhoods, and are also metropolitan, often with a nationwide dimension. So they may be locality- , interest- , identity- , or issue-based.
and on Section 6.4 Research and Monitoring that:
TSOs to bring to the table focused perspectives that complement those from the statutory and commercial approaches.
Not being limited to a particular statutory obligation or commercial imperative enables TSOs to speak up for missing voices. Such realities need to be included for the **regular monitoring and review** referred to as being **critical - page (iii)**

Finally we draw attention to the reality that TSOs are well informed about those with the greatest need and can identify appropriate assistance to meet those needs. They have access to relevant qualitative data to complement quantitative data - the experience of those peoples lived experiences can thus be included.
The inclusion of this expertise is vital for an **integrated and holistic approach that recognises the interconnected nature of the Greater Christchurch environment - page 4.**
Unless there is deliberate attention to include the expertise of TSOs, a huge resource for both identifying the agenda and the implementation of the Greater Christchurch Settlement will be lost.

We wish to speak to our submission.

Katherine Peet
on behalf of the OVTRK Organising Group
--
<***onevoicetereokotahi.blogspot.co.nz***>
Direct lines 03 384 1281 or 027 217 0009

sustainable
ōtautahi christchurch

Sustainable Ōtautahi Christchurch Submission

on the

Our Space Draft for Consultation November 2018

The Government's National Policy Statement on Urban Development Capacity (NPS-UDC) came into effect in December 2016. That document makes it clear that growth is to be planned and managed to support the long-term needs of people and communities. That is the background to this Our Space document. In our opinion, last year's change of Government towards a coalition with markedly-different approaches means that there is the need for us to think very differently about plans for the future.

"Urban growth" seems to be a default option in the Our Space Draft, albeit qualified by the need to "manage" growth. "Sustainable growth" also reflects the previous government's urban growth agenda. In all of these contexts, it is in fact "economic growth" that is being referred to. Until very recently this was defined, explicitly or implicitly, as growth in GDP. This growth is assumed to be "market led" unless decisions are made to set out a different approach. We can identify only one example currently before us which refers to social/affordable housing.

While economic growth has been a default policy mantra for most societies for a long time, it is not until recently that the reality of "*un*economic growth" has been realised, validated

and quantified. In short, it is now well-known that economic growth measurements are largely computed by only including positive contributions to GDP and ignoring the growing reality of what economics refers to as "negative externalities", where further "growth" may actually involve more damage to Environment, Society, Economy and Culture than real benefits. Promotion of further economic growth is also unavoidably associated with non-renewable, especially fossil fuel, resource use and its inevitable by-products of global climate change and pollution. This has been documented for many advanced economies, including NZ.

Our Submission is based on a call to take seriously the idea that our city and our nation may already have reached a stage where this policy update for the Greater Christchurch Settlement Pattern may not be what it is designed to be and may in future years be regarded as having been an undesirably risky direction to be following. Given that local government only has limited powers and is subject to priorities set by central government, it could be argued that this exercise will, by default, follow previous government policy that emphasises simple GDP growth

We submit that this Update needs URGENTLY to address the truly long-term needs of the Greater Christchurch area taking account of zero carbon aspirations etc.

We note that the Local Government Act will shortly be amended to restore the statutory responsibility for local government as being to uphold the Four Well-beings, and that the 2019 Budget will be a Wellbeing Budget. The opportunity for a wider approach to planning is soon to be enacted by the current Government. It would be a pity if this well-intentioned Draft before us were to be overtaken by a markedly-different framework for development shortly after it is put into place.

Faced worldwide by what has been termed a Gathering Storm of interconnected high-level risks (climate change, sea-level rise, financial system breakdown, depletion of high-quality resources such as petroleum, pandemics, poverty, starvation, mass migration, escalating tensions between large highly-militarised countries and so on) any confidence in the idea that continuing the previous government's simplistic Business as Usual approach into the long term future is at best naïve and at worst criminally-irresponsible. Our grandchildren deserve better.

The future envisaged in the Our Space draft will not happen in the way it is described. A comprehensive risk-based approach is badly needed, to bring a strong dose of realism into planning. Even though this particular planning exercise is directed only towards allocation of land for the EXTRA housing and business expected in the near future, we see it as vital that it takes into account a much larger frame of reference than has been used in this Draft.

A much broader summary of the overall situation we in New Zealand are experiencing has been provided by the expert work of the Third Sector Organisation (TSO) Wise Response Society (www.wiseresponse.org.nz) in its Submission, in response to a recent discussion paper from Treasury on Resilience and Future Wellbeing. It is included here as a Supplement to our Submission, with the permission of Wise Response.

To summarise our main points, the finer points of detail in the Draft, relating to future "growth needs" for housing, business, land, transport and so on must be firmly-redirected towards Big Picture issues such as those referred to above. If the foundations on which we plan to build our regional future are as unsound as we believe, the risks of continuing along this path of market-led growth will become very clear, probably within a generation. It is perhaps not inappropriate, given the outcomes of the 2011 Earthquakes, to make an analogy with the history of Christchurch's urban development, where putting building foundations on inappropriate soils started in the late 19th Century, with disastrous effects when the 2011 earthquakes happened. Clear thinking about the Future must take centre stage in our planning, in place of rose-tinted dreams of the previous Business as Usual.

We also submit that our work in Sustainable Ōtautahi Christchurch, together with that of Wise Response and many other such groups is typical of the contribution to policy formation by a wide range of Third Sector Organisations (TSOs). These bring together considerable expertise, technical and other, from the wider community, with people working together, most of them voluntarily without payment, for the common good "for us and our children after us". We wish to signal that consultation processes currently followed by government are seldom put forward in a way that encourages respect for meaningful inputs from TSOs.

Due November 30th

Wise Response Society Inc.

SUBMISSION TO TREASURY on the LIVING STANDARD SERIES

Discussion Paper 18/05.

Resilience and Future Wellbeing: The start of a conversation on improving the risk management and resilience of the Living Standards Capitals.

Sir Alan F. Mark, FRSNZ.
Chair,
Wise Response Society Inc.,
alan.mark@otago.ac.nz

October 21, 2018.

A. SUBMISSION

1. The Society strongly endorses the substance and importance of the Treasury's Resilience and Future Wellbeing, Living Standards Series: Discussion Paper 18/05. This paper is generally consistent with the purpose and philosophy that has been promoted by our Society since its establishment in 2013, and it represents the first time we have seen risk and resilience addressed directly by a Government department. We therefore appreciate the opportunity to formally comment on it.

2. We note in the Disclaimer that the paper is "not the Treasury's position on measuring intergenerational wellbeing and its sustainability in New Zealand."

3. We also note the paper's statement (Executive summary) that, to date, much of New Zealand's risk management has been decentralized and siloed, and consequently insufficient attention has been paid to the interconnectedness and cascading nature of risk factors. We concur with this assessment, which was apparent in the Treasury response to our original submission to the Finance & Expenditure Select Committee (Petition 2011/106 of Sir Alan Mark 2015), which pointed to various activities of the branches of government.

4. That Treasury response, however, failed entirely to identify a strategic, coordinated approach to identification and management of risk, which could provide consistency in the data used, and the strategic analysis relied upon. It is therefore most heartening to see this type of approach integral to this discussion paper.

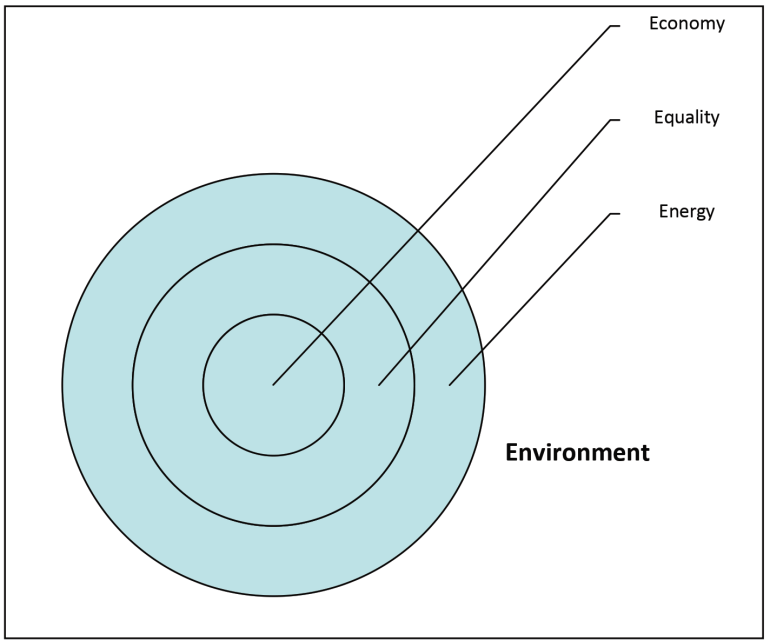
5. Further, we note that the paper recognizes that "[a] more proactive, coordinated and evidence-based approach to risk management and resilience building is required to maintain societal resilience and sustainability in the face of the complex risks we are facing domestically and globally." We certainly endorse this statement.

6. We note, and strongly endorse the statement that "Because of the cross-cutting nature of risks, cross-government coordination is key to strengthening our overall resilience." We endorse a sense of cohesion and widespread capacity to talk across the usual divides and believe shared principles are crucial to dealing with almost every aspect of resilience.

7. We support the Treasury's proposed "Living Standards Framework and its stated objective: "to maximize intergenerational wellbeing." We also endorse the proposed "Four Capitals" framework of interdependent Natural Capital, Social Capital, Human Capital and Financial/Physical Capital, as described, and as the basis for policy development to improve wellbeing for New Zealanders, in both improved risk management and resilience building.

a. A caveat to this support comes from the ecological-economics perspective, and consideration of '4 E's' – Economy, Equality, Energy and Environment. This perspective relies on the insight that, in order for the economy to serve the needs of the people engaged in it, it requires a number of other matters to be considered and accounted for.

b. Furthermore, those considerations are not of equal weight, as the ECONOMY sits within a society whose EQUALITY allows it to continue functioning peacefully. Within this is the ENERGY that enables GDP activity, all of which is derived from and dependent on the ENVIRONMENT - specifically, both functioning ecosystems and resources at a price that the market can bear.



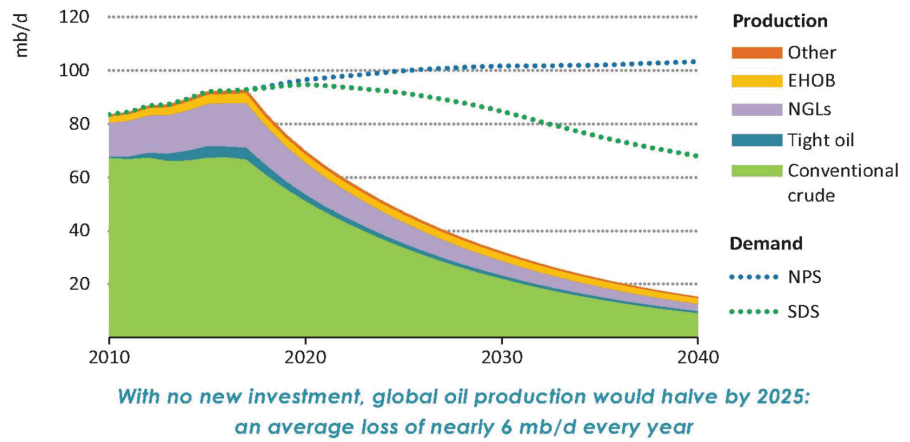
c. Growing in-equality has led historically to a decline in living standards for the majority, and ultimately to conflict and revolution.

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

d. A further caveat concerns that supply-side of fossil energy to our global society and hence, NZ as inextricable part of that society:

i. Changes in the energy supply situation. The economy shows a tight correlation between GDP levels and the energy available to it. The International Energy Association (IEA), in the just-released World Energy Outlook 2018, is forecasting strong demand growth for energy following historical trends (Figure 3.13). At the same time, it is saying that it is very uncertain from just where the investment, that would enable the supply increase necessary to realise that growth will come.

Figure 3.13 ▷ **Oil production with no new investment from 2018 and demand in the New Policies and Sustainable Development scenarios**



Note: EHOB = extra-heavy oil and bitumen; NGLs = natural gas liquids; NPS = New Policies Scenario; SDS = Sustainable Development Scenario.

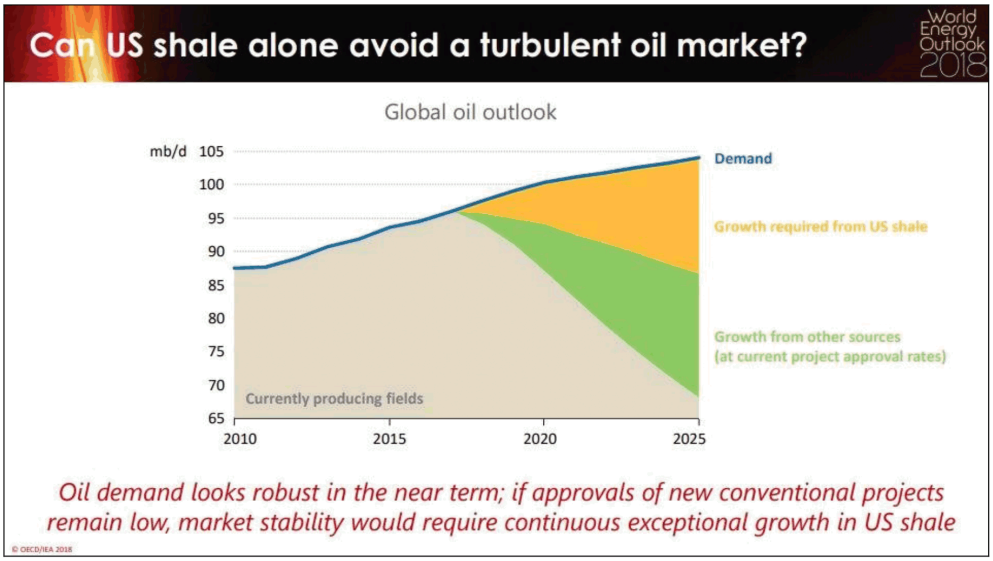
ii. In particular, it is saying that without a pick-up in investment, global supply will start to decline in total volume from around 2020, and HALVE by 2025, based on the decline rates of existing production assets. The second figure below shows that if approvals of new conventional oil prospects remain low, market stability would require "continuous exceptional growth in US shale". Yet experience to date with shale wells is that their useful life is typically limited to a few years.

iii. Even if only partially realised, **the grim implications of this energy scenario, for the Risk and Resilience of society generally, can not be overstated**.

iv. Indeed, it is seeking redress for our refusal to consider as yet the probability and implications of supply side limits to fossil carbon on both the economy and GHG emissions that is the primary objective of our Society and the reason why we have worked so determinedly for a national assessment of risk. This article

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

by Dr Tim Morgan[1] is a helpful summary, in financial language, of the issues regarding energy: http://bit.ly/2BnRMvC



v. There is a growing understanding of the environmental issues we face, concerning climate change and the local environmental impacts of industrial activity (including farming). But there is also the 'Planetary Boundaries' framework, that speaks to other critical factors in the broader risk environment as described by science <https://www.stockholmresilience.org/research/planetary-boundaries.html>.

8. We are impressed by the future strategic planning described for both Finland and Singapore (pp. 36-7), both countries renowned for their successful governance. In this context, New Zealand had a successful Commission for the Future (CFF) in 1979-82, which was dismissed by the Muldoon Government in 1982, and further to this, I was invited, in February, 2017, by the Ministry for the Environment, together with Sir Geoffrey Palmer QC, and Mr Bryce Johnson (in his capacity as Chief Executive of Fish & Game NZ), to present a case for "planning for the future", when we all recommended a Futures Commission or equivalent, be proposed for the then Government's consideration. But we heard no more!

a. The Wise Response Society has discussed whether this would be most effective as a separate legal entity to the Climate Change Commission (CCC). Whilst this would appear logical, we consider it will be politically difficult enough simply to get cross - party agreement for an effective CCC.

b. Accordingly, we recommend that a broad enough remit is given to the CCC that it can take a wider view of the risk environment as we have outlined (including fossil

[1] Cambridge educated Dr Tim Morgan is an energy industry and economics specialist, having worked at investment house UBS Drew Phillips as an oil analyst and then as Head of Research at Tullett Prebon from 2009 to 2013.

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

carbon supply, which is clearly highly relevant to GHG emissions), and how this pertains to discussions around Climate Change mitigation and adaptation.

c. With this perspective, climate warming and destabilisation can be helpfully framed as a 'risk multiplier', as the Pentagon has described it in the past.

9. We support the overall substance of this discussion paper and endorse the stated intent of classifying the risks by their likelihood and impact and encouraging further thinking and discussion as to how to strengthen risk management and resilience building through public policy.

10. We also endorse the recognition of the importance of a multi-stakeholder (whole-of-government plus whole-of-society) coordinated approach to risk management and resilience building among the four interrelated capitals that have been identified.

a. When this issue was discussed with our Patron, Sir Geoffrey Palmer QC, last year, he suggested that we needed to advocate for an approach that integrated deeply with the various branches of government to improve consistency.

b. He suggested that the analysis should be done by an independent body similar to the PCE, and disseminated through the ministries and executive / legislative branches of government via a network of specialists located within the various bodies.

11. Finally, we anticipate and strongly support the stated intent of building on this discussion paper to formulate the basis for a formal government policy in the general field of risk management and resilience, directed at planning for a much more sustainable future for this country.

12. Fundamental to seeing the importance of this is that you 'don't know what you don't know'… We have a situation where our predominant analytical frameworks are almost completely blind to resource depletion and largely unable to properly account for climate change mitigation and adaptation costs. This situation is unacceptable, and must change, if our children are to have any hope of a safe and fulfilling life within a liveable climate.

13. Our review of risk assessments undertaken by other states is that a robust, objective outcome that is ultimately useful for effective policy development, is not always achieved. We of Wise Response therefore request active participation in the process of defining the scope / terms of reference for any body assembled to address Risk and Resilience for New Zealand.

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

B. BACKGROUND: Wise Response Society's Appeal to Parliament

Details of the Society's Appeal to Parliament in 2015 are relevant to our response to the Treasury's current Discussion Paper 18/05, so we present it here:

THE APPEAL
Symptoms too serious to ignore: a call to face up to NZ's critical risks.
Appeal to Parliament for a NZ Risk Assessment.
Petition Presented April 10, 2014.

As demand for growth exceeds earth's physical limits, causing unprecedented risks, what knowledge and changes do we need to secure New Zealand's future wellbeing?

> ***To the House of Representatives:*** *We the undersigned, request that the House:*
> *(1) urge Government to undertake a National Risk Assessment of: Economic Security, Energy and Climate Security, Business Continuity, Ecological/ Environmental Security and Genuine Well-being, and:*
> *(2) that from that Risk Assessment, develop and implement cross-party policies to avert any confirmed threats to future generations of New Zealanders.*

We live on a biologically complex and exquisite planet, home to 7 billion people and a myriad of other unique life forms. We believe it is our human responsibility to maintain the integrity of life support systems and the natural processes which sustain and renew them.

We believe it is also our responsibility to fervently defend the basic right of humans to live secure and fulfilling lives consistent with the UN Declaration of Human Rights. It follows that our generation must satisfy our present material needs in ways that do not diminish the prospect of their realisation for present and future generations.

We are deeply concerned about the links between global climate change, fossil fuel extraction and combustion, and the economy. We consider the evidence is now overwhelming (refer Urgency below) for accepting that human-induced climate change, (including extreme weather events) and impending oil constraints threaten our ability to meet those environmental and social obligations. There are also numerous other unprecedented trends and threats of the present era which, individually or in combination, could destabilise New Zealand's wellbeing.

So far, New Zealand has failed to truly face up to such unprecedented threats to its collective security. Indeed, some policies exacerbate the situation. There appears to be an unwavering faith that technological fixes will be found in time. Yet with scientists saying critical "thresholds" are upon us, the odds of such solutions being found diminish by the day and the consequences of this faith being ill-founded will, in all probability, be disastrous and irreversible.

Therefore, in the name of all our children and grandchildren we, the undersigned, call on the New Zealand Parliament to face up to this situation now by dispassionately assessing risk levels in the following five areas. Then, if found necessary, and with public input, design coherent, robust cross-party strategies and policies to avert these risks and give future generations the very best chance of security, peace, social justice and opportunity for all.

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

1. Economic security: the risk of a sudden, deepening, or prolonged financial crisis. *Such a crisis could adversely impact upon our society's ability to provide for the essentials, including local access to resources, reliable supply chains, and a resilient infrastructure.*

2. Energy and climate security: the risk of continuing our heavy dependence on fossil fuels*. Progressively restricting their extraction, importation and use could promote a switch to genuine renewables and encourage smarter use of existing energy and energy systems while creating better public transportation. Such responses would simultaneously lower GHG emissions.*

3. Business continuity: the risk exposure of all New Zealand business, including farming, to a lower carbon economy. *To mitigate this risk, all businesses could explore both market and job opportunities in reducing the human ecological footprint, finding substitutes for petroleum-based goods and services, increasing efficiencies and reducing waste in food and resources. This would position New Zealand as a market leader in low-carbon technologies and living arrangements.*

4. Ecological security: the risks associated with failing to genuinely protect both land-based and marine ecosystems and their natural processes. *We believe that such protection is essential for both the maintenance of indigenous biodiversity and ultimately, all human welfare.*

5. Genuine well-being: the risk of persisting with a subsidised, debt-based economy, preoccupied with maximising consumption and GDP. *An alternative is to measure progress by means of indicators of community sustainability, human well-being, more equitable wealth-sharing and environmental resilience, and to incorporate full-cost pricing of harmful environmental impacts.*

A risk assessment is the first step in determining the scale, timeframe and interactivity of the risks faced by New Zealand. It would build on international risk assessments such as the World Economic Forum's Global Risks 2013 report. Such a report for New Zealand should then be used as the basis for engaging the public and businesses of New Zealand in informed discussion as to what choices need to be made to buffer New Zealand from such risks and to work towards genuine well-being.

Thirty years ago, widespread public concern about nuclear proliferation led to cross-party support for New Zealand's anti-nuclear legislation. This was a defining moment in New Zealand's history, and was in response to just one single risk. The Land and Water Forum is another example of where New Zealanders have come together to acknowledge, work through and address the risks of deteriorating water quality. Today New Zealand faces numerous additional risks, which are all the more risky for being largely unacknowledged. We believe Parliament should build on its proud tradition of foresighted collective response to risks, and initiate a risk assessment as the first step in achieving a more secure future.

Urgency

The International Energy Agency (IEA) warned in 2013 that less than one-third of proven reserves of coal, oil, and gas could be burnt by 2050 to avoid exceeding 2degC of global warming. Put another way it also states that "If current trends continue, and we go on building high-carbon energy generation, then by 2015 at least 90% of the available "carbon

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

budget" will be swallowed up by our energy and industrial infrastructure. By 2017, there will be no room to move at all". (http://www.guardian.co.uk/environment/2011/nov/09/fossil-fuel-infrastructure-climate-change, IEA (2011) *World Energy Outlook*). The IPCCs latest assessment details impacts and vulnerability associated with climate change predicts future food and water supply insecurities, and calls for both urgent mitigation and adaptation (IPCC 5th WG 2 Adaptation report April 2014).

- The American Association for the Advancement of Science provides an update summary on climate change in "What we know: the reality, risks and responses to climate change" 2014. International negotiations to combat human-induced climate change (Rio 1992, Kyoto 1997, Copenhagen 2009, Durban 2011) reveal that the course of climate diplomacy has increasingly lost touch with the scientific evidence (New Scientist 3843: p3. We can still avoid a 'lost decade' on climate change. Dec 2011). Not only is the widely used target, based on the 4th IPCC assessment report (450 ppm atmospheric CO2 equivalent) now very difficult to achieve, but this limit may be far too high. Scientists such as Jim Hansen argue that the maximum safe level for atmospheric CO2 concentration is 350 ppm (Hansen, J. 2012. Scientific Case for Avoiding Dangerous Climate Change to Protect Young People and Nature. http://pubs.giss.nasa.gov/abs/ ha08510t.html).
- Fatih Birol from the IEA (2011) has also stated that maximum global conventional crude oil production ("peak oil") occurred in 2006. This means that "all liquids" supply will likely steadily decline after an undulating plateau with a growing gap between demand and supply occurring from around 2015. The economic implications of this decline are likely to be serious. See Hirsch, R. L., Bezdek, R. & Wendling, R. 2005. Peaking of World Oil Production: Impacts, Mitigation, & Risk Management, US Department of Energy, and Hirsh R.L, ASPO presentation Vienna. 2012). Only by moving away from fossil fuels can we both ensure a more robust economic outlook and address the challenges of climate change. This process will be a "decades-long transformation that needs to start immediately" (see Murray, J. & King, D. 2012. Climate policy: oil's tipping point has passed, Nature 481: 433–435.).
- Financial inequity is increasing and the world financial system is unable to deliver security; social cohesion is at risk both nationally and globally (see Jackson, T. 2009. Prosperity without Growth. Earthscan. London, UK). In 1998, more than 45% of the globe's people had to live on incomes averaging US$2 a day or less while the richest one-fifth of the world's population has 85% of the global GNP. The gap between rich and poor is widening (see Meadows, D., Randers, J., Meadows, D. 2004. Limits to Growth: the 30 Year Update, Chelsea Green, USA.). The perpetual exponential growth myth is enthusiastically embraced by politicians and economists as an excuse to avoid tough decisions facing humanity (see The Asahi Glass Foundation. February 2012. Environment and Development Challenges: the Imperative to Act, and Lloyd, B. 2009. The Growth Delusion, Sustainablity1: 516-536). The impossibility of this goal in a finite system has been outlined by Albert Bartlet. http://www.albartlett.org/books/essential_exponential.html
- For a readable and integrated summaries of limits and the reasons why we face some difficult decisions and how we might respond see Richard Heinberg's 'The End of Growth' (http://www.postcarbon.org/end-of-growth-chapters) and the Tullett Prebon report 'The Perfect Storm' (http://www.tullettprebon.com/Documents/strategyinsights/TPSI_009_Perfect_Storm_009.pdf) An Emerging Issues paper by the Royal Society of NZ presents evidence

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

from local and global trends suggesting that New Zealand should carefully review its direction of development examines a "green economy" for NZ - low carbon, resource efficient and socially inclusive (Facing the future: towards a green economy for New Zealand March 2014).

APPENDIX: Background to the Wise Response Society Inc:

Purpose of the Society:

1. The purpose of this Dunedin-based but New Zealand-wide Society is to persuade the New Zealand Parliament, Government and New Zealand's civil society in general, to confront and respond effectively to any confirmed threats arising from the question: "As demand for growth exceeds earth's physical limits, causing unprecedented risks, what knowledge and changes do we need to secure New Zealand's future well-being?" Our website: www.wiseresponse.org.nz contains a relatively comprehensive record of the Society's activities since its establishment in March, 2013.

2. During the establishment phase of the Society I gave a series of 12 presentations in the main centres from Auckland to Invercargill. This included details and endorsement of Forgie and McDonald's (2013) proposal for a Genuine Progress Indicator (GPI) for New Zealand, "to provide a measure of national well-being that can be used to complement economic indicators", as a substitute for the traditional GDP measure of the economy (see Forgie, V.E & McDonald, G.W. 2013. Towards a genuine progress indicator for New Zealand. In: Dymond, J.R. ed. "*Ecosystem Services in New Zealand: Conditions and trends*." Lincoln. Manaaki Whenua Press. Pp. 474-94.).

3. The Society lodged a petition to Parliament in April 2014 requesting it undertake a New Zealand-wide Risk Assessment in five key inter-related subject areas - economic security, energy and climate security, business continuity, ecological-environmental security, and genuine human wellbeing. It presented its case to the Finance and Expenditure Select Committee on July 1, 2014[2]. Its case was dismissed by the Government members with a supporting statement from Treasury, which claimed the Society's concerns were being adequately addressed by Government. All three Minority parties on the Select Committee, however, each accepted the Society's case. In this context it is reassuring to now witness their sincerity as members of the present Coalition Government, and also the notable change in the Treasury's current response from that we witnessed in their response to our submission in 2014, under the previous Government.

4. The Society has continued to promote its purpose through submissions on several relevant issues, including resource consent applications and also press releases and several presentations: most recently, in 2018, these were a video presentation to the Engineers for Social Responsibility on: "High expectations for the proposed Climate Change Commission: Will the Government's action plan push us fast enough"; a session on: "Climate Change:

[2] Petition 2011/106 of Sir Alan Mark

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

Why, when and how do we respond", at Otago University's International Science Festival, and a U3A course on: "Finding a sustainable transition path to zero net carbon emissions for New Zealand."

5. In 2016, the Society appealed the Otago Regional Council's draft revised Regional Policy Statement (RPS) Review to the Environment Court, with the assistance of Dr Royden Somerville QC and barrister William Anglin, to seek strengthened recognition in the Statement of the importance of resilience, ecosystem function, risk assessment and precaution, as well as addressing renewable energy and the causes of climate change, not just adaptation to it.

6. We also submitted on the Emissions Trading Scheme (twice), the Resource Legislation Amendment Bill, the Conservation and Environment Science Roadmap, the Productivity Commission (twice), the Child Poverty Reduction Bill, the Zero Carbon Bill, the Taxation Working Group, the Crown Minerals (Petroleum) Amendment Bill, the IPCC 2018 Report, and the Paris UN Negotiations – NZ Priorities. We also facilitated the development a Position Statement and Action Plan for NGOs and civil society, under the name Climate Consensus Coalition Aotearoa (CCCA), which proposed a goal and a process by which to effectively meet the spirit and intent of the Paris Accord of December, 2015. The total of individuals and the membership of organisations which formally endorsed the CCCA statement numbers approximately 330,000 from about 100 organisations.

7. On 16 August, Wise Response Chair, Sir Alan Mark led presentations of the CCCA Position Statement and Action Plan to MPs at Parliament on behalf of its creators and supporters. There were two presentations - one to GLOBE-NZ members (chaired by Dr Kennedy Graham) and the second to an invited audience of all MPs in the Beehive Theatrette, hosted by GLOBE-NZ.

8. Professor Jonathan Boston and our Patron, Sir Geoffrey Palmer QC, as well as representatives of five other NGOs, who helped develop the CCCA statement, spoke in support. These included James Drew-Young (GenZero), Adelia Hallett (Forest & Bird), Dr Roger Blakeley and Sue Kedgley (Wellington R.C. & Local Govt NZ), Gay Keating (Ora Taiao) and Katherine Peet (Network Waitangi Otautahi/One Voice Te Reo Kotahi). Concluding remarks were provided by Sir Geoffrey Palmer QC (for WR), and Tracey Martin (NZ First), David Parker (Labour) and Kennedy Graham (Greens), for GLOBE-NZ.

Secretary, Dugald MacTavish
secretary@wiseresponse.org.nz
Wise Response Incorporated Society
alan.mark@otago.ac.nz
Chair, Sir Alan Mark, FRSNZ
205 Wakari Rd., Helensburgh, Dunedin, 9010

SPOKES
canterbury cyclists association

November 30 2018

RE: Greater Christchurch Partnership "Our Space"

SUBMISSION FROM SPOKES CANTERBURY

Spokes Canterbury is a local cycling advocacy group with approximately 1,200 members that is affiliated with the national Cycling Action Network (CAN). All submissions are developed online and include member's input. Spokes is dedicated to including cycling as an everyday form of transport in the greater Christchurch area.

We would like the opportunity to appear at any public hearing that is held to consider submissions on these projects. Should there be an officer's report or similar document(s) we would appreciate a copy(s).

If you require further information or there are matters requiring clarification, please contact our Submissions Convenor Dirk De Lu in the first instance. His contact details are:

4 Tisbury Lane
Cracroft, Christchurch 8022
Phone
Email:

Don Babe
Chairperson, Spokes Canterbury

Our Space, Authority, Credibility and how to Strengthen both

Just how much weight will this plan carry? It is presented to respond to the National Policy Statement requirement to prepare plans to meet growth needs. Just what breadth that supports and binding commitments it entails is not clear.

Making the plan a helpful reference document increases its value to those who implement plans, elected officials and the general public. Having it make clear the gaps which will undermine implementation of Our Space can increase successful outcomes.

Our Space cites a number of local, regional and central government plans and policies both as its authority and how it will be implemented. Many of the prescriptions in Our Space are not found in in those plans. Within some of the plans some vital elements from Our Space are mentioned as possible future actions, or not mentioned at all. Vital roles such as 10 minute neighbourhoods and complete cycle networks, to name a few, are not developed, implementation scheduled too late to properly support Our Space and/or not funded.

To increase the likelihood for implementation of all of Our Space's facets put in links to the plans which offer mechanisms to make Our Space succeed. Include the document and page number(s) which support the Public Transport routes shown, or the airport noise zone restrictions, the urban boundaries; water shed protections areas, etc.

Where the plan offers a suggestion not directly committed to by other documents, such as the 10 Minute Neighbourhoods or complete cycle networks, make that clear and call for support. This can help the elected decision makers to prioritise policy making and funding to implement the plan's contributions.

There are a great many plans coming from various government entities. The public spends considerable time attempting to participate through the consultative process. Too often plans mention actions which the public interprets as commitments only to be disappointed. The usefulness of planning and the credibility of government is thus undermined. People are discouraged from participating and democracy is not well served.

Redrafting Our Space to make clear what has the legislative and policy backing to be implemented and what still needs to be done to assure implementation of all the 'promises' made can motivate citizen democracy. It may also improve the accuracy of media reporting.

As presented the public is likely to feel cheated should the many good aspects of the plan remain unrealized.

Our Space, the Good and what's needed

Building higher density housing and commercial outlets on public transport routes makes sense. Providing people with "10 minute neighbourhoods" where most of what we need is within a short walk or cycle makes sense. There are some good ideas here. Please, expand and apply them better.

The "10 Minute Neighbourhood" is a great bit. Make sure these neighbourhoods are close together and well connected by cycle networks. Rather than thinking of motorized transport people will discover the convenience of cycling to school, work, shopping. Once fit from short trips they will be able to venture out to adjoining areas and beyond. Make it easy to cross town by bicycle, the 20-40 minute community. Using a car will become a second or even third choice.

The plan needs to mandate cycle networks both within and between neighbourhoods and towns. Well connected off road and quiet streets options can attract the 'interested but concerned' cyclists flocking to Christchurch's Major Cycle Routes.

Thank you for stating that affordable housing requires houses at $350,000 or less and rents at $200 per week or less. These levels are already exceeded. Streamlining of regulations will offer some relief, but it is delusional to think it will bring costs down to these levels. Opening up new land on the fringes may offer some relief, but watch the prices rise when those developments are served by convenient PT. Current efforts by government and non-profit entities have been unable to meet needs and there is nothing in this plan which will significantly improve their efforts.

Thank you for recognizing that we can't rely on single occupancy vehicles, sovs, to meet our transport needs. Note that electric cars, autonomous cars, Uber and the like are likely to be primarily sovs. They don't have to be, but current vehicle use does not have to be and primarily is. Inertia and habit are powerful forces to overcome. The plan is weak on how they will be.

The land use proposed in the plan will continue the habit of car use as more people will be living far from employment and from friends and family. People could take the bus, but without far greater measures to build behaviour change into the plan a great many people won't. Drop greenfield developments which will only increase sovs. Make sure higher density urban development offers features such as the 10 minute neighbourhood and affordability to attract residents.

The plan mentions adapting to technological changes. Working from home is already a reality. With autonomous cars a person can work while sitting in traffic without the distraction of other riders and stops. Buses will remain 'loser cruisers', sovs the preferred mode.

Thank you for seeking to move people on to Public Transport, PT. PT is good for longer trips and for those unable to use active modes. It is also expensive, carries a large carbon footprint even when using more sustainable fuels like electricity and as proposed supports urban sprawl.

PT can be integrated with active modes or with sov's. It is misleading to use it as even a partial tick box item by characterizing it as an active mode. Especially when the plan calls for stops to be convenient to high density housing, employment and shopping.

(*PT is a vital part of the transport network but it has a big price tag. Can we afford urban planning focused on sprawl with PT as 'the solution' or should we plan for affordable*

density? https://www.theguardian.com/us-news/2018/nov/20/new-york-city-subway-bus-death-spiral-mta-fares)

The costs of PT will be borne by tax and ratepayers. They are the ones who should reap the increases from land values along the routes. Please explore 'value capture' and make this a requirement in the plan.

(*Basics on Value Capture:* https://www.lincolninst.edu/key-issues/value-capture-property-tax

Central Government looks towards capturing gains for the public: https://www.stuff.co.nz/business/102122026/finance-minister-grant-robertson-is-investigating-property-value-capture-tax-to-fund-rail

Value Capture's role in funding infrastructure: https://www.simpsongrierson.com/articles/2018/could-value-capture-financing-solve-new-zealands-infrastructure-needs)

Better yet don't open up greenfield development. Build housing where the jobs are. Provide the 10 minute neighbourhoods. With the population predictions, the cost of infrastructure and the need to preserve our ag land and resources putting high density development where the jobs are makes sense. Continuing to sprawl is simply not affordable or sustainable.

A real risk in this plan is that 'affordable housing' will be that which is not near PT or served by the cycle network. Many new developments apply restrictions or requirements on sections size, building type and use. How will this be balanced against affordability, the 10 minute neighbourhood and other requirements needed to make the plan work?

As proposed this plan implements the worst aspects of the Land Use Recovery Plan and will increase rates while enriching private individuals in the process. This is bad policy which will not deliver on its promises. Failing to correct the deficiencies is irresponsible governance.

Plans Fatal Flaws

Sea level rise is mentioned, but not actually dealt with. With climate scientists predicting anywhere from a meter to 3 meters rise by 2100 we need a plan which does not build on land which will be inundated. (*Billions at risk* https://www.newsroom.co.nz/2018/11/20/329590/125000-buildings-worth-38bn-at-risk-from-first-1m-sea-level-rise-draft-report)

Insurance Cover Costly and not available for at risk properties https://www.stuff.co.nz/business/108931621/reserve-bank-voices-fears-climate-change-will-render-homes-uninsurable

Otago Regional Council considers abandoning community https://www.odt.co.nz/news/dunedin/abandoning-henley-voiced?utm_source=The+Bulletin&utm_campaign=ef5776a6eb-

EMAIL_CAMPAIGN_2018_03_01_COPY_01&utm_medium=email&utm_term=0_552336e15a-ef5776a6eb-533802933)

It is neither sustainable nor responsible to make long term plans without factoring in impacts which subject those plans to failure. As drafted this plan condemns the Greater Christchurch area to losing much of its infrastructure, housing, industrial and commercial investment within the next 50 years or less.

The plan's goal to provide housing must also factor in the housing to be lost to sea level rise and whole areas lost to occasional inundations.

Planning for a future which some people deny and most wish not to consider is challenging. Not to do so is a failure of governance both elected and institutional.

The plan calls for 55% new greenfield development. Much of this land is agricultural. We need to reduce food miles, increase local sustainability and agricultural export earnings. How will conflicts at the face between agricultural activities and urbanisation be addressed?

By planning for high density housing where the jobs are we can preserve more of our agricultural lands. We are fortunate to have the Port Hills, beaches and watershed reserves. Easy transport options serving those areas can increase the acceptability of high density and decrease sprawl.

Economic wellbeing predicated on growth has limits and our world is up against them. This plan emulates failed urban planning based on over consumption. It will not meet basic needs for the majority, enhance the environment or achieve local sustainability.

(*Limits to Growth 30 year Update* *http://donellameadows.org/archives/a-synopsis-limits-to-growth-the-30-year-update/*)

The draft plan must be wholly redrafted and consultation reopened.

A Few Resources to Guide the drafting of a New Plan

Some of these suggestions offer practical inspiration for achieving a plan which can meet our needs while greatly improving quality of life. Others offer changes based on this plan.

Resources for Making an Exemplary Plan

A few suggestions from the engineering community
https://www.newsroom.co.nz/2018/11/22/332986/engineers-name-10-climate-priorities

And this on the cycle friendly suburb can help develop 10 minute neighbourhoods
https://www.theguardian.com/cities/2018/may/16/welcome-cycle-heaven-moved-family-netherlands-houten-utrecht

Suggestions for minor improvements

Making revitalization of urban areas affordable https://www.strongtowns.org/journal/2018/10/22/can-you-have-revitalization-without-gentrification-derek-avery-thinks-so?utm_source=pardot&utm_medium=email&utm_campaign=topmaturejab&utm_content=102218can-you-have-revitalization-without-gentrification-derek-avery-thinks-so

Another approach to PT https://medium.com/land-buildings-identity-and-values/greater-christchurchs-future-the-fat-banana-aba0402f16a4?fbclid=IwAR3bwcguU9sAfaALH9Q_CZKGdHnqUsMx1wIegTd5266eFCClXeF2Ua4IaVo

On Rail and no urban development on ag land https://thespinoff.co.nz/society/24-11-2018/a-new-plan-for-christchurch-rail/?fbclid=IwAR02pJfH_q_EnCLSJmFb6Dkp0uP1Za1bpikBhnkmgczKug4tBZWxTqMA7SY

A novel approach to urban design https://www.youtube.com/watch?v=9cudn_vSdCY

On Consultations and Submissions

In too many instances comments made in submissions are ruled as 'out of scope' or not supported by legislation. In doing so plans and projects have gone ahead to implement and institutionalize their shortcomings, fatal flaws and negative impacts on the policies they allegedly implement. Thus failing the community's they are meant to serve and wasting millions. The benefits consultation could provide are defeated.

This draft plan seeks to guide development in the Greater Christchurch area for decades to come. With a writ so large to fail to apply the insights and suggestions from consultation is at best a dangerous nonsense. Doing so may make planning easier, please some interest groups allow simplistic tick box evaluation and facilitate the public relations task of selling the plan but, the eventual and inevitable failures place an unendurable burden on current and future generations. We cannot afford more 'Business as Usual approaches with a few tweaks' to pass for responsible planning and development.

Too often legislative support is lacking for the needs and concerns the public rightfully raises. This plan needs to point out those shortcomings. Responsible local bodies will seek ways to achieve just and responsive outcomes. They will represent their constituent's needs to central government to achieve the necessary legislative support. All problems are identified, the public informed and empowered and robust comprehensive plans adopted.

Submission No: 070		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Brendon	
Last name	Harre	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Amberley	
Postcode	[redacted]	
I am completing this submission	For myself	
Hearings		
Do you wish to speak to the hearings panel?	I wish to speak at the hearings	
Phone number	[redacted]	
Preferred location to be heard	Christchurch City	
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat agree	
Comment	I agree with growth north into Waimakariri and South West into Selwyn but I think new housing should be integrated with new rapid services. I would like to submit the following paper on how I believe this could work. https://medium.com/land-buildings-identity-and-values/greater-christchurchs-future-the-fat-banana-aba0402f16a4	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	
Comment		
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment	New housing areas should be a mix of market rate, affordable housing (KiwiBuild) and state housing. I believe an Urban Development Authority should be used. This will require a close and constructive relationship between the Greater Christchurch Partner councils and Central government. I would like to submit the following paper on my thoughts about this. https://medium.com/land-buildings-identity-and-values/building-at-pace-and-scale-in-greater-christchurch-b07b326dc473	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Agree	

Comment	Greater Christchurch is a common labour market. I would suggest Greater Christchurch read the works of Alain Bertaud for the land-use implications of this fact.
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Somewhat agree
Comment	This may require further monitoring and assessment. See my above point about Alain Bertaud
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Somewhat agree
Comment	I did not understand what the rationale was for the decline in growth from 2023 for all growth scenarios.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat agree
Comment	Densification requires rapid transit to support it. Greater Christchurch needs more concrete plans for implementing rapid transit. This plan needs to be implemented in the short to medium term.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	Cooperation with central government's proposed UDA process.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	My preference is that Greater Christchurch ends the housing and transport monopoly of automobile dependence. I elaborate on this point in the following paper, which I would like to submit for consideration. https://medium.com/land-buildings-identity-and-values/what-if-tradies-preferred-trams-to-utes-5e29ba4988a6
Attachments	

Submission No: 079

30 November 2018

Our Space Consultation
Greater Christchurch Partnership
PO Box 73012
CHRISTCHURCH 8154

Email: ourspace@greaterchristchurch.org.nz

SUBMISSION: Our Space 2018-2048 – Greater Christchurch Settlement Pattern

NAME OF SUBMITTER: KiwiRail Holdings Limited (KiwiRail)

ADDRESS FOR SERVICE: PO Box 593
WELLINGTON 6140
Attention: Rebecca Beals

Email: Rebecca.Beals@kiwirail.co.nz
Phone: (04) 498 3389

About KiwiRail
KiwiRail Holdings Limited ("KiwiRail") is the State Owned Enterprise responsible for the management and operation of the national railway network. This includes managing railway infrastructure and land, as well as operating rail freight and long distance passenger services within New Zealand.

KiwiRail Holdings Limited is also the Requiring Authority for the designated corridors of the Main North Line, the Main South Line and the Midland Line, all of which pass through the area subject to Our Space 2018-2048: Greater Christchurch Settlement Patter Update ("Our Space"). KiwiRail therefore has an interest in protecting its ability to continue to operate, maintain and enhance this nationally significant network into the future. While the rail network is predominantly used for the movement of freight, there are also two passenger services that pass through the area daily, being the Coastal Pacific and the Tranz Alpine.

Train movements through the Our Space area in the last five financial years are outlined below, noting that natural events such as the Kaikoura Earthquake in November 2016, the fire at Cass in February 2017 all had significant impacts on train numbers along these routes:

Track	Financial Year	Total
Midland Line (Rolleston to Springfield)	2013	4975
	2014	5782
	2015	5241
	2016	4327
	2017	4161

Main North Line (Addington to Rangiora)	2013	4251
	2014	3946
	2015	4127
	2016	4235
	2017	1733
Main South Line (Middleton to Hornby)	2013	8367
	2014	9304
	2015	8304
	2016	7261
	2017	7302

The commentary below is in relation to the Our Space notified by the Partnership for submissions, specifically in relation to those elements which can impact on or interact with the rail network.

Hearing
KiwiRail wishes to be heard in support of this submission, with the preferred location being Christchurch.

Our Place
KiwiRail support the Principle and Strategic Goals identified, in particular around clear boundaries being defined and maintained; having an efficient, reliable, safe and resilient transport system; that infrastructure, including transport, is resilient and comprehensively integrated with land use planning; and that strategic infrastructure, both existing and planned, is protected. The rail network is a strategic national network and the ability to continue to operate this efficiently is supported, along with the protection of this from inappropriately located development resulting in safety or efficiency compromises.

KiwiRail support that there is reference to the Government Policy Statement on Land Transport ("GPS"), recognising that there is a strong focus on integrating land use planning and land transport, which in the new GPS includes extensive consideration of the rail network. Further, there is identified in the GPS that an update is likely and that this will further expand on the role of rail nationally.

Our Growth Needs
The discussion on business growth needs notes that significant growth is expected in the next 30 years, including in relation to tourism. KiwiRail are a significant service provider in the tourist market with the provision of two long distance passenger services that have strong international recognition in the Our Space area, which have both recently been publicly announced as offering additional capacity. Further, business and industry development will likely necessitate the movement of additional freight, which may also rely on the rail network. Growth in both business and industry and tourism is anticipated therefore to result in some increased demand on the rail network.

While Our Space recognises that there is already provision within some areas for meeting the medium and long term needs, KiwiRail wish to ensure that this area is appropriately protected and developed, along with appropriate links to the existing transport network to ensure that opportunities around the option to use rail are not compromised and neither is the existing rail function.

Our Challenges
A large part of the discussion on challenges as it relates to KiwiRail, is around the management of reverse sensitivity effects in light of delivering new dwellings through redevelopment and intensification, and the integration of land use and transport.

Reverse sensitivity is a real issue for KiwiRail, and we work closely with the Councils whose districts we pass through nationally to ensure that this effect is recognised and appropriate standards are implemented through District and City Plans to protect communities and ourselves. While Our Space does not in itself change District or City Plans, it will strongly influence them, and therefore support is provided by KiwiRail to ensure any development is appropriate, that reverse sensitivity effects are not generated, and that land use does integrate with the existing rail network.

Our Plan
5.1: Greater Christchurch's settlement pattern
KiwiRail note that Our Space comments at 5.1 "*Underpinning this settlement pattern approach is the vision for a transformation of the transport network that fosters much greater public and active transport usage, and reduced reliance on the private vehicle".* KiwiRail are unsure if this is intended to include the rail corridor or not, however will work with the Partnership as required to facilitate deliver of this vision where possible.

Our Space goes on to recognise that transport has a key role in having urban form and creating liveable urban areas. KiwiRail wish to ensure that this recognition extends to the wider benefits that transport provides around business and industry, rather than just liveable urban areas, however agree with the general recognition that transport is key.

There are a number of areas identified for urban growth, many of which the existing rail corridor passes through. Specific reference is also made to areas like the I-Zone at Rolleston benefiting from improved connections across SH1. The rail corridor also services this area, and improvements to the roading network, particularly grade separation of existing level crossings, will also lead to benefits for the rail network and the service this provides to industry in this area.

As a general approach, KiwiRail does not oppose development adjacent to the rail corridor, traditionally we have only sought that this be appropriately undertaken to recognise the location of the rail corridor. This has been through aspects such as boundary setbacks and the requirement for noise and vibration mitigation for structures containing sensitive activities. Further, KiwiRail takes an active interest in proposals that increase the use of existing level crossings to ensure that these continue to be safe, and that no new level crossings are formed. KiwiRail work with our customers and potential customers to ensure that use of the rail network is also facilitated where possible, recognising the benefits in reducing traffic volumes on the road network that can result, along with working with roading agencies as they develop their networks to ensure that safe outcomes for the rail network are achieved.

KiwiRail do not anticipate changing this general approach and while we note that Our Space is not a City or District Plan, it is noted that this could influence future Plan reviews and changes, and therefore KiwiRail support the provisions within Our Space as relevant to ensuring appropriately located and designed development in proximity to rail.

Further improvements to the transport network are identified at a high level, noting that financial support from Government is likely to be required. KiwiRail would support

clarification around what the Partnership is intending in relation to improvements other than the rapid transit services discussed, and wish to ensure that KiwiRail is a party to the discussions around design and delivery of these services where there is implication for the safe and efficient operation of the rail corridor.

5.2 Christchurch City
Specifically for Christchurch City, Our Space highlights options for repaid transit, including the potential for light rail. While KiwiRail does not operate light rail services, or provide commuter rail services, KiwiRail will work with the Partnership where possible to assist in any discussions around services that may impact on the rail network.

KiwiRail have already been working with Councils in the Greater Christchurch area for the use of the rail network as a shared path facility where this can be safely accommodated without any adverse effects on the use of the rail network by trains, and will continue to do so.

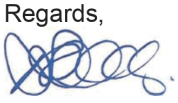
5.6 Transport and other infrastructure
KiwiRail support the recognition of the strong relationship between transport and land use, and therefore that all decisions are required to consider the influences on each other.

Specific recognition of the role of freight, including in relation to the Lyttleton Port inland port facilities, is also supported by KiwiRail. Along with the relevant State Highways, the rail network is a key strategic freight route. As growth occurs, reliance on the network will likely increase. The ability therefore to improve the rail network to support this growth, through for instance additional track installation or alternative alignments, being recognised within Our Space would be supported. As noted above, while the practical ability to do these works is addressed through City and District Plans, these planning documents take a strong lead from strategic documents like Our Space, and therefore the recognition that growth may require changes to the rail network in Our Space will facilitate KiwiRail in ensuring that this recognition flows through to planning documents. KiwiRail can therefore contribute to achieving the vision in Our Space as we continue to support the area and our customers.

5.7 Why is this our proposed approach?
The last paragraph in this discussion notes that *"Further more detailed assessment of these future growth areas will be required, and undertaken as part of district plan reviews, and can address any new requirements relating to managing risks of natural hazards and mitigating impacts on versatile soils.'* KiwiRail would support that the be expanded to include consideration of how the future growth areas will integrate with land transport.

Thank you for the opportunity to provide this submission on Our Space. Should the Partnership have any questions, please don't hesitate to contact me.

Regards,



Rebecca Beals
RMA Team Leader
KiwiRail

Submission No: 065

Submission Form

Greater Christchurch Partnership
Te Tira Tū Tahi
One Group, Standing Together

HAVE YOUR SAY BY 30 NOVEMBER 2018

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

How to make a submission

Online: Make a submission using the online submission form at www.greaterchristchurch.org.nz/ourspace

Email: ourspace@greaterchristchurch.org.nz

Post: Our Space consultation, Greater Christchurch Partnership, PO Box 73012, Christchurch 8154

Hand deliver: Civic Offices, 53 Hereford Street

SUBMITTER DETAILS

Name: Scarborough Hill Properties Ltd (Ruth Kendall & Ewan Carr)
Address: C/- Adderley Head
15 Worcester Boulevard, Christchurch
Attention: Juliette Derry
Email: juliette.derry@adderleyhead.co.nz

I am completing this submission: ☐ For myself ☐ On behalf of a group or organisation

If you are representing a group or organisation, how many people do you represent? _____

HEARINGS

Hearings are planned for February 2019.

Do you wish to speak to the hearings panel?

☑ Yes, I wish to speak at the hearings ☐ No, I do not wish to speak at the hearings

If you wish to speak at the hearings, please indicate your preferred location to be heard and provide a contact number.

Preferred location: ☑ Christchurch City ☐ Rangiora ☐ Rolleston

Contact number:

Page 316

Submission Attached

ADDERLEY HEAD
ENVIRONMENTAL LAW SPECIALISTS

SUBMISSION ON DRAFT OUR SPACE 2018-2048 GREATER CHRISTCHURCH SETTLEMENT PATTERN UPDATE

To:	**Our SPACE Consultation** Greater Christchurch Partnership PO Box 73012 Christchurch 8154
Submitter:	**SCARBOROUGH HILL PROPERTIES LIMITED** C/- Adderley Head, Attention: Juliette Derry
Proposal:	Our SPACE 2018-2048 Greater Christchurch Settlement Pattern Update – November 2018

15 Worcester Boulevard, Christchurch 8013 | Tel 03 353 0231 | Fax 03 353 1340 | www.adderleyhead.co.nz

Submission on the
'Our SPACE 2018-2048 Greater Christchurch Settlement Pattern Update'

Name of submitter and background

1 This submission has been prepared on behalf of Scarborough Hill Properties Limited (SHPL) and its Directors and Shareholders Ms Ruth Kendall & Mr Ewan Carr.

2 SHPL owns a property at 60 Godley Drive, Scarborough, Christchurch (the 'Property').

3 The Property falls partly within the Rural Port Hills Zone under the Christchurch District Plan and is located outside and immediately adjacent to the boundary of the existing urban area for Christchurch (identified on Map A – Greenfield Priority Areas ('Map A') of the Canterbury Regional Policy Statement 2013 ('CRPS')). The Property also shares a boundary to the south with the CCC Recreational Farm Park.

4 The Property is approximately 27 hectares in size. The Property is zoned in part residential and also has resource consent to develop pockets of the Property for residential use. It is intended to further develop the Property in the future.

Introduction

5 The draft Our SPACE 2018-2048 Greater Christchurch Settlement Pattern Update (the 'Update') has been created for the purpose of meeting the requirements of the National Policy Statement on Urban Development Capacity 2016 ('NPS'), to produce a future development strategy and to demonstrate sufficient, feasible development capacity in the medium and long term for greater Christchurch.

6 SHPL is particularly interested in the preferred locations for housing growth identified in the Update in relation to Christchurch city.

Detail of submission

7 The Update is a foundation document which will be implemented through resource management planning processes, into the CPRS and the greater Christchurch district plans (Christchurch, Selwyn, Waimakariri).

8 While the Update is not a formal (legal) planning document, it plays a key role in supporting and setting planning directions which are implemented or given effect to through the provisions of the CPRS and district plans.

9 The Update anticipates a return to stronger levels of demand for higher density housing in Christchurch city and recognises and supports opportunities to redevelop and intensify existing urban areas in Christchurch city to meet housing needs.

10 As such the Update is aligned with CRPS and Christchurch District Plan in terms of the locations for future residential development opportunities to occur.

11 SHPL is a landowner that has aspirations to develop its Property located on the boundary external to the existing urban boundary.

12 SHPL is concerned that the Update builds on and supports the inflexible approach contained in the CPRS and Christchurch District Plan in relation to urban residential development occurring within the existing urban areas and greenfield priority areas.

13 SHPL is concerned that the Update does not provide adequate recognition of potential issues which give rise to uncertainty in respect of whether the opportunities available for residential redevelopment and intensification within Christchurch City will be realised over time. In particular;

(a) The key issues outlined in the Capacity Assessment which supports the Update (Housing and Business Development Capacity Assessment 2018-2048) include the following issue;

> "the current and future commercial feasibility of providing housing (standalone houses, townhouses and apartments) in locations identified in district plans is uncertain, especially in areas of the City where redevelopment of sites to provide medium and higher density housing is envisaged".

(b) The Update relies on a shifting demographic and a growing market demand for high density, smaller housing types such as apartments and townhouses. However, with changing population growth and demographics there is necessary uncertainty in relation to this identified market demand, particularly in the context of a 30 year time frame.

14 In contrast SHPL is an owner of land, immediately on the boundary of existing urban land, committed to redeveloping its land to accommodate housing need. As such, this Property provides greater certainty than the other locations. Accordingly, notwithstanding that SHPL's land is outside the existing urban boundary, it potentially presents a greater prospect for accommodating housing growth compared with other land in Christchurch city in identified preferred locations.

15 Further, SHPL's land is ideally suited to a significantly less intensive form of housing development to that anticipated and supported by the Update and as such provides scope to cater for a wider range of future housing needs/demand.

16 The Update allows for some flexibility, in applying margins of feasible development capacity over and above projected demand, to allow for situations when developments are not

bought to the market. However the potential for development supported by the Update is primarily focused on intensification of existing urban areas.

17 SHPL is concerned that the Update lacks the flexibility to adequately accommodate all needs and/or future market changes.

18 Further to the above, SHPL considers that the Update, should allow for a more flexible approach to accommodate change, particularly in respect of property owner (or developer) intention and market demand, and consequently allow for consideration of urban residential development occurring in appropriate locations outside of the existing urban boundary and identified greenfield priority areas.

19 Accordingly, SHPL contends that consideration should be given within the Update to the potential for housing needs to be accommodated over time outside the existing urban area boundary (where appropriate). This would provide greater flexibility and would better reflect the flexible nature intended for future development strategies by the NPS. In particular, the NPS guideline provides that future development strategies should be "*...flexible enough to respond to change, for example, in demand or landowner intentions.*"[1]

Amendment Sought

20 SHPL requests the Update be amended to include an additional sentence, in the table on page 21 which describes what urban growth will look like in different areas of Christchurch City. In particular, SPHL requests the following sentence be included immediately before the final sentence in the description of the "Suburbs and Outer Urban Areas":

> *Residential zones elsewhere are reviewed and expanded into locations where residential activity is commercially viable, offers greater efficiencies in resource use, and can achieve high standards of liveability.*

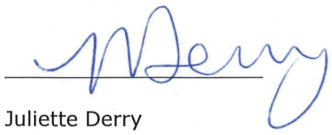
Conclusion

21 For the reasons outlined above, SHPL seeks that the Update be amended to acknowledge that other land, outside of the existing urban boundary and greenfield priority areas, might also be suitable for development to accommodate housing growth.

22 SHPL wishes to be heard in support of this submission at the hearings planned for February 2019.

Dated 30 November 2018

[1] Ministry for the Environment and Ministry of Business, Innovation and Employment – 'Introductory Guide to the National Policy Statement on Urban Development Capacity 2016' p28



Juliette Derry

For an on behalf of Scarborough Hill Properties Limited

Address for service:

C/- Adderley Head
15 Worcester Boulevard, Christchurch 8013

P +64 3 353 0231
F +64 3 353 1340

Contact person: Juliette Derry
E: juliette.derry@adderleyhead.co.nz

Submission No: 050

Submission Form

Greater Christchurch Partnership
Te Tira Tū Tahi
One Group, Standing Together

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

To:	Greater Christchurch Partnership
Submitter:	Grant Poultney
Contact:	Jo Appleyard
Address for Service:	C/- Chapman Tripp Attn: Jo Appleyard 5th Floor, PwC Centre 60 Cashel Street PO Box 2510 Christchurch 8140 T +64 3 353 0022 E jo.appleyard@chapmantripp.com

1 Grant Poultney wishes to be heard in support of this submission.

2 Grant Poultney owns a 4.2 hectare property at 353 Worsleys Road. In 1995 an area of the Worsleys Road rural zone was rezoned by CCC to Living Hills B. A strip of land along the top of Worsleys Spur was included in the Living Hills B zone. The District Plan rules allowed for development to a minimum lot size of 3000 square metres.

3 Grant Poultney's property was omitted from the Living Hills B zone in error. This Update process provides an opportunity for the error to be rectified by including the property within the urban limit.

4 There have been various undertakings given to Mr Poultney by CCC that the error would be rectified through subsequent plan change processes. In particular CCC wrote to Mr Poultney on 26th June 2000 confirming that there had been a drafting error and that Council would eventually "get onto reviewing the plan".

5 Again on 20 July 2012 the Council wrote to Mr and Mrs Poultney stating that there had been a "drafting error" and that the plan change "has never been actioned".

6 The error was then compounded because the CCC District Planning maps were used to generate map A to the Regional Policy Statement (*RPS*) showing the limits of the urban area. This means Mr Poultney's property is outside the urban limits shown on map A on the RPS.

7 The RPS, Chapter 6 Recovery and Rebuilding of Greater Christchurch contains a very directive Policy framework including Policy 6.3.1(4) which in practical terms prevents any urban development outside the urban limit in map A.

8 Both Environment Canterbury and CCC consider that without an amendment to RPS map A and a CCC plan change there is no practical ability to correct the error. In particular Map A of the Regional Policy Statement needs to include Mr Poultney's property within the urban area of Christchurch.

9 Mr Poultney therefore requests that during this Update process his property at 353 Worsleys Road is identified as within the urban limit and therefore suitable for residential activities. This will enable the appropriate changes to the RPS and ultimately the District Plan to be made.

Dated: 30 November 2018



Jo Appleyard

For Grant Poultney

		Submission No: 089
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Chris	
Last name	Morahan	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Christchurch	
Postcode	[redacted]	
I am completing this submission	For myself	
Hearings		
Do you wish to speak to the hearings panel?	I wish to speak at the hearings	
Phone number	[redacted]	
Preferred location to be heard	Christchurch City	
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat disagree	
Comment	The only reason there is such high demand for housing in Selwyn and Waimakairi is because our transport system has artificially distorted the market by incentivising commuting long distances by car and disincentivising commuting by walking, cycling and public transport. There is increasing recognition of these market distortions, such that they will likely be resolved (or at least reduced) in the coming decade through GPS time-distance charging for driving, improved public transport, and far better environments for walking and cycling. This, combined with removal of unnecessarily restrictive planning rules that currently make dense development all but impossible, will lead to far higher demand in the inner city and along public transport corridors, and much lower demand in outlying auto-centric suburbs like Rolleston and Rangiora.	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Neither agree nor disagree	
Comment	Agree with intensifying the inner city and public transport corridors. Disagree with more auto-centric sprawl.	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment	Unsure. I'm not sure home ownership should be a goal in itself. Overseas far higher percentages of people rent for their whole lives and still live perfectly satisfactory lives. I think as long as we humanise our laws around renting (which seems to be gradually happening) there's no reason why renting a house long-term should be any worse than owning it.	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		

Agree/disagree	Agree
Comment	I don't think "direct" is the right term though. The plan should just seek to allow commercial development everywhere it can, and let businesses gravitate to wherever is the best spot for them.
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Agree
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Agree
Comment	Predicting the future is always uncertain - these seem like the best information we have at the moment.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	Very very strongly agree with this. The only thing I'd add is that the railway lines should possibly be in there as key future public transport routes. I'm yet to see any evidence that strongly counts them either in or out.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	
Attachments **Talking Transport Blog Article.docx**	

Submission No: 089
Attachment 1

Our Space 2018-2048: Greater Christchurch Settlement Pattern Update

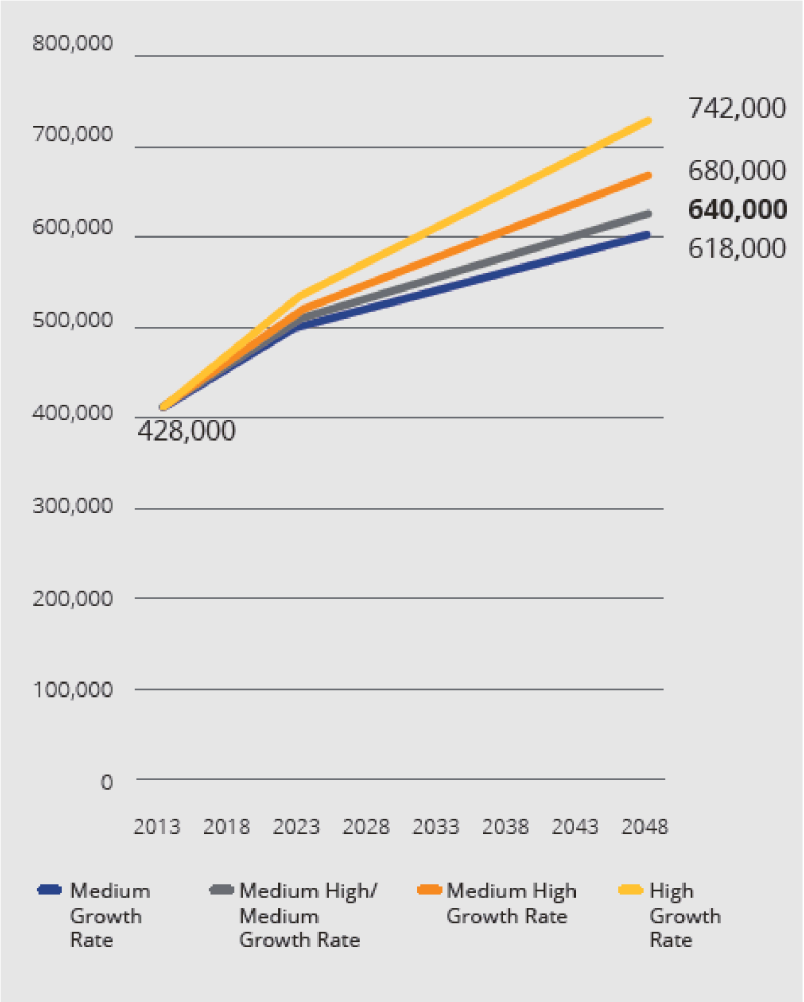
https://talkingtransport.com/2018/11/09/our-space-2018-2048-greater-christchurch-settlement-pattern-update/

chrismorahan Uncategorized November 9, 2018

Our Space 2018-2048 is currently out for consultation here. This is a plan prepared by the *Greater Christchurch Partnership*, which is made up of people from Ecan, Christchurch City Council, Selwyn District Council, Waimakariri District Council, Ngai Tahu, NZ Transport Agency, Canterbury District Health Board, Regenerate Christchurch and Department of the Prime Minister and Cabinet.

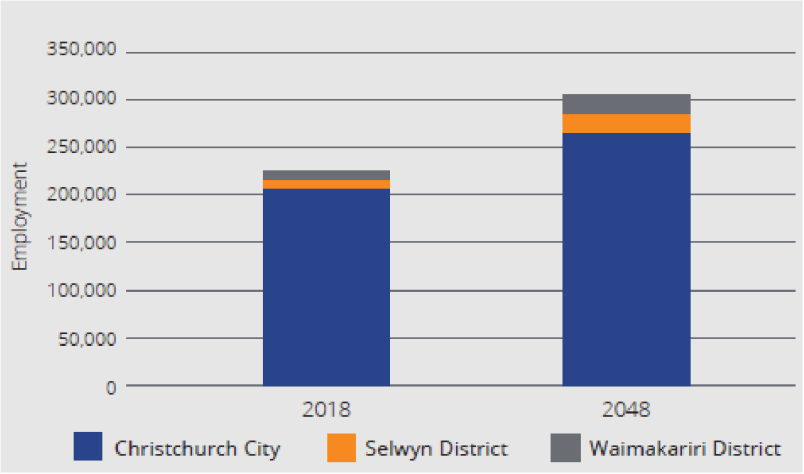
The document basically just says how much Christchurch will grow in the next 30 years, and makes a high-level plan for accommodating that growth. To save you some reading time I've highlighted the key points.

Christchurch is due to grow by 190-314 thousand people in 35 years.

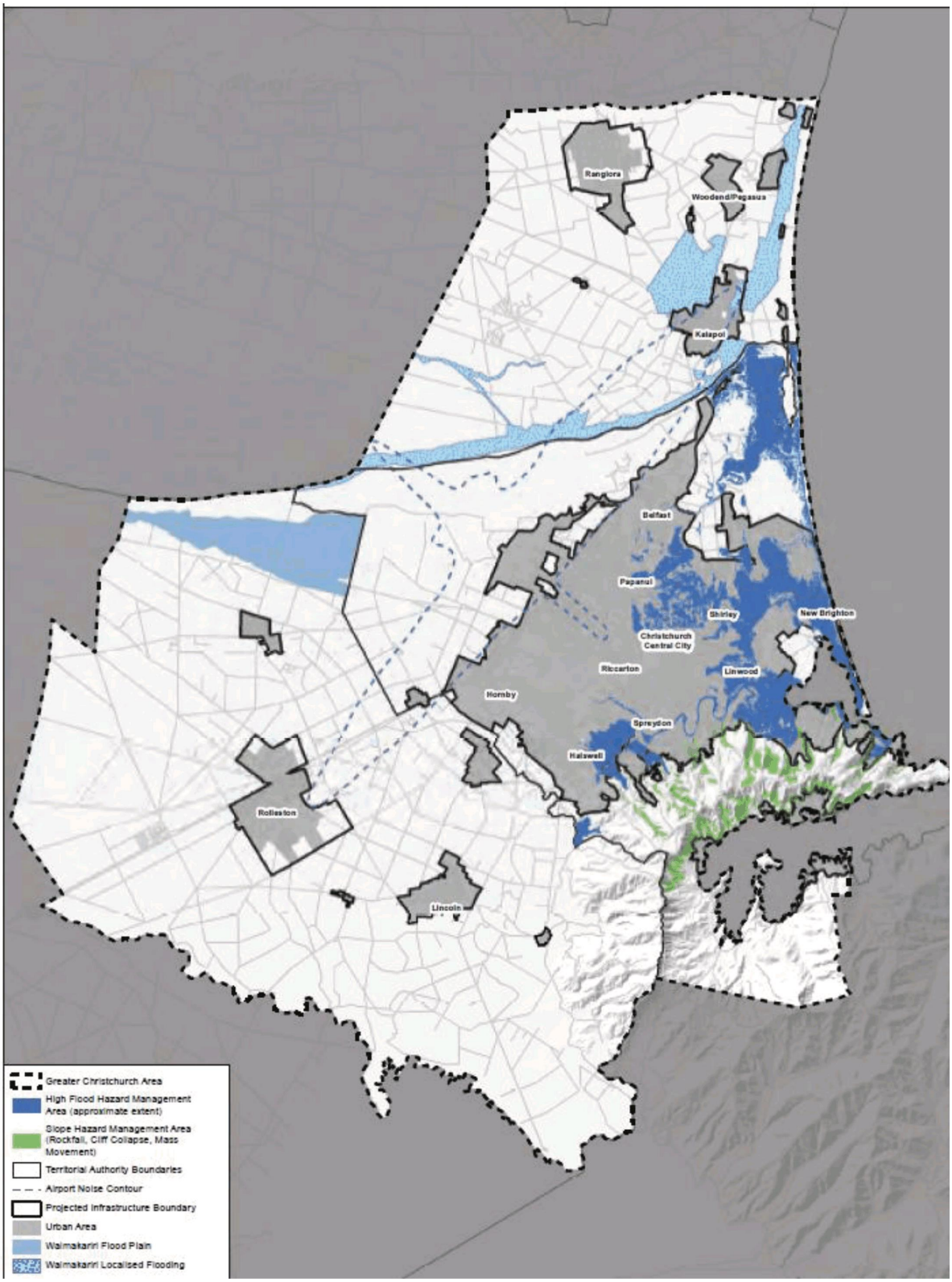


In the medium growth scenario we'll need another 87,000 homes. The plan is for 65% of these to be in Christchurch City, 20% to be in Selwyn and 15% to be in Waimakariri.

In 2048 there'll be 71,000 more jobs. The vast majority (88%) of these will be in Christchurch City.

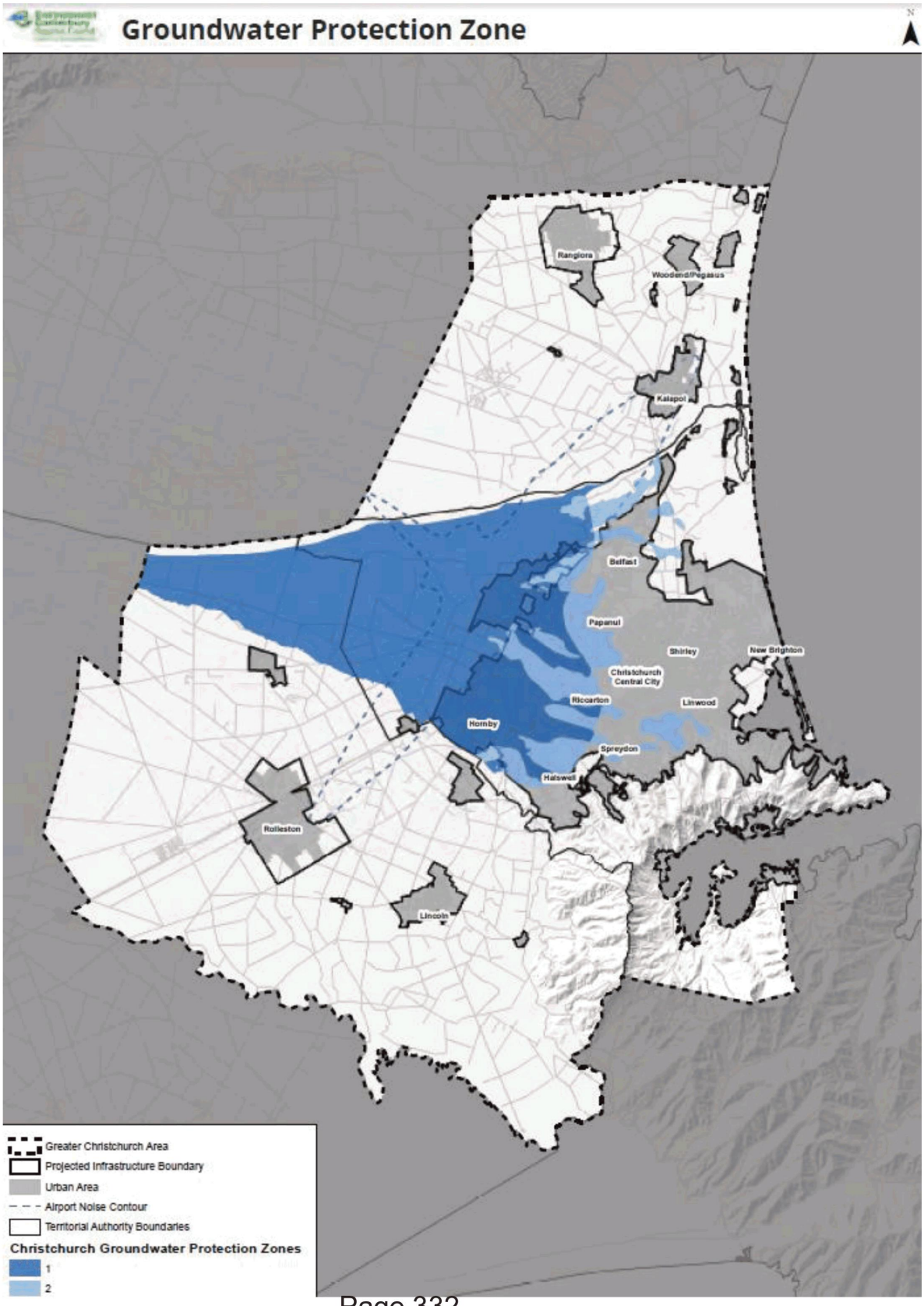


The report contains some nice maps showing, firstly, where development will not be occurring. This first one shows natural hazards:


Rangiora
Woodend/Pegasus
Kaiapoi
Belfast
Papanui
Shirley
New Brighton
Christchurch Central City
Riccarton
Linwood
Hornby
Spreydon
Halswell
Rolleston
Lincoln
Greater Christchurch Area
High Flood Hazard Management Area (approximate extent)
Slope Hazard Management Area (Rockfall, Cliff Collapse, Mass Movement)
Territorial Authority Boundaries
Airport Noise Contour
Projected Infrastructure Boundary
Urban Area
Waimakariri Flood Plain
Waimakariri Localised Flooding

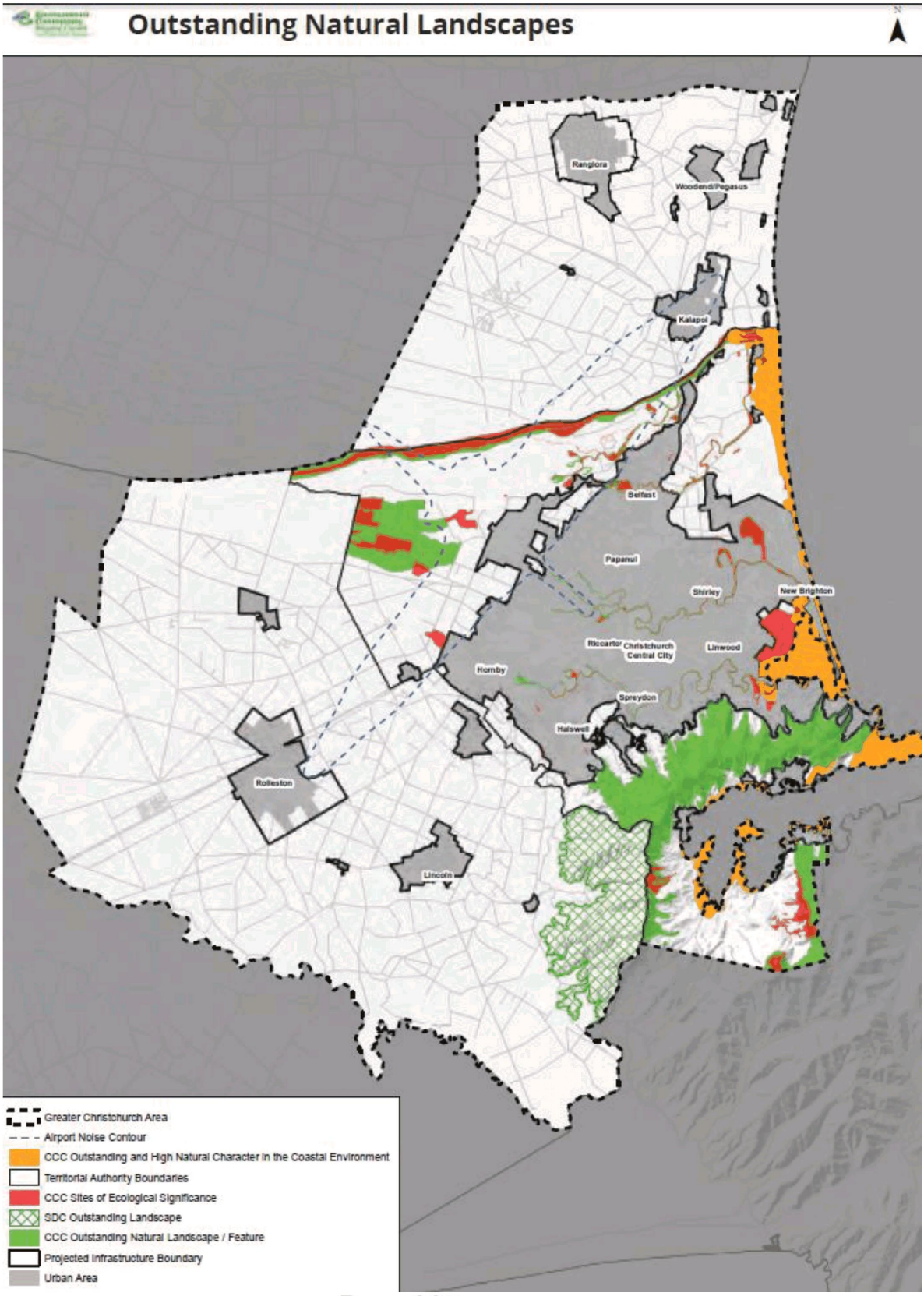
No real surprises – Christchurch is built on a swamp so lots of flood risks.

The next map shows the groundwater protection zone.


Groundwater Protection Zone
Rangiora
Woodend/Pegasus
Kaiapoi
Belfast
Papanui
Shirley
New Brighton
Christchurch Central City
Riccarton
Linwood
Hornby
Spreydon
Halswell
Rolleston
Lincoln
Greater Christchurch Area
Projected Infrastructure Boundary
Urban Area
Airport Noise Contour
Territorial Authority Boundaries
Christchurch Groundwater Protection Zones
1
2

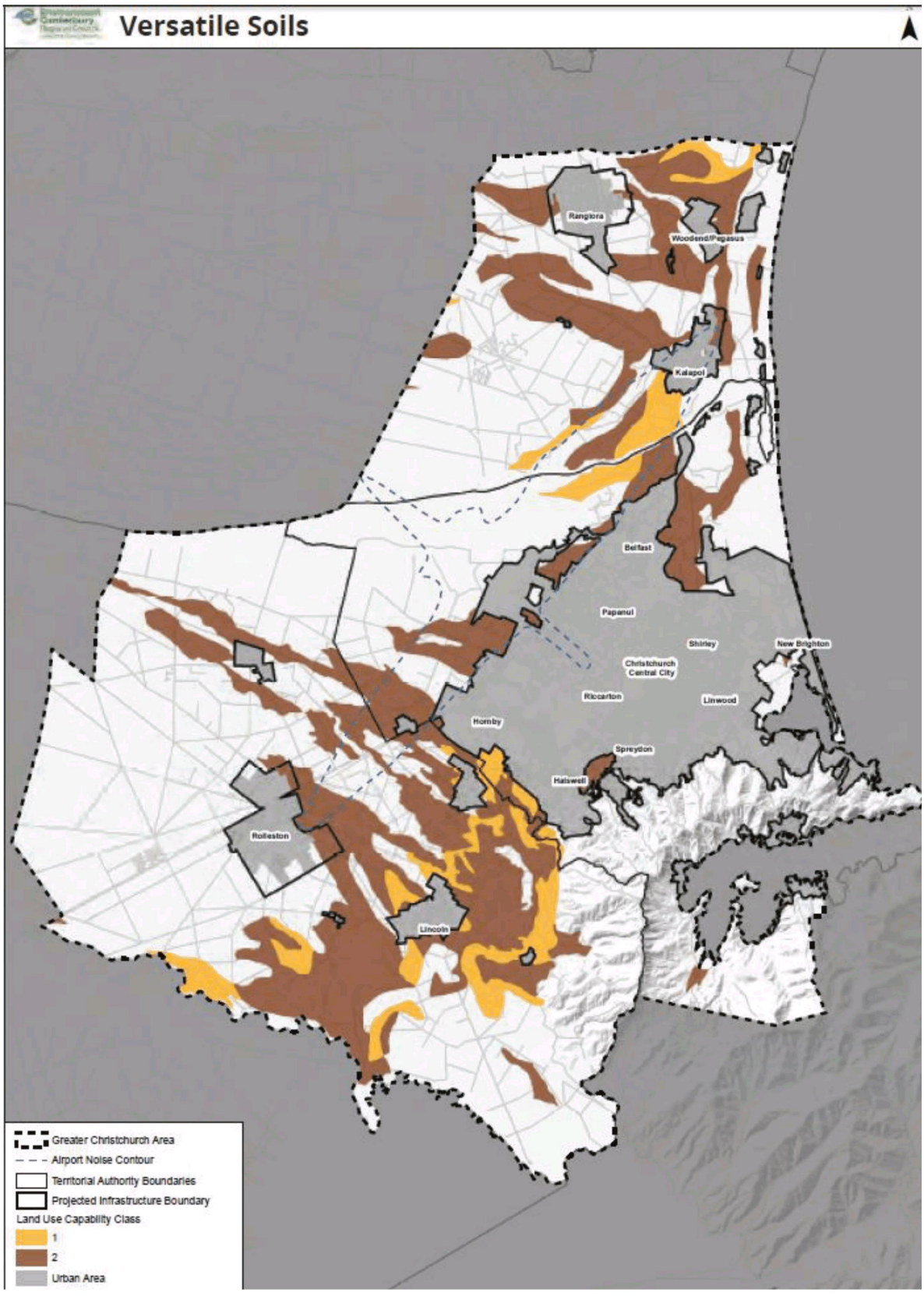
I thought this was interesting. I had never really thought of this is a constraint to where we can develop, but on reflection it does seem important that we keep our water sources clean and unpolluted.

The next map shows outstanding natural landscapes.


Outstanding Natural Landscapes
Rangiora
Woodend/Pegasus
Kaiapoi
Belfast
Papanui
Shirley
New Brighton
Riccarton
Christchurch Central City
Linwood
Hornby
Spreydon
Halswell
Rolleston
Lincoln
Greater Christchurch Area
Airport Noise Contour
CCC Outstanding and High Natural Character in the Coastal Environment
Territorial Authority Boundaries
CCC Sites of Ecological Significance
SDC Outstanding Landscape
CCC Outstanding Natural Landscape / Feature
Projected Infrastructure Boundary
Urban Area

Again no massive surprises. Port hills, beaches and rivers are all nice.

And this one shows “versatile soils”.


Versatile Soils
Rangiora
Woodend/Pegasus
Kaiapoi
Belfast
Papanui
Shirley
New Brighton
Christchurch Central City
Riccarton
Linwood
Hornby
Sprenton
Halswell
Rolleston
Lincoln
Greater Christchurch Area
Airport Noise Contour
Territorial Authority Boundaries
Projected Infrastructure Boundary
Land Use Capability Class
1
2
Urban Area

The report doesn't actually say what a "versatile soil" is, but a quick google search indicates that it is talking about its fertility, it has nothing to do with its structural behaviour in an earthquake. The scale goes from 1-8, so soil class 1 (yellow) is the very best soil you can get, while user class 2 (brown) is not far behind it. Basically this map is about trying to save our most fertile land for growing food and only using the less fertile stuff for urban sprawl.

So that's the constraints.

Now for the map showing where the growth is planned to occur.

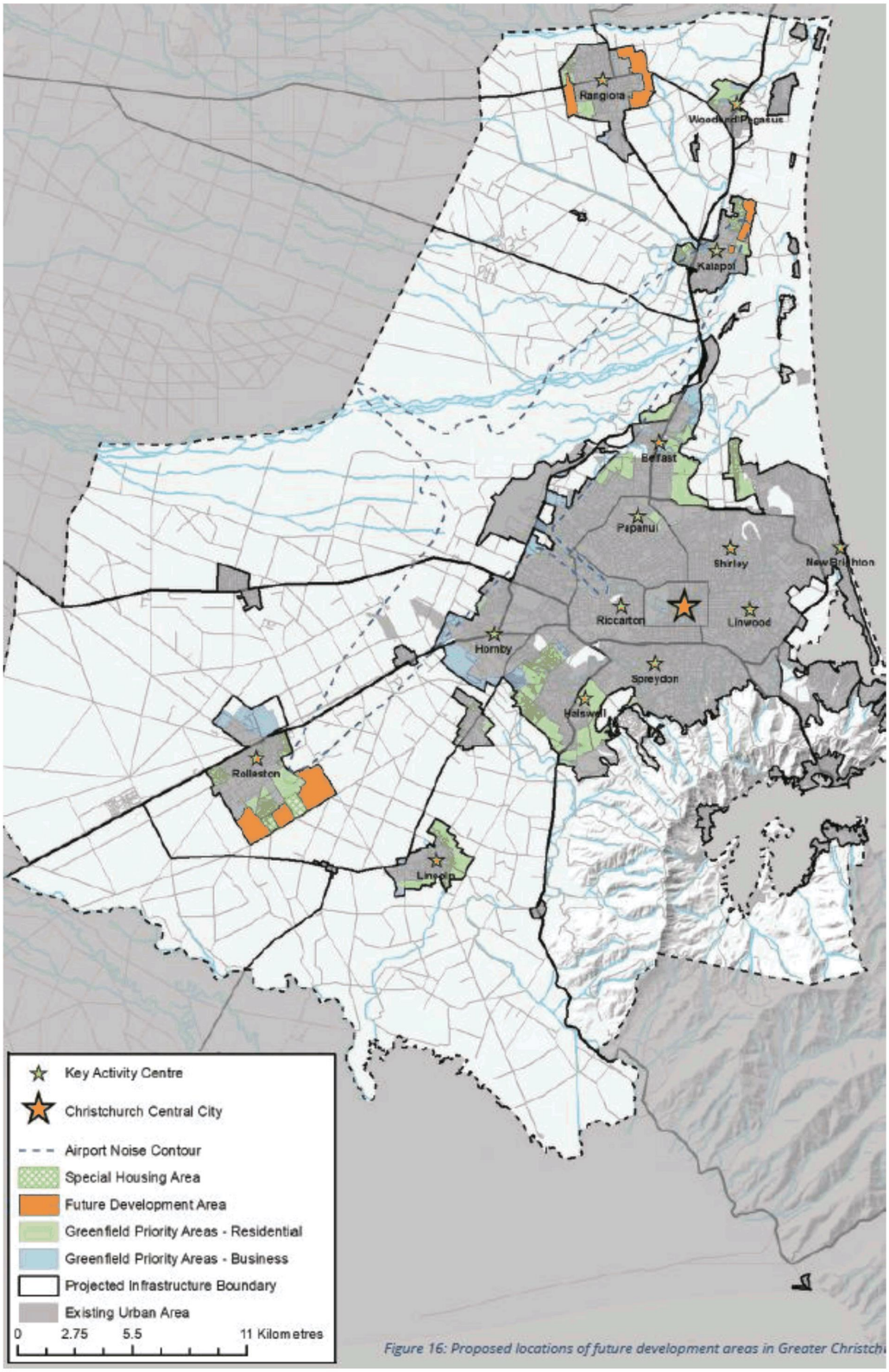


Figure 16: Proposed locations of future development areas in Greater Christch

It shows greenfield growth around the Christchurch city northern and southwest fringes, and also Rolleston, Lincoln, Kaiapoi, Woodend and Rangiora. The proportions of each are:



For context, the previous version of this plan (the Urban Development Strategy) aimed for 60% intensification and 40% greenfields growth, but development since the earthquakes has been only 25% through intensification and a whopping 75% on greenfields. So the proposed plan has less greenfields growth than what's happened post-quake, but still more than our previous plan. Auckland's unitary plan decided they wanted their growth to be 70% intensification and 30% greenfields growth, so quite a lot less than this 45%.

That's the guts of what's in the report. My overall feeling after reading it is one of being a little underwhelmed. The sentiment is really powerful, it includes lots of statements about how we will be "incorporating mixed-use and transport-oriented development", "supporting increased density", "reducing dependency on private motor vehicles", "promoting active and public transport", "comprehensively integrating transport infrastructure with land use planning". But the sentiment doesn't really match the plan. Making 55% greenfields growth, much of it out in areas that are very auto-centric and will most likely require just about everyone to drive their cars for every trip they do, is not a great outcome. It could be worse, it could be higher than 55%, but it still seems too close to the status quo for me, given things like the recent IPCC report making it very clear that we need to change and we need to do it quickly.

The problem is not the 55% greenfields growth per se, it's the nature of that greenfields growth. So far pretty much all greenfields growth in Greater Christchurch has been very auto-centric. That is, standalone houses which are very difficult to service with public transport due to the low density, which also spreads everything out and so makes most trips too long to be done on foot. As a result, almost every one living in them drives everywhere, with all the associated costs that imposes on us as a society (more carbon emissions, more pollution, worse public health, more deaths and injuries, more congestion, more expensive car parking needed, more expensive roads needed, etc etc).

But greenfields growth doesn't necessary have to be auto-centric. In other countries it's often not, and even in NZ we're beginning to take our first steps down the path of transport-oriented greenfields growth in Auckland. I'd like to see us here in Christchurch be more intentional in doing our greenfields growth in such a way that everyone isn't forced to drive everywhere. Something like building a light rail line from the CBD out to one of these greenfields areas, then allowing high-quality high-density development clustered around the stations.

The big uplift in land value around the corridor could be used to fund the infrastructure, maybe through a targetted rate, and the resulting high patronage makes the services viable into the future. It's much much easier to build density and good public transport infrastructure from the outset, than it is to come back and try to retrofit it in 20 years time. This sort of approach is very common overseas, even as close to home as Australia, and

we're well overdue in doing it here. Brendon Harre has a lot of thoughts on this, some of them in this article.

As always, I'd encourage you to get in and have your say here. If you're not sure what to say, some ideas might be:

- The plan needs to be more ambitious if it's going to achieve the stated goals.
- More sustainable development is needed, not more auto-centric sprawl. This might be either intensification around existing public transport corridors, or making sure our greenfields growth has high quality public transport infrastructure installed from the outset so that they can be developed at higher density.

How do you think we should grow as a city? Does this plan represent what you value or would you like to see a different approach?

Submission No: 077

Our Space consultation,

Greater Christchurch Partnership,

PO Box 73012,

Christchurch 8154

30 November 2018

Re: Submission – Draft Our Space 2018-2048: Greater Christchurch Settlement Pattern Update

Thank you for the opportunity to comment on the Draft Our Space 2018-2048: Greater Christchurch Settlement Pattern Update. This is a joint submission by ChristchurchNZ and Development Christchurch Ltd (DCL)

The key submission points from ChristchurchNZ and DCL on the draft settlement pattern are:

Delivering strategic aspirations: passive vs active approach

The proposed settlement patterns appear to be driven by a process that has considered growth forecasts as numbers to be accommodated, rather than contemplating how urban areas should be developed to meet broader strategic aspirations, and deliver the NPS objective to "enable people and communities and future generations to provide for their social, economic, cultural and environmental wellbeing".

We believe the approach for planning settlement patterns should be to consider how Greater Christchurch can grow in a manner that meets the strategic aspirations for the South Island's primary urban centre whilst best enabling future prosperity and sustainability.

We would expect to see an explicit analysis of the strategic priorities for Greater Christchurch and how settlement patterns can be shaped to best deliver these. Without this active approach to deliver top-level strategic aspirations, the region cannot achieve its potential to the benefit of our, economy, community and environment.

From our perspective the city's prosperity, as measured by its economic growth and national relevance, is vulnerable unless there is further transformation of the mix of economic activity away from a heavy reliance on the rebuild stimulus and servicing the local population, to an economy which is outward looking and attractive to people (residents and visitors), high value business and investment.

This will not be achieved by incremental change, the status quo, or returning to "pre-earthquake" Christchurch, but rather requires high aspiration to imagine and strive for creating new and better economic opportunities for Christchurch and its people.

We believe that increasing Greater Christchurch's economic relevance will be achieved by:

1. Growing scale
2. Growing economic wealth
3. Enhancing the attractiveness of Christchurch to visitors, current and future citizens, business and investors.

Importance of focusing on development in and around Greater Christchurch's central city

Christchurch's central city is critically important to the overall attractiveness of Greater Christchurch to visitors, talent, business and investment, but has not recovered in line with the rest of the Greater Christchurch economy and consequently is at a point of vulnerability.

The central city is at a pivotal point in its regeneration. Insufficient attention is given to the importance of driving urban growth to the central city and surrounding suburbs in the short to medium term, to position Greater Christchurch as an attractive proposition in the longer term.

Successful cities have vibrant city centres. City centres provide a high density built environment, including specialist buildings such as theatres and civic venues, that create the ability to attract a variety of activities, as well as high-value service jobs, quality and diverse hospitality and entertainment experiences, investment, entrepreneurs and businesses.

Creating a central city with vibrancy and critical mass to support ongoing reinvestment is critically important for the provision of amenities that the Greater Christchurch population will not otherwise have. It will be a key contributor to the attractiveness (or otherwise) of Greater Christchurch as a place to live and work. Higher residential and economic density in the central city is pivotal to achieving this.

Concerns about the evidence base utilised

We have concerns about the information and assumptions used in the preparation of the document.

The population and employment forecasts have been prepared in an abnormal and dynamic period of a post disaster environment, without the benefit of a recent Census to validate the baseline situation.

There are statements in the document that are contrary to the findings of detailed analysis undertaken recently by Regenerate Christchurch in its "Central City Momentum advice" in relation to the city's current state. This indicates that the issues and proposed solutions may not be based on the best or even sound evidence, creating a risk of perverse outcomes.

Specific comments on the content of the draft document:

Piii – "Many other plans, strategies and initiatives will complement this Update in improving our wider social, economic, cultural and environmental wellbeing".

As outlined in the key submission point on delivering strategic aspirations, we do not believe this approach is sufficient. The various wellbeing strategies should inform and drive settlement patterns, not be made to fit and complement them.

P3 – states that "Continued momentum behind the Central City recovery has meant businesses and workers are returning to this area, helping to restore the central business district as the principal commercial hub for the region. Employment levels in the Central City are again nearing those attained prior to the earthquakes."

This statement is not an accurate reflection of the state of recovery as outlined extensively in the "Central City Momentum advice" prepared by Regenerate Christchurch. Central city employment levels are still well below pre-earthquake levels. Furthermore, the central city was in decline prior to the earthquakes, so there is a long way to go to create a vibrant 'principle commercial hub' that fully delivers the potential regeneration opportunity presented by the earthquakes, optimising the return on subsequent public and private investments.

P15 Key growth issues for Greater Christchurch

A key issue that is missing is the need to ensure momentum in regeneration is maintained and accelerated to give Greater Christchurch the best chance of achieving higher economic relevance in the national context and a vibrant urban centre that provides the platform for attracting ongoing investment, re-investment, businesses, talent and visitors.

Taking a strategic approach in relation to the future shape of Greater Christchurch will assist in the work of ChristchurchNZ and DCL to support positive economic development and community outcomes, attracting investment and people to the city.

ChristchurchNZ and DCL would like to present this submission at the public hearings.

Yours sincerely,





Joanna Norris
Chief Executive Officer
ChristchurchNZ

Rob Hall
Chief Executive Officer
Development Christchurch Ltd

Submission No: 036		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Lawrence and Cherry	
Last name	McCallum	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Christchurch	
Postcode	[redacted]	
I am completing this submission	For myself	
Hearings		
Do you wish to speak to the hearings panel?	I wish to speak at the hearings	
Phone number	[redacted]	
Preferred location to be heard	Christchurch City	
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Do not agree	
Comment	What we have had over the past ten years is controlled sprawl through the limits set in the UDS , RPS and District plans. Particularly since the earthquakes and encouraged by pouring most of the transport funding into motorways to Rolleston and Rangiora is massive greenfield growth on the periphery at the expense of the provision of well designed medium density living in the central core. This is not just a problem because of the earthquake but a distortion of the UDS and its objectives. This can not continue and needs to be turned around.	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	
Comment	This needs to be more than an aspiration and actually implemented with as much time and effort as has previously been given to greenfields and motorway building!	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment	Sounds great. Is the issue that of whether people own or rent or whether in either instance it is affordable?	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Somewhat disagree	
Comment	Could things be tightened up a bit so we avoid fiascos like funeral parlours in residential areas? Services should also be part of the clustering.	

Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Agree
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Agree
Comment	Looks comprehensive and well founded.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree
Comment	Nice words but transport needs a 'Sea Change' - a profound or notable transformation. We have to cease throwing away funds on motorways and which perpetuates low density, obesegenic sprawl and rather than 'signal' high frequency PT, actually do it, along with much more for cycling and walking. Get on with it! Having been in Adelaide (which has its fair share of cars) and using its tram running the length and width of the CBD and then out to Glenelg (Christchurch's Brighton or Sumner) makes one think why can't we have one here? Why can't we have the cycle network they have had in the Hawkes Bay for years running between Napier and Hasting and elsewhere?
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Somewhat agree
Comment	Please do not forget the older existing residential areas. If there is one thing councils could do to improve the amenity of existing residential areas (in competition with greenfields) is put the power and telephone lines underground when a street is dug up and its kerb and channel and carriageway replaced, sometimes after a hundred years of wear.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	1. Thank you for the opportunity to express a view. 2. Please retain a policy of zero new noise sensitive development (ie. residential housing) within the noise contours (50dba) surrounding Christchurch International Airport. 3. Please keep urban development and quarrying out of the unconfined acquifer (see Var 6 of the NRRP) ie the recharge zone for Christchurch's water supply. There is plenty of land elsewhere. Urban development and the creation of pits over the aquifer just leads its ultimate contamination 4. Please keep urban development off the floodplains and coastal hazard zones. With all the development in Waimakariri District have the Ashley stopbanks been improved to a level that adequately protects that development?
Attachments	

Submission No: 018	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Suzanne
Last name	Vallance
Email	[redacted]
Street name and number	
Suburb	
Town/City	
Postcode	
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I wish to speak at the hearings
Phone number	[redacted]
Preferred location to be heard	Christchurch City
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Neither agree nor disagree
Comment	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat agree
Comment	Poorly planned greenfield development is called sprawl, but poorly managed intensification is just as bad. MDH is often sold as 'vibrant' and providing good access (to transport, employment and other services and facilities). The reality is that the 'vibrancy' is just noise and arguments with neighbours about carparks, along with good access to liquor stores, fast food and prostitutes. Planners who preach intensification by day tend to drive home to the quiet and predictable suburbs at night wondering why residents leapfrog over urban growth boundaries to live in Rolleston and Rangiora. While greenfields at least provide some mechanisms for 'controlling' one's environment (through covenants if nothing else) MDH/'up-zoned' areas lack any such mechanism. Until we find better ways of making MDH areas more acceptable, they will be unpopular. Density is a distraction; you need to think about mixed uses and governance/place-making. You should also consider what will happen if the government goes through with another NPS on Productive and Versatile Soils. Current LUCs are out of date and do not take likely impacts of climate change into account, so here's a chance to future proof. Consider the Copenhagen model of the hand rather than concentric circles - it makes integrated transport/housing/horticulture easier.
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	

Comment	'Place-making' for up-zoned areas. Throughout this OUR SPACE document, you talk about collaboration and partners, and you've provided this 'consultation' opportunity...but there's not a single mention of any thing at all where people can be actively involved in localised decision-making and action. It is not 'OUR' space at all! People do not appear to live in your city. It has been thoroughly cleansed of human content. Thus the 'element' lacking in your plan is people, residents, small business owners, dog walkers and a governance structure to bring them into this process at a scale they can understand, but that is still meaningful for council in terms of infrastructure and zones? What institutions/mechanisms/budget lines in council will you create that will connect potential and actual residents with developers, consenting, investors etc? New Zealand is unfortunate in that we are too small to do large scale redevelopments of brownfield sites (besides the eastframe); thus we are reliant on patchy development and luck. We do not discuss 'ownership' as in how to enable people to feel like they 'own' their area as kaitiaki. In the absence of a large scale developer for MDH areas, we require a coordinating body akin to the 'symbiosis' described here https://rsa.tandfonline.com/doi/abs/10.1080/08111146.2011.557995#.W_zyXihuY2w where Davison talks about "the opportunities for urban intensification to reinforce and enhance the existing character of a place [that were] explored through a case study of a Vancouver neighbourhood where a proposed high-rise project was initially resisted by community members, but has subsequently been embraced by them. It is argued that in this case, through a participatory and debate-centred planning process, urban intensification and neighbourhood character became mutually dependent in an unlikely form of urban symbiosis". I am happy to provide copies of this and Davison's other articles about urban renewal and intensification authorities in Australia.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Neither agree nor disagree
Comment	A resilient city will actually have redundancy, diversity, modularity and distribution. Look what happened in the quakes. Why put all your eggs in a couple of baskets.? The National Planning Standards are going to make it even harder to promote appropriate mixings; don't make it harder through this document.
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Neither agree nor disagree
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Neither agree nor disagree
Comment	Demographics... Aging. Consider enabling partitioning. Esp of our many 220 squares houses. Liaise with housing providers like Versatile and whoever to offer a future-proof option that can be converted into a main house with internal self-contained flat for the elderly.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	
Comment	See above

Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Somewhat agree
Comment	Think more carefully about public space provision and what makes it 'public'. Think of the Wainoni Park redevelopment in early mid 2000s and the long term benefits of taking a developmental approach (rather than the developer focus adopted in this document with a rather misleading title of Our Space).
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	10 minute neighbourhood is a great idea. It's the right unit of engagement. This is probably not the right place to make such a point but LTPs should have contingent funding pots to enable the ideas that surface in these sorts of consultations to be enabled. Find a way to get the consenting, strategy, LTPs and DP people in the same room more often, making places WITH people.
Attachments	

Submission No: 039

Submission Form

Greater Christchurch Partnership
Te Tira Tū Tahi
One Group, Standing Together

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

To:	Greater Christchurch Partnership
Submitter:	Christchurch International Airport Limited
Contact:	Felicity Blackmore
Address for Service:	Christchurch International Airport Limited C/- Planz Consultants Limited PO Box 1845 Christchurch 8140 Attn: Dean Chrystal M +64 21 668847 E dean@planzconsultants.co.nz

Hearing

Christchurch International Airport Limited (CIAL) wishes to be heard in support of this submission and it's preferred location is Christchurch.

Overview

CIAL generally supports the direction of the Our Space 2018-2048 Greater Christchurch Settlement Pattern Update (Update). There are however some key matters around the constraints on settlement which arise from airport noise contours, the strategic and unique status of the airport from an employment and transport perspective including the potential to meet the need to allocate more commercial land, the urban boundary, access to the airport and risks of bird strike which CIAL is of the opinion need to be considered as part of this process and the forthcoming review of the Canterbury Regional Policy Statement (CRPS).

Christchurch International Airport Limited

Within the Greater Christchurch area Christchurch International Airport has a wide area of influence, which includes constraints imposed by noise contours to protect its ongoing operations from the encroachment of noise sensitive development and to ensure people's amenity is not impacted by locating in the wrong place.

As New Zealand's second largest airport Christchurch is the international gateway to the South Island and is a major hub for business. The airport was estimated in 2017 to have a total economic impact on the Canterbury Region of $2.6 billion in GDP. Within the Airport Campus itself there are thousands of employees and overall the airport creates employment for approximately 24,000 full time equivalent workers (FTEs) in the Canterbury region. The onsite Antarctic operations deliver $80 million in direct benefits to the city annually and the airport helps to retain technicians and associated professionals within the region and New Zealand.

Submission Points

CIAL wishes to make the following submission points:

1. ***Strategic infrastructure***

   CIAL supports the reference in the Update on page 5 to Christchurch International Airport being recognised as regionally important strategic infrastructure which is to be protected. The need for protection drives a requirement to place constraints on where other development occurs, which is sensitive to effects airport operations.

2. ***Noise Contours***

   CIAL notes that the noise contours shown in the Update are those currently in the CRPS. It advises that the contours are currently in the process of being re-modelled as required by Policy 6.3.11(3) of the CRPS. CIAL will be in a position to make the revised contours available to the Greater Christchurch Partnership early in 2019.

3. ***Employment/Commercial/Transport Node***

   CIAL notes that the airport is not specifically referred to as a major employment area nor a Key Activity Centre. CIAL considers that it is timely as part of the Update to re-look at these aspects and to properly consider the characteristics of the airport. The airport is a major employment, tourism and transport activity centre and holds a unique position as a primary gateway to the city, region and South Island. It would be a major omission not to recognise these factors.

Based on the latest data to the year ending September 2018, 6.9 million passengers travelled in and out of Christchurch Airport. Of that 1.77 million were international passengers. In addition to this there are significant air freight (both national and international) and road freight movements to and from the airport.

In terms of employment approximately 6,260 people are employed on the airport campus making it one of the largest single centres of employment in the South Island (Note: CIAL are currently in the process of updating the employment data and this figure is expected to rise).

Taking into account the above, and the fact Christchurch International Airport differs from key activity centres as it is not located near residential areas, CIAL considers that the airport should be identified as a Key Employment, Commercial and Transport Node in the Update. Providing a signal that the Airport was an important, but somewhat different, component of the Greater Christchurch business fabric is considered an appropriate response.

Identifying Christchurch International Airport as a Key Employment, Commercial and Transport Node also provides a basis for some of the issues raised below, in terms of expansion of the urban limits, transport access and opportunities for a broader spectrum of commercial development.

Commercial Development

In terms of the latter point above, CIAL notes the particular stated need in the Update for more commercial land in the medium to long-term in the north-west of Christchurch. In this context CIAL has parts of its landholdings which are not suitable for the type of aircraft freight related distribution and warehouse facilities establishing in the Dakota Park area. CIAL considers Christchurch International Airport would be ideally situated to assist in providing for those commercial needs to be met whilst ensuring that the overall Airport Master Plan to require there is sufficient land in appropriate locations to provide for the long term needs of the airport is not compromised.

4. Urban Limits

While it is accepted that the Business Development Capacity Assessment has identified that the existing industrial land provisions are sufficient to cater for industrial growth up 2048, CIAL is a unique 'industrial' market and is experiencing an increasing take-up of airport land for distribution and warehouse related activities associated with aircraft freight. The nature of many of these types of development is that they are space extensive with some requiring aircraft aprons. CIAL estimates it has in the vicinity of 80ha of developable land left east of the main runaway not all of which would be appropriate for these types of activity and considers that there

will be a need to provide further land for this purpose within the 30 year horizon of the Update and that this should be catered for through extension of the airport designation area towards Ryans Road.

Given the timeframe of the Update through to 2048 it is therefore important that this land is identified for these purposes when the urban limit is being reconsidered.

5. Transport

Airport Rapid Transit Corridor

The Update identifies two Rapid Transit Corridors for implementation in the 30 year period up to 2048 with the central city to airport corridor only seen as a potential future corridor. CIAL considers that the Update should also provide for the route between the Airport and the Central City as a Rapid Transit Corridor. CIAL considers this is justified in terms of providing for commuters and encouraging tourists into the City, particularly given that such a corridor is likely to generate a greater level of all day demand rather than just peak period demand.

State Highway 1 Corridor

CIAL considers that State Highway 1 (Johns Road/Russley Road) should be included in the Update as a strategic freight route and that it should acknowledge the need for significant upgrades along that route within the 30 year horizon, in particular the grade separation at Sawyers Arms Road.

6. Flood Hazard

The flood hazard map in Figure 10 of the Update shows flooding from the Waimakariri stopping at the Christchurch City boundary. CIAL considers that the flood hazard map should be amended to show the full extent of the flood hazard associated with a breakout of the Waimakariri River in terms of a constraint.

7. Bird Strike

CIAL considers that bird strike should be included in the Update as an identified hazard in the area around the Airport. A serious bird strike event would have a significant impact on Greater Christchurch in diminishing confidence in Christchurch Airport as providing a safe location for domestic and international passengers. Identifying the issue sends an important signal to plan writers to consider the appropriateness of where to allow activities which have the potential to be bird attractants to be located.

It is CIAL's intention to provide more detailed information in relation to the above submission points at the future hearing process, however CIAL would welcome the opportunity to discuss any aspects of this submission at an early opportunity should the Partnership wish to do so. In particular it would welcome the opportunity to provide updated information regarding the noise contour modelling exercise as and when it becomes available.

Finally, CIAL considers that the Schedule of Future Work should involve consultation with owners / operators of Strategic Infrastructure such as CIAL.

Dated: 29th November 2018



Dean Chrystal
Consultant Planner (Director)
Planz Consultants Limited

Our Space 2018-2048 - Submitters Hearing Schedule for WEDNESDAY 27 February

Please note that there may be some changes to this schedule as commitments change and some unplanned rescheduling may be required. We apologise in advance for any inconvenience this may cause.

Schedule Updated 17 February 2019

Day 3 [Wednesday 27 Feb] MORNING: Waimakariri District Council - Council Chamber AFTERNOON: Christchurch City Council - Committee Room 1			
Time	**Submitter Number**	**Submitter/Presenter**	**On behalf of...**
9.00	#6	Geoff Spark	
9.20	#81	Malc Dartnall	
9.40	#61	Martin Pinkham	
10.00	#71	Mark Allan	Allan Downs Ltd
AMT [10.20]			
10.40	#9	Lauren Semple	Bellgrove Family Trust
11.00 to 12noon	***Hearing Panel drive back to Christchurch***		
LUNCH [12.20]		**Christchurch City Council - Committee Room 1**	
13.20	#10	David Hawke	
13.40	#67	Kim Kelleher / Jo Appleyard	Lyttelton Port Company
14.00			
14.20			
14.40			
15.00	#5	Drucilla Kingi-Patterson	

Submission No: 006		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Geoff	
Last name	Spark	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Eyrewell Forest	
Postcode	7476	
I am completing this submission	On behalf of a group or organisation No of people in group: 4	Robert and Margaret Spark and Richard and Dawn Spark, Spark Bros Ltd Role within organisation: Governance
Hearings		
Do you wish to speak to the hearings panel?	I wish to speak at the hearings	
Phone number	[redacted]	
Preferred location to be heard	Rangiora	
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree.	
Comment	We own land immediately adjacent to the east boundary of Rangiora between Boys and Marsh Roads which we believe SHOULD BE INCLUDED in the plan for rezoning and housing development. This is because it will be close to the proposed light rail as well as will help balance the town and help centralise the town centre. There is already some sewage pipe infrastructure in place via Waimakariri District Council easement. We are a well established farming family in the district and have a history of collaboration with Waimakariri District Council. We also own land on north side of Boys Road which is included in the plan which we support.	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	
Comment		
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment		
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Agree	
Comment		

Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Agree
Comment	Rangiora will continue to grow as it is such a good location to live and has good access to Christchurch and many recreational options closeby
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	
Attachments	

Submission No: 081	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Malc
Last name	Dartnall
Email	[redacted]
Street name and number	[redacted]
Suburb	
Town/City	Rangiora
Postcode	[redacted]
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I wish to speak at the hearings
Phone number	[redacted]
Preferred location to be heard	Rangiora
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat disagree
Comment	There is a serious lack of larger houses. In Rangiora there is barely a house being built with more than four bedrooms.
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree
Comment	The current framework encourages small houses and disregards the needs of larger families.
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	It should be family friendly. Policy should specifically mention families with four or more children who want a bedroom each and one spare. Also room to kick a ball outside. Current policy seems to be to force such families into lifestyle blocks, away from their school friends and other acquaintances.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Agree
Comment	
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Do not agree

Comment	Their has been a lot of comment about a plastics factory recently built near Rangiora in a rural zone. Waimakariri is scatter with industrial type operations in the rural zone, the is a lack of industrial zoned land.
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Do not agree
Comment	Th much emphasis on famines getting smaller. Larger families are being ignored.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Neither agree nor disagree
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	
Attachments	

Submission No: 061		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Martin	
Last name	Pinkham	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Kaiapoi	
Postcode	[redacted]	
I am completing this submission	For myself	
Hearings		
Do you wish to speak to the hearings panel?	I wish to speak at the hearings	
Phone number	[redacted]	
Preferred location to be heard	Rangiora	
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	
Comment	However, the lack of a long term settlement plan in Waimakariri is disappointing and is likely to lead to a poor urban form.	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	
Comment	The lack of a long term transportation planning in Waimakariri is not encouraging settlement close to the existing towns. In addition, the Kaiapoi Regeneration Plan does not support higher density close to the town centre.	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment	Lower development contributions Apartment style living (and discourage townhouse development Encourage government to overhaul the body corporate legislation and tenancy legislation Larger scale developments eg whole blocks	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Agree	
Comment	The lack of a long term public transportation planning in Waimakariri is not encouraging commercial development close to the existing commercial areas. In addition, the Kaiapoi Town Centre Plan is unlikely to support growth in central Kaiapoi.	

Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Agree
Comment	The currently zoned land should be developed first. However, if further industrial development is required in Waimakariri it should be between Kaiapoi and the Waimakariri River
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Somewhat disagree
Comment	The "evidence" is very hard to follow
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	The approach is sound, but I do not have any confidence in the current structure to deliver an efficient system in a timely manner. The development of all Transport infrastructure should be delegated to a stand alone authority like Auckland Transport or a Canterbury wide Public Private Partnership like Transwaste.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	The approach is sound, but I do not have any confidence in the current structure to deliver well planned high quality systems. The development of 3 Waters infrastructure should be delegated to to a stand alone authority like Auckland's WaterCare or a Canterbury wide Public Private Partnership like Transwaste.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	Our Space lacks any detail about how the plan will be implemented.
Attachments	

Submission No: 071

Ourspace@greaterchristchurch.org.nz

Submission on Our Space 2018-2048: Greater Christchurch Settlement Pattern Update

Submitter name: Allan Downs Ltd
Address: 191 Johns Road
Email: maa@eliotsinclair.co.nz

Yes I do wish to speak at the hearing

Preferred location to Speak at hearings (in 2019):
Rangiora

Contact number:

The National Policy Statement for Urban Development Capacity (NPS UDC) requires Councils to undertake a Capacity Assessment to estimate the demand for residential and business land to determine whether there is sufficient, feasible development capacity for growth needs of the District over the next 30 years (2018 – 2048). In undertaking this assessment, Council must take into account relevant Regional and District Plan provisions, the likely availability of development infrastructure, the current feasibility and the rate of uptake of capacity, along with the market response in relation to what has been built, where it has been built and at what price. The Our Space update released for consultation summarises the findings of the Capacity Assessment that has been undertaken.

This submission relates primarily to the Waimakariri District portion of the proposal.

The Market Economics report entitled "Waimakariri District Residential Feasibility 2018", dated 28 September 2018 and other various reports for Greater Christchurch and "Our Space" identifies that there is a shortage of sufficient feasible land in Waimakariri District to cater for the medium (2018-2028) and long term (2028-2048) housing development capacity scenarios in respect of Waimakariri District's proposed contribution of 15% capacity towards the long term growth of Greater Christchurch.

The Market Economics report summary states that the economic models undertaken show that most of the residential development capacity in the district's zoned areas 'greenfield priority areas' are likely to be become feasible within the coming 30 years. The report considers the current 1600 house capacity available in the District is sufficient for the short term, that 6,200 are required for the medium term (with 4,800 – 5,400 feasible capacity, with a shortfall of 1,400 houses) and that 15,600 are required for the long term (with a shortfall of 9,500 houses). The Market Economics report identifies that there will be 2-3 District Plan Reviews and ten Housing Development Capacity Assessments over the next 30 years to provide opportunity to re-zone additional land and re-evaluate housing sufficiency for the District.

The models used by Market Economics are based on certain assumptions. The model that tests feasibility, uses land that is currently zoned in the Greater Christchurch within Waimakariri District and not yet subdivided (Greenfield land). The second model tests the feasibility of a building on infill, greenfield and subdivided land. Neither of the models used tests feasibility of residential land outside of Greater Christchurch or un-zoned residential areas.

It is not clear whether land that is within a current Greenfield Priority Area (Map A – Chapter 6 of the Christchurch Regional Policy Statement) but is currently un-zoned (i.e. in South West Rangiora: Johns Road) has been considered in the figures used by Market Economics for Waimakariri when considering housing capacity calculations.

"Our Space" identifies that the projected shortfalls must be resolved by a combination of a change to the

Canterbury Regional Policy Statement (CRPS) (Map A) to make provision for additional residential development "Future Development Areas" within the existing Projected Infrastructure and subsequent changes to assess and potentially re-zone land through the Waimakariri District Plan as part of the District Plan Review. It is noted that if "Our Space" is adopted, then the proposed changes to the CRPS will occur in 2019 (next year) and that the District Plan review will continue this process from 2020 onwards, both of which are to facilitate Waimakariri District's ability to meet its required housing capacity target.

It is acknowledged that there is an expectation that some housing supply will come from the intensification of existing urban areas, and this will form part of the Waimakariri assessment for the District Plan review. However Market Economics[1] made the following observation of housing in the District : "*... the bulk of dwellings are single level standalone houses on freehold sites. There are a small number of attached houses, which are mainly single level units and some double level townhouses. There are no multilevel apartment blocks in the District. This is important as it shows that the types and nature of development which has been demanded in the past.*"

The above suggests that re-zoning additional land to support the type of housing typically sought in Waimakariri District is likely to be the primary way to supply additional housing capacity to the local market in Waimakariri, rather than relying on township intensification, and housing typologies that are not common in the District.

Effectively, the proposed change to the CRPS and Map A identifies that all remaining rural land within Rangiora's current Projected Infrastructure Boundary (urban limit) as being a "Future Development Area", to which "Our Space" indicates that the District Plan process will seek to re-zone.
This is considered appropriate as it will enable the provision of infrastructure in a sequential manner to the residential new areas identified. It will also require Council to comprehensively address any existing constraints that relate to these sites.

As landowners of existing un-zoned (Rural) Greenfield Priority land on Johns Road Rangiora currently identified by the CRPS for future residential development it is our submission:

- That "Our Space" as proposed is supported and should be adopted.
- That the proposal to accommodate additional housing growth within the current Projected Infrastructure Boundary in Waimakariri District is supported.
- That the immediate changes proposed to the Canterbury Regional Policy Statement in 2019 for the revision of Map A and the inclusion of housing targets is supported.
- That using the imminent Waimakariri District Plan Review to re-zone additional land for residential use to meet the required housing targets for Waimakariri District is supported.
- However, it is submitted that the Waimakariri District Plan review should seek to re-zone existing un-zoned Greenfield Priority Residential land first ahead of any new "Future Development Areas" identified by "Our Space".

From: Mark Allan
Email: maa@eliotsinclair.co.nz
Mobile: 027 435 1610

[1] Waimakariri District Residential Feasibility, ME Consulting, 1.1.1 Residential Demand, Page 5

Submission No: 009

Submission Form

Greater Christchurch Partnership
Te Tira Tū Tahi
One Group, Standing Together

HAVE YOUR SAY BY 30 NOVEMBER 2018

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

How to make a submission

Online: Make a submission using the online submission form at www.greaterchristchurch.org.nz/ourspace

Email: ourspace@greaterchristchurch.org.nz

Post: Our Space consultation, Greater Christchurch Partnership, PO Box 73012, Christchurch 8154

Hand deliver: Civic Offices, 53 Hereford Street

SUBMITTER DETAILS

Name: Bellgrove Family Trust

Address: _____

_____

_____

_____

Email: _____

I am completing this submission: [ ] For myself [X] On behalf of a group or organisation

If you are representing a group or organisation, how many people do you represent? _____

HEARINGS

Hearings are planned for February 2019.

Do you wish to speak to the hearings panel?

[X] Yes, I wish to speak at the hearings [ ] No, I do not wish to speak at the hearings

If you wish to speak at the hearings, please indicate your preferred location to be heard and provide a contact number.

Preferred location: [ ] Christchurch City [X] Rangiora [ ] Rolleston

Contact number: _____

QUESTIONS

The questions below may help you structure your submission in relation to the various aspects covered in **Our Space 2018-2048**. Section 5.7 of **Our Space** briefly outlines some alternative options considered when preparing this document. You can make submission points under each question and/or other and more general comments under question 9.

Housing growth

Question 1

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree or disagree with this approach and why?

X Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Do not agree

Bellgrove Family Trust supports the recognition that further greenfield land is required around Rangiora to provide sufficient capacity for housing. The Trust also supports the proposed approach of fast-tracking changes to the Regional Policy Statement to facilitate the inclusion of the specified areas for development. It encourages the Panel to consider how it might ensure that the rezoning of these areas to enable development occurs in a timely manner, recognising that further delays to this process, the process of amending the RPS and the District Plan review process may threaten the ability of Councils to deliver sufficient housing capacity for their jurisdictions.

Question 2

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why?

Agree	Somewhat agree	X Neither agree nor disagree	Somewhat disagree	Do not agree

The Trust considers that enabling a range of new housing types around existing centres is appropriate, and generally supports the continuation of this approach.

Question 3

Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home.

What elements should be included in this action plan?

No comment

Business growth

Question 4

Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why? What further measures would support such development?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

No comment

Question 5

The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses.

Do you agree or disagree this is sufficient and in the right location and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

No comment

Growth needs

Question 6

The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.

Do you agree or disagree with our evidence base and why?

Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Do not agree
		X		

The Trust considers that, in view of the significant growth that Waimakariri generally (but Rangiora particularly) has experienced over the last decade, the high growth scenario may provide a better basis on which to assess demand.

Transport and other infrastructure

Question 7

Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors.

Do you agree or disagree with this approach and why?

Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Do not agree

No comment

Question 8

Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.

Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

X Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Do not agree

The Trust supports the identification of further greenfield areas for development which are currently, or can easily be, serviced with infrastructure. The areas identified in Rangiora fall within the projected infrastructure boundary in the Regional Policy Statement, and they are also areas which have been flagged for growth (and more particularly, infrastructure servicing for growth) by Waimakariri District Council since the initial proposal to establish the urban limit through Proposed Plan Change 1 in 2007. In the Trust's submission, removing the current constraints on development of the identified areas offers the most efficient and cohesive solution for the Councils to meet their obligations to provide sufficient development capacity.

Other

Question 9

What other points do you wish to make to inform the final **Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?**

Bellgrove Family Trust strongly supports the recognition that demand for housing will require the release of further greenfield land to ensure that sufficient capacity is provided within the Waimakariri District in the short, medium and long term. Bellgrove also supports the areas selected for inclusion in the RPS as "Future Development Areas", and the proposal to fast-track amendment of that document to remove the current constraint on developing those sites. It does however strongly encourage the Panel and the members of the Greater Christchurch Partnership to consider how it might ensure the timely rezoning of the identified sites for development through to the District Plan level. Obtaining zoning which enables development is one of a number of key components required to facilitate the provision of housing. The proposal to defer decisions on when " Future Development Areas" may be developed to the District Plan reviews stage risks adding significant delay to the release of this land, which may impact on the ability of Councils to meet their obligations under the National Policy Statement on Urban Development Capacity. The Trust therefore requests that careful consideration is given to how greater certainty on the future of these areas may be provided to landowners and the wider community.

We require your contact details as part of your submission — it also means we can keep you updated throughout the project. Your submission, name and contact details are given to decision-makers to help them make their decision.

Submissions, identifying submitter names only, will be made available online. If requested, submissions, names and contact details may be made available to the public, as required by the Local Government Official Information and Meetings Act 1987.

If you consider there are compelling reasons why your name and/or feedback should be kept confidential please outline this in your submission.

Submission No: 010	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	David
Last name	Hawke
Email	[redacted]
Street name and number	[redacted]
Suburb	[redacted]
Town/City	Halswell
Postcode	[redacted]
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I wish to speak at the hearings
Phone number	[redacted]
Preferred location to be heard	Christchurch City
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat agree.
Comment	The intent to focus on redevelopment in Christchurch City (as opposed to greenfield development) is a timely. I live in Halswell, and the recent greenfield expansion in Halswell has swallowed up versatile soils, diminished community liveability, and caused traffic congestion heading to the central city with downstream effects on the likes of Addington Village. So, the emphasis on greenfield development on land around Rolleston, Rangiora & Kaiapoi is great. HOWEVER, this land needs to be developed at a significantly higher density than presently. I am mostly familiar with Rolleston; the sprawl around Rolleston is making this town heavily car dependent with little evidence of active transport. High car densities inhibit community development, and cause people to die in traffic accidents.
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	Makes for more sustainable living, and diminishes the social cost of car-dependent commuting.
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	**The need for sustainable transport options. So, this type of housing shouldn't be on the outskirts. **The need for developments to be mixed income, so social and regular housing need to be mixed together **A range of housing styles, to suit people on their own, couples on their own, couples with children, and multi-generational families
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and	

town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Somewhat agree
Comment	Business growth needs to be tightly tied to sustainable transport options - public transport and active transport
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Agree
Comment	Thinking particularly of Hornby and Rolleston, these locations are close to where people live and there seems plenty of space available for any foreseeable growth. Furthermore, both locations are close to rail or truck transport infrastructure.
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Agree
Comment	IT's the best we've got! Probably wrong, but a good start
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	People often forget that car transport has downstream effects on communities through which the cars travel. We see this with Halswell, where cars from Halswell flood down Lincoln Road and diminish the liveability of both Hoon Hay and Addington.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	Tying all this together makes for much more cost-effective development.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	Totally agree with precluding no further extension of the urban limit at Halswell. We have major liveability issues caused by the decision post earthquake to take the easy greenfield option for new housing.
Attachments	

Submission No: 067

29 November 2018

Greater Christchurch Partnership
PO Box 73012
Christchurch 8154

Email: ourspace@greaterchristchurch.org.nz

To whom it may concern at Greater Christchurch,

RE: LPC SUBMISSION: OUR SPACE 2018-2048 GREATER CHRISTCHURCH SETTLEMENT PATTERN UPDATE

Hearing

Lyttelton Port Company (LPC) wishes to be heard in support of this submission and its preferred location is Christchurch.

Overview

LPC generally supports the direction of the Our Space 2018-2048 Greater Christchurch Settlement Pattern Update (Update). There are however some matters around the urban limit and transport associated with access to the port and inland ports that LPC considers needs to be considered as part of this process and the forthcoming review of the Canterbury Regional Policy Statement (CRPS).

Lyttelton Port Company

Within the Greater Christchurch area LPC operates three key sites – the Port of Lyttelton, City Depot in Woolston, and Midland Port at Rolleston. LPC employs over 500 employees at these facilities.

Lyttelton Port Company Limited
Private Bag 501, Lyttelton, 8841,
Christchurch, New Zealand
Phone: +64 3 328 8198
Fax: +64 3 328 7828
Email: enquiries@lpc.co.nz
Web: www.lpc.co.nz

LPC serves a wide range of importers and exporters at the Port itself with full shipping services 24/7, all year round. LPC own and operate Lyttelton Port, which is by far the most significant port in the South Island in terms of total tonnages of cargo, number of containers handled, the value of exports and the value of imports. By volume, the Port accounts for 30.7% of South Island seaports' overseas exports and 45.1% of overseas imports. By value the Port handles 35.8% of the South Island's seaports' exports and 70.0% of the South Island's seaports' imports.[1] It is recognised as a "lifeline utility"[2] and "significant infrastructure"[3] at the local and national level.

Trade through Lyttelton Port has grown considerably across both containerised and general cargo. The volume of containerised and general cargo through the port has increased by 17.8% over the period 2010 to 2018.[4] In 2017 the port handled 420,496 TEU (twenty foot equivalent) containers, an increase of 7.3% on 2016 and an increase of 80.9% since 2010.[5] LPC expects this growth to continue into the foreseeable future, as a result of:

- Growth in Canterbury and South Island export and imports; and
- Greater use of Lyttelton Port instead of other South Island ports as shipping companies continue the trend of using larger container ships and reducing services to some ports.

LPC forecasts ongoing growth for its container terminal to reach well over one million twenty-foot equivalent units (TEUs) by 2041. Non-containerised volumes of export and import trades are expected to continue growing but not as fast as containerised cargo.

1 For the year ending 30 June, 2018. Source: Statistics New Zealand Infoshare, Overseas Cargo Statistics (www.archive.stats.govt.nz/infoshare)
2 See Schedule 1 of Civil Defence Emergency Management Act 2002.
3 See New Zealand Government's 2011 National Infrastructure Plan and Christchurch City Council's Christchurch Transport Plan 2012-42.
4 For years ending 30 June. Source: Statistics New Zealand Infoshare, Overseas Cargo Statistics (www.archive.stats.govt.nz/infoshare)
5 Source: www.championfreight.co.nz/largest-nz-ports

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City Depot located on Chapmans Road, Woolston, provides an inland container storage and repair facility in close proximity to the Port and is the South Island's largest container facility. It also has a rail siding to allow transfer of cargo.

Midland Port provides for the receipt, storage, packing, devanning and cross docking of containers and includes direct rail connection to the 11 shipping lines and 8 shipping services that access the Port.

At present the largest redevelopment in the Port's history is underway with a major focus being to move a significant part of the operations east to allow for growth. These developments are enabled by the Lyttelton Port Recovery Plan a significant document in the recovery of Greater Christchurch post the earthquakes. The Port redevelopment will ensure forecasted freight increases are able to be catered for and continue to support customers' requirements and the growth within the Canterbury region.

Submission Points

LPC wishes to make the following submission points:

1. ***Strategic infrastructure***

   LPC supports the reference in the Update on page 5 to Lyttelton Port being recognised as important strategic infrastructure which is to be protected. The presence of strategic infrastructure also places constraints on where development can occur and in particular developments which are sensitive to the effects of Port operations.

2. ***Urban Limits***

   LPC has obtained the necessary consents to undertake significant reclamation at the Port as the key factor which will enable the expansion of the Port to the east. In order to ensure that appropriate port operations zoning is able to be applied to this area and/or activities undertaken on the reclaimed land as it is being built over a long time horizon, the urban limits boundary needs to be

Lyttelton Port Company Limited
Private Bag 501, Lyttelton, 8841,
Christchurch, New Zealand
Phone: +64 3 328 8198
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updated to incorporate the new areas of land which will be reclaimed and place them within the urban limits in the same manner as of current Port land. The Plan attached as **Appendix 1** identifies the area concerned and is consistent with the Lyttelton Port Recovery Plan.

LPC notes that the land adjoining its Midland Port facility to the east and north remains inside the Project Infrastructure Boundary but has not been identified as a Business greenfield priority area. LPC's point here is to emphasise the need to ensure that the constraints which arise from strategic infrastructure are recognised and sensitive activities are prevented from locating near Midland Port.

3. Transport

LPC's primary concern is that the Update is relatively silent, aside from two Rapid Transit Corridors, on improvements to the transport network over the next 30 year period. In particular LPC has a specific interest in ensuring the movement of freight to and from its three facilities is not hampered by increased traffic growth and distribution as a result of urban development.

The Update emphasises that "*an important part of managing the transport network is to ensure that freight can be moved efficiently to and through Greater Christchurch"* and that "*this will require effective management of congestion on the main freight routes"*. It is within the context of this statement that the following points are made:

Key Road Freight Routes

For clarity LPC has provided a Map in **Appendix 2** that highlights key road freight routes that are utilised. LPC considers that the key road freight routes shown in Appendix 2 should be included in the Update as strategic freight routes. In particular, the Update should acknowledge the need for significant upgrades along the State Highway 76 route within the 30 year horizon, specifically the upgrading of the Brougham Street section of that route. LPC considers Brougham Street is currently a major point of congestion for freight to the Port and understand that some drivers have begun taking alternate routes including around the base of the Port Hills; which is considered to be undesirable.

Lyttelton Port Company Limited
Private Bag 501, Lyttelton, 8841,
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The increasing Brougham Street congestion was identified in the 2014 Greater Christchurch Freight Study by Aurecon as a future capacity constraint and threat, with roading widening and grade separation of key intersections suggested as solutions to ensure the efficient distribution of freight and improve local access crossing of the corridor. LPC acknowledges the current NZTA/Christchurch City Council consultation process on this route and considers that the outcomes of this need to be built into the Update.

The Aurecon report also identified the duplication of the Lyttelton Tunnel as a long-term medium priority. LPC consider this, or a freight only tunnel, may well be needed by around 2040 and should be signalled in the Update.

The imminent re-opening of the Sumner Road via Evans Pass Road will once again mean this route is used for freight traffic associated with hazardous substances and LPC considers this needs to be expressly recognised.

Rail

LPC considers rail to be an important component of the freight network in particular the portion of the network shown in Appendix 2, and will become increasingly so over the next 30 year period. There are a number of constraints on the rail network in the Christchurch area which have the potential to impact of freight movements that LPC consider should be highlighted in the Update. These include:

- The ability to turn to the northern line when leaving the port. This will become of increased importance if an inland port is created to the north of Christchurch as freight from North Canterbury increases.
- Double tracking between Islington and Rolleston. With increased freight movement out of Midland Port at Rolleston coupled with those movements already on the route from the south and from the Midland line this part of the route is likely to become increasingly congested over the next 30 year period. Double tracking of this section was highlighted in the Aurecon report as a medium term medium priority measure.

Lyttelton Port Company Limited
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Christchurch, New Zealand
Phone: +64 3 328 8198
Fax: +64 3 328 7828
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- Traffic congestion created at the shunting yards at Middleton on the Annex Road, Matipo Street and Whiteleigh Avenue rail crossings was highlighted in the Aurecon report as impacting on freight movements and deemed a long term high priority for grade separation. In particular the Annex Road crossing, was identified as a significant connector between the Christchurch South Motorway (from Brougham Road) to the western region of Christchurch, and will become detrimental to movements of freight and other vehicles if remedial action is not undertaken.

Rolleston Overpass

LPC supports the need for the roading overpass at Rolleston to be constructed in the short term to allow shunting at Midland Port to occur without having to interface with, and disrupt, traffic.

It is LPC's intention to provide more detailed information in relation to the above submission points at the future hearing; however, LPC would welcome the opportunity to discuss any aspects of this submission at an early opportunity should the Partnership wish to do so.

Finally, LPC considers that the Schedule of Future Work should involve consultation with owners / operators of Strategic Infrastructure such as LPC.

Kind regards,

Kim Kelleher
Environment & Planning Manager
Lyttelton Port Company
T: *+64 3 328 7983*
M: *+64 27 298 1347*
E: *kim.kelleher@lpc.co.nz*

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Christchurch, New Zealand
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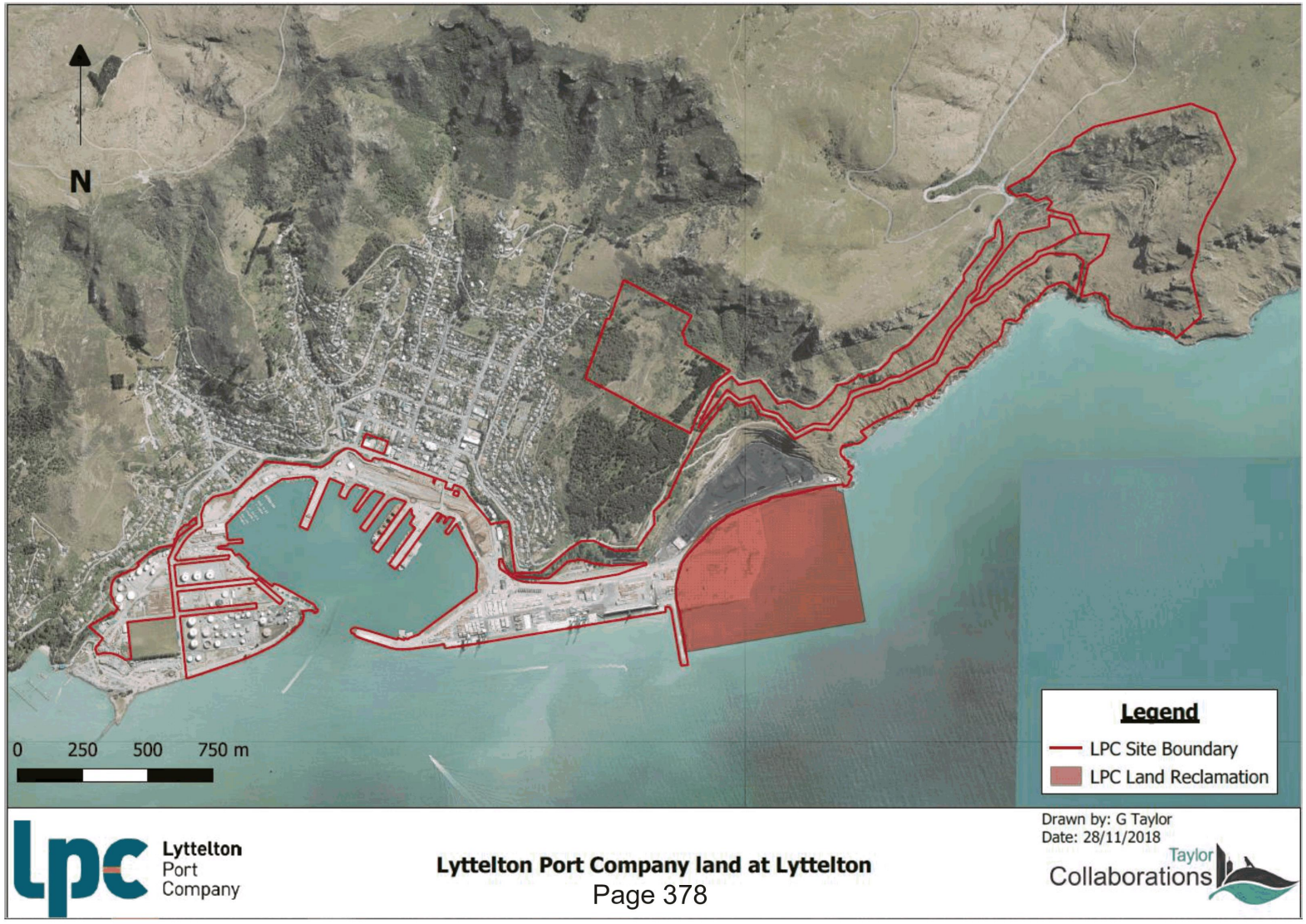
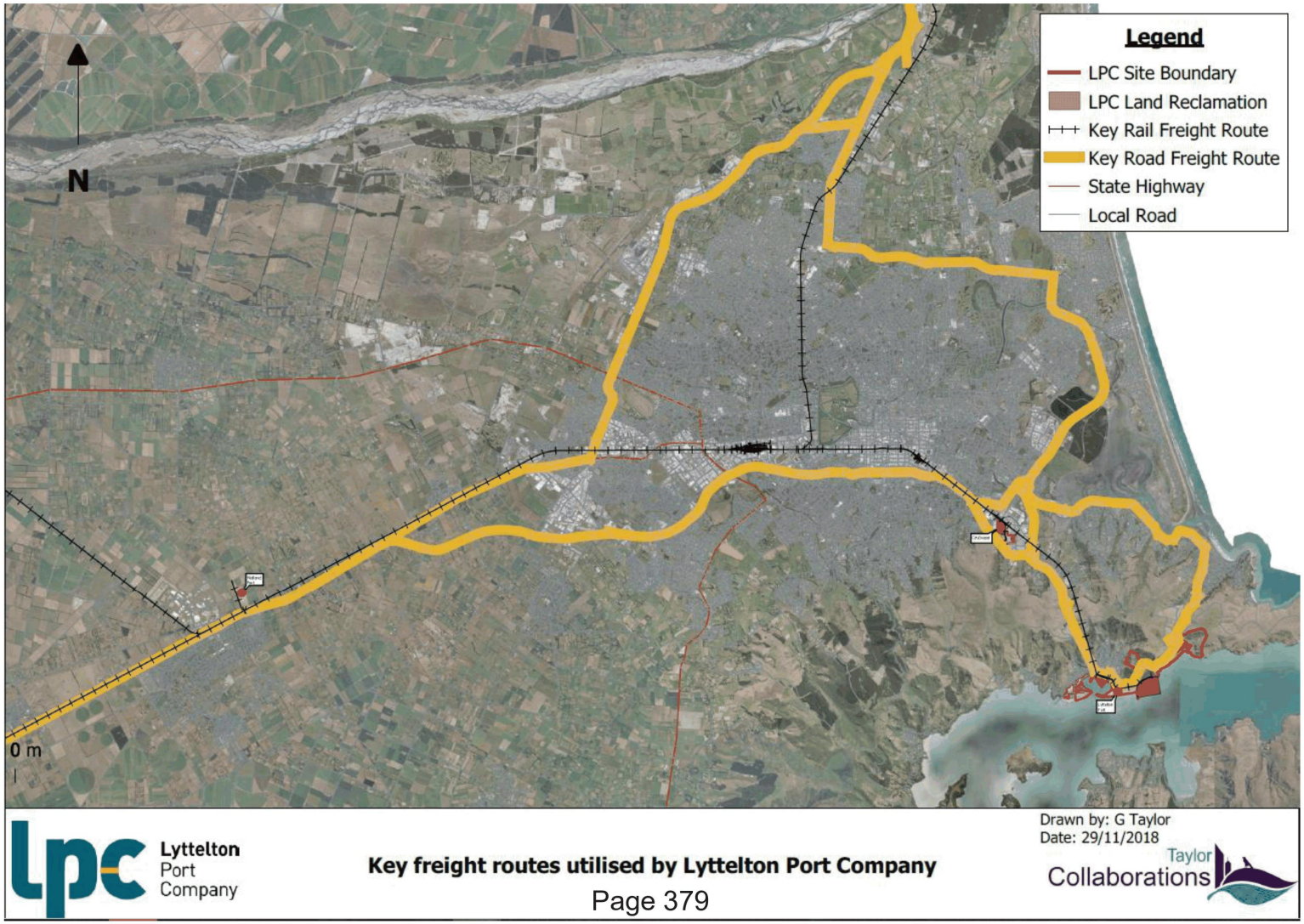
Appendix 1: LPC Land at Lyttelton Port



Appendix 2: Key Road and Rail Freight Routes Utilised by LPC



Submission No: 005	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via post-**	
Submitter details	
First name	Drucilla
Last name	Kingi-Patterson
Email	n/a
Street name and number	[redacted]
Suburb	[redacted]
Town/City	Christchurch
Postcode	8053
I am completing this submission	
Hearings	
Do you wish to speak to the hearings panel?	Yes
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	
Comment	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	
Comment	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	
Comment	
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	

Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	
Attachments: written submission received 19 November 2018	

Mrs Drucilla King-Patterson

(Note
Do not have computer skill level
to Scan and email
this Document
Would like to speak at
Hearings *)

Deadline 30 November 2018

Priscilla
King - Patterson

- Our Space - 2018 - 2048

First you must be aware following the news TV1, TV3 over the last month

The Vision for Aotearoa / New Zealand
is to host
2030 Rugby World Cup
2030 Commonwealth Games
I'm picking Auckland - 2028 New Rail link
Finished
1.8 Billion Rail Developement in Auckland
1 Billion Walk Development / inner city
New Stadium Project - Auckland
(more light rail)
2020 - American Cup - Auckland Waiheke

Christchurch 2020
New Stadium + Museum
New Convension Centre
Repair Town Hall, New Central Library, Bus Exchange
Developement inner city
Developement housing Canterbury

Selwyn population will increase more than
Rangiora which is growing - Workers / Families
Increase complex developement in
NZ concerning Elderly care.

Dunedin Developement Shell Complex
Walk - increase Tourism
It company does work on graphic American Cup.

9/11/2018

Queens Town. - Went in with Promoters of Festival on the Snow - increase tourism

Kaikoura - Whale watch - New Hotel Multi Story along beach each

Would like Christchurch to host "2026 Commonwealth Games"

Another thought if NZ won the rights to host the 2030 Commonwealth Games is Auckland who has hosted it twice and has natural disaster - could the South Island host it at short notice This will effect how you design and developpe the Region.

* I would like to speak at Hearing Panel *

Population Growth Projection 640,000
150,000 more than to day

Our Space - 2018 - 2048
Greater Christchurch
Settlement Pattern Update.
Submission Deadline - 30 November 2018

Civil Defence Zones

My Concern with population growth and developement of housing is Civil Defence zones

Is building in Areas which should be made Civil Defence Zones that is areas that can not be sold or built on they must be Alligated as Civil Defence zones.
eg Hagley Park, Wigram Park
My concern if we have another earthquake where do people go
These zones determine where we build.

Also we must not lose good food producing farm land.
eg Farm Zone Areas.

You will build New Stadium, Conference centre, Library 120,000 people a week
Where are your civil defence zones

Regular Working income
Since the 2017 Elections the dimatics of your pool of workers has changed - The Market has and will become too dependant on Government Contracts Workers went from permonent contract - end of job Casher on call this was fine when their were big projects
Now you have a Intellectial Pool of Skill Workers moving out of Christchurch and New Zealand seeking permonent work that pays them for their skill level or out of the Industry

The Weather pattern of Canterbury over the last three years unstable if it rains you dont get paid. Te Benifit does not cover debit - Process through Winz too slow. High Stress among workers.

4.

This will effect peoples ability to buy and maintain good afordable housing stock.

You need adult apprentships to maintain and develope Intelectual Skills

You also need youth apprentships and caditships

Government Contracts need to be processed better.

You also need good mentoring programes.

Automation & Envireomental issues

Automation & Envireomental issues, zero carbin, water, will demand additional adult & youth on going training to keep job ready and employed in a changieng economy

Many may move into jobs that don't exis at present So transport around Canterbury to access Linkoln, Ara, Canterbury University from Rangiora to Rolleston will either decress or incress the movement of workers plus have a big effect on the Growth of the Economey. Intellectual workforce need good access to Educational training This will also effect the growth of new products and services. Also need better access to Medical Hospitals.

We need light rail Amberly to Ashburton and Back christchurch central to Lincoln

I have been hearing light rail over twenty years. biggest problem community not being heard. Too many personalities among goveriment and councils - It will 3 Councils plus goveriment to pay for it. Cost quite high
Need for new technology in rail developement.

- My Concern with My Space 2018 - 2048 consultation document
Is no mention of immagration numbers
No mention of working carers in non paid and paid work
Plus location of Medical Services and Access.
In Christchurch and Canterbury is a high percentage of young and older people with mental Health issues - Many will not be in a position to access kiwi saver or keep regular employment to obtain a big deposit to buy their own homes. or obtain and maintain a mongage.
We will need to have a pool of social housing. at an affordable level. Social housing also needs to be located near medical services. Near training providers.

Before the 2011 earthquake I had a mental disabled Brother for 26 years through being hit by a car on his bike aged 14 on a school trip. We lost him a week before 2011 earthquake.
Finding suitable housing for disabled people who can look after themselves with support very limited and no longterm solutions

Sometimes you here of people (young) some times having to go into rest homes with elderly because they cannot access suitable accomindation.

You will also need low rental accomindation for elderly we have an ageing population.

6a

Note

Once the consultation process is complete
It would be wise to access data from Statistic
on the 2017 Elections this data is not out till 2019.

How many people work in paid work and care
for someone in their home or another location?

How many people do not work and care
for someone in their home or another location

numbers of special need children
number of children
number of elderly

Income of workers, ages and types of Jobs
Even that will change now big construction projects
have stopped in Canterbury

Alot of data at present based on
2006, 2013 data it gives a false picture

When Lianne Dalziel was an immagration MP
Immagration was 96 year (2012) (96,000)
National 2016 77 year (77,000)
Labour 2018 do not have figures I know it has decressed.

Note I had a Dear friend who had to move herself
and her husband into Christchurch from
Rangiora because they had to drive in
regularly to Hospital for Dialysis they
would have loved to stay in their own home and
go in by train both 70 years of age

- I know someone else who had to move
into Christchurch because she was going
Blind.

6

Dawcilla King: Patterson
12 Cardrome Street
Christchurch 5th
8053

Dataset: Unpaid activities (total responses) by ethnic group (grouped total responses) and sex, for the census usually resident population count aged 15 years and over, 2006 and 2013 Censuses (RC, TA, AU)

Ethnic group		Total people, ethnic		Maori		Total people, sex	
Sex							
Year		2006	2013	2006	2013	2006	2013
Area	**Unpaid activities**						
Total, New Zealand by regional council/area unit	Total people, unpaid activities	3160371	3376416	365406	396288	3026148	3189504
	Household work, cooking, repairs, gardening, etc, for own household	2446833	2590302	282450	310623	2433507	2580207
	Looking after a child who is a member of own household	897915	924645	143997	152913	893571	921624
	Looking after a member of own household who is ill or has a disability	221229	223155	41736	45465	219768	222066
Total, New Zealand by territorial authority/area unit	Total people, unpaid activities	3160371	3376419	365406	396285	3026148	3189507
	Household work, cooking, repairs, gardening, etc, for own household	2446836	2590302	282453	310623	2433507	2580207
	Looking after a child who is a member of own household	897915	924645	144000	152913	893571	921624
	Looking after a member of own household who is ill or has a disability	221229	223155	41736	45465	219768	222063

data extracted on 01 Nov 2018 03:30 UTC (GMT) from NZ.Stat

Our Space 2018-2048 - Submitters Hearing Schedule for THURSDAY 28 February

Please note that there may be some changes to this schedule as commitments change and some unplanned rescheduling may be required. We apologise in advance for any inconvenience this may cause.

Schedule Updated 17 February 2019

Day 4 [Thursday 28 Feb] Selwyn District Council - Council Chamber			
Time	**Submitter Number**	**Submitter/Presenter**	**On behalf of…**
9.00	#78	Melanie (RM Group)	Lincoln University
9.20	#66	Melanie (RM Group)	AgResearch
9.40	#55	Mark Brown	Hughes Developments Ltd
10.00	#30	Julian Odering	Oderings Nursery
AMT [10.20]			
10.40	#69	Fiona Aston	Lincoln Developments Ltd
11.00	#72	Fiona Aston	Kevin and Bonnie Williams
11.20	#23	Fiona Aston	Ivan Robertson, Lindsay and Judith Blackmore and Malcolm Main
11.40	#24	Fiona Aston	CFA Holdings Ltd - South Rolleston
12.00	#22	Fiona Aston	Sharon Jones
LUNCH [12.20]			
13.20	#26	Fiona Aston	Ellis Darussette Ltd
13.40	#60	Fiona Aston	GFR Rhodes Estate & Larson Group
14.00		Fiona Ashton experts	Additional time requested on behalf of all their clients
14.20			
14.40			
15.00			
PMT [15.20]			
15.40	#1	Lloyd Bathurst	
16.00	#33	Courtney Inch	Majority Beneficiaries of Bellgrove Family
16.20	*#28*	*Marg Springer*	*Awaiting submitter confirmation*
16.40	#91	Angeline Holton	Landowners ODP12

TO Our Space Consultation
Greater Christchurch Partnership
P O Box 73012
Christchurch 8154

FROM **Geoffrey Marks**
Lincoln University
P O Box 85084
Lincoln, 7647

Note. see different address for service below.

In the matter of Our Space 2018-2048, Greater Christchurch Settlement Pattern Update

The Greater Christchurch Settlement Pattern update (the update) proposes changes to the Greater Urban Development Strategy (UDS) and is a review of the land use planning framework for Greater Christchurch. It outlines the Greater Christchurch Partnerships proposed settlement pattern and strategic planning framework to meet land use and infrastructure needs over the medium (next 10 years) and long term (10-30 years) periods.

With regard to the Selwyn District, the update describes the following anticipated outcomes for Rolleston and Lincoln:

> *"Rolleston continues to grow as the principal centre in Selwyn, with a range of new developments supporting a vibrant town centre and the choice of housing broadening to reflect the changing demand profile of the growing town. Industrial and large format retail expand around the I-Zone Southern Business Hub, benefitting from improved connections across State Highway 1. Lincoln develops while retaining its village and university character, with opportunities emerging from new academic and business partnerships through the Lincoln Hub initiative"* (page 21).

Figure 16 of 'the Update' shows the proposed locations of future development areas in greater Christchurch. It is noted there are no new Future Development Areas indicated for Lincoln. Of interest to Lincoln University is the Future Development Areas for Rolleston and the location of these in relation to Lincoln University's land holdings. Such facilities are used for rural research purposes and often operate in a diverse manner from what may be experienced in a "typical" farming operation. Given this Lincoln University, along with a number of other Crown Research Institutes have long maintained the need to provide sufficient buffer or separation distances from research farms and urban development – this has occurred by way of participation in earlier UDS processes, changes to the Selwyn District Plan and resource consent applications. Given the specialist and enduring nature of some of the research being undertaken on these sites, Lincoln University has also argued the need to maintain separation from urban development for security reasons.

The projected infrastructure boundary as it relates to Rolleston will be some kilometres from the future development areas outlined on the south east side of Rolleston and the nearest Lincoln University landholding. With regard to Lincoln township the Projected Infrastructure boundary

remains unchanged. Lincoln University therefore wish to reinforce the need to maintain the Projected Infrastructure Boundary in its current proposed position as it relates to both Rolleston and Lincoln in order to avoid future reverse sensitivity effects on Lincoln University's activities on their land holdings.

Concluding Comments

Thank you for the opportunity to provide comments on Our Space 2018-2048, Greater Christchurch Settlement Pattern update.

Lincoln University wishes to be heard in support of their submission and the preferred location is Rolleston.

Lincoln University
30th November 2018

Address for Service:
C/- Resource Management Group Limited
PO Box 908, Christchurch Box Lobby
CHRISTCHURCH 8140

Phone: 962 1738
Email: melanie@rmgroup.co.nz

Attention: Melanie Foote

Submission No: 066

TO Our Space Consultation
Greater Christchurch Partnership
P O Box 73012
Christchurch 8154

FROM **Elaine Chapman**
Site Manager
AgResearch
Private Bag 4749
Christchurch 8140

Note. see different address for service below.

In the matter of Our Space 2018-2048, Greater Christchurch Settlement Pattern Update

The Greater Christchurch Settlement Pattern update (the update) proposes changes to the Greater Urban Development Strategy (UDS) and is a review of the land use planning framework for Greater Christchurch. It outlines the Greater Christchurch Partnerships proposed settlement pattern and strategic planning framework to meet land use and infrastructure needs over the medium (next 10 years) and long term (10-30 years) periods.

With regard to the Selwyn District, the update describes the following anticipated outcomes for Rolleston and Lincoln:

"Rolleston continues to grow as the principal centre in Selwyn, with a range of new developments supporting a vibrant town centre and the choice of housing broadening to reflect the changing demand profile of the growing town. Industrial and large format retail expand around the I-Zone Southern Business Hub, benefitting from improved connections across State Highway 1. Lincoln develops while retaining its village and university character, with opportunities emerging from new academic and business partnerships through the Lincoln Hub initiative" (page 21).

Figure 16 of 'the Update' shows the proposed locations of future development areas in greater Christchurch. Of interest to AgResearch is the Future Development Areas for Rolleston and the location of these in relation to AgResearch's land holdings within the rural zone. Such facilities are use for rural research purposes and often operate in a diverse manner from what may be experienced in a "typical" farming operation. Given this AgResearch, along with a number of other Crown Research Institutes have long maintained the need to provide sufficient buffer or separation distances from research farms and urban development – this has occurred by way of participation in earlier UDS processes, changes to the Selwyn District Plan and resource consent applications. Given the specialist and enduring nature of some of the research being undertaken on these sites, AgResearch has also argued the need to maintain separation from urban development for security reasons.

In this case it is not proposed to change the projected infrastructure boundary at the south east side of Rolleston, but it is proposed to extend the future development area to that infrastructure boundary. As a consequence, urban development will ultimately be some 1.4km from the nearest AgResearch landholding (see the attached plan).

With regard to Lincoln township the Projected Infrastructure boundary remains unchanged. Ag Research therefore wish to reinforce the need to maintain the Projected Infrastructure Boundary in its current proposed position as it relates to both Rolleston and Lincoln in order to avoid future reverse sensitivity effects on Ag Research activities on their land holdings.

Concluding Comments

Thank you for the opportunity to provide comments on Our Space 2018-2048, Greater Christchurch Settlement Pattern update.

AgResearch wishes to be heard in support of their submission and the preferred location is Rolleston.

AgResearch
30th November 2018

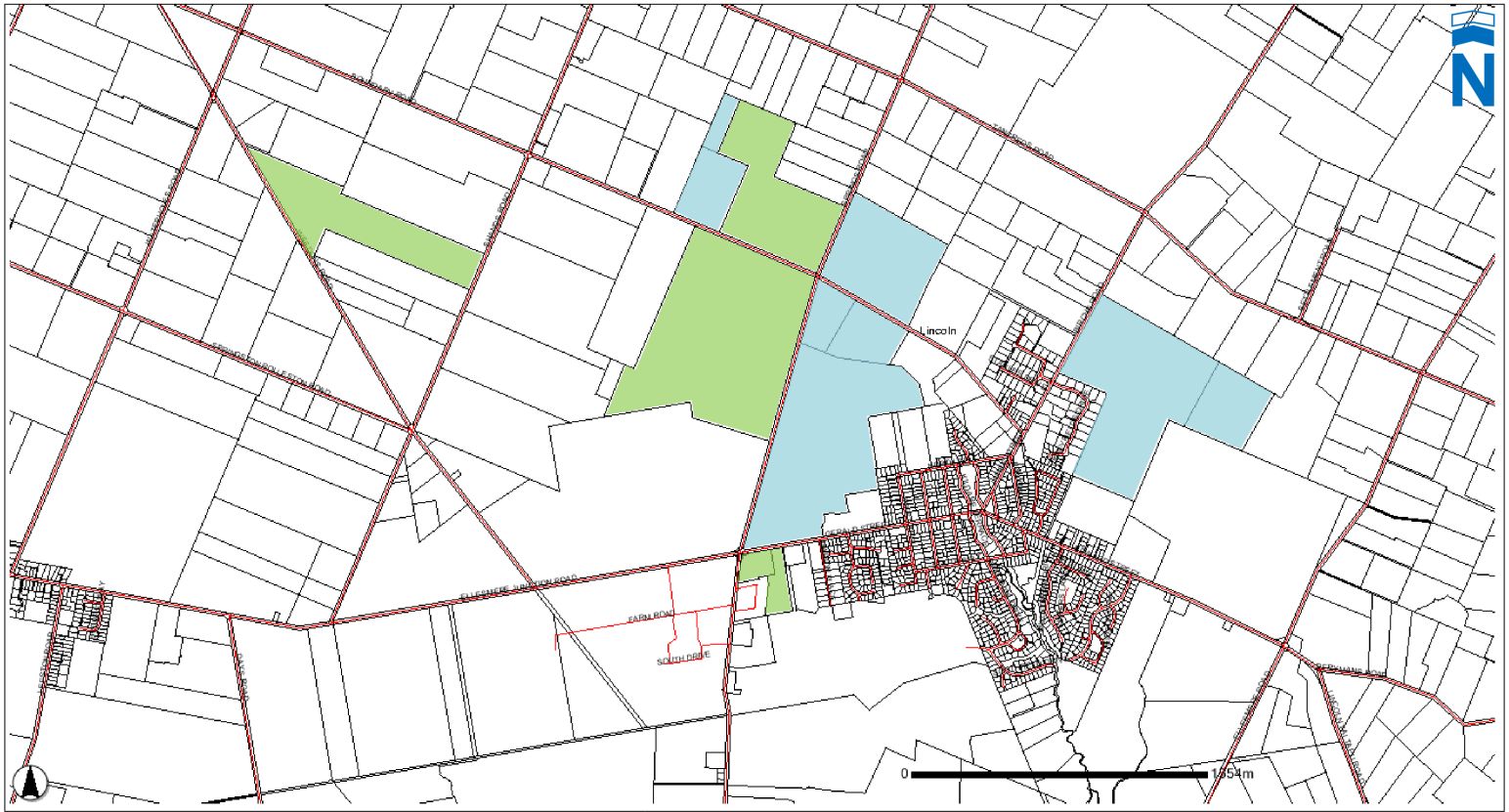
Address for Service:
C/- Resource Management Group Limited
PO Box 908, Christchurch Box Lobby
CHRISTCHURCH 8140

Phone: 962 1738
Email: melanie@rmgroup.co.nz

Attention: Melanie Foote

Attachments: Map showing Ag Research Landholdings

Submission No: 066
Attachment 1



LEGEND

AgResearch facilities

NZ Institute for Plant & Food Research facilities

Current Landholdings in Lincoln Township: AgResearch and NZ Institute for Plant & Food Research.

Source imagery for Map Base: Environment Canterbury GIS. January 2010.

rmg
Resource Management Group Ltd

Page 395

Attachment D Item 4

Submission No: 055		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Mark	
Last name	Brown	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Christchurch	
Postcode		
I am completing this submission	On behalf of a group or organisation	Hughes Developments Limited
Hearings		
Do you wish to speak to the hearings panel?	I wish to speak at the hearings	
Phone number	[redacted]	
Preferred location to be heard	Rolleston	
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	
Comment	HDL supports the provision of additional greenfield land in Rolleston. The growth of Rolleston commercial, industrial and community infrastructure continues to drive residential growth (along with other factors). Current supply levels identified in the capacity assessments potentially do not reflect what is actually happening in this space and the provision of additional greenfield land is essential.	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat agree	
Comment		
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment		
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Somewhat agree	
Comment		
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*		
Agree/disagree	Neither agree nor disagree	
Comment		

Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Somewhat disagree
Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat agree
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	
Attachments	

Submission No: 030

Submission Form

Greater Christchurch Partnership
Te Tira Tū Tahi
One Group, Standing Together

HAVE YOUR SAY BY 30 NOVEMBER 2018

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

How to make a submission

Online: Make a submission using the online submission form at www.greaterchristchurch.org.nz/ourspace

Email: ourspace@greaterchristchurch.org.nz

Post: Our Space consultation, Greater Christchurch Partnership, PO Box 73012, Christchurch 8154

Hand deliver: Civic Offices, 53 Hereford Street

SUBMITTER DETAILS

Name: Julian Russell Odering

Address:

Email:

I am completing this submission: ☐ For myself ☑ On behalf of a group or organisation

If you are representing a group or organisation, how many people do you represent? 22.

HEARINGS

Hearings are planned for February 2019.

Do you wish to speak to the hearings panel?

☑ Yes, I wish to speak at the hearings ☐ No, I do not wish to speak at the hearings

If you wish to speak at the hearings, please indicate your preferred location to be heard and provide a contact number.

Preferred location: ☐ Christchurch City ☐ Rangiora ☑ Rolleston

Contact number:

Item 4 Attachment D

QUESTIONS

The questions below may help you structure your submission in relation to the various aspects covered in **Our Space 2018-2048**. Section 5.7 of **Our Space** briefly outlines some alternative options considered when preparing this document. You can make submission points under each question and/or other and more general comments under question 9.

Housing growth

Question 1

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree or disagree with this approach and why?

☐ Agree ☑ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

There is plenty of excess land in and around our 4 Ha Garden centre at 205 Cashmere Road closer to town and able to be developed with room for parks cycle ways ect. Creating less Carbon footprint Being close to where people work. Traffic flows are banked up now travelling to work upto 1.5 hours.

Question 2

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why?

☐ Agree ☑ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

Despite Many Submissions to have excess land made into development We are constantly blocked by the C.C.C and E.Can Even though we have agreed to put substantial compensatory Storage It makes Better Seanse to use Surplus land closer to the central city

Question 3

Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home.

What elements should be included in this action plan?

The RMA is a road block to affordable housing as is Many council charges with building consents As well as stringent Health & Safety issues.

Business growth

Question 4

Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why? What further measures would support such development?

- [x] Agree
- [ ] Somewhat agree
- [ ] Neither agree nor disagree
- [ ] Somewhat disagree
- [ ] Do not agree

After the earthquakes Many commercial developments left the city for Surborban or towns. This i support because the city centre is difficult to park in with congestion and confusing road layouts. I would rather shop outside the central city.

Question 5

The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses.

Do you agree or disagree this is sufficient and in the right location and why?

- [ ] Agree
- [x] Somewhat agree
- [ ] Neither agree nor disagree
- [ ] Somewhat disagree
- [ ] Do not agree

Growth needs

Question 6

The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.

Do you agree or disagree with our evidence base and why?

☐ Agree ☑ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

Again Central goverment moves slow in rezoning land with resource consents, Building consents When there is so much call for more land to be developed. The process needs to be Sped up.

Transport and other infrastructure

Question 7

Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors.

Do you agree or disagree with this approach and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☑ Somewhat disagree ☐ Do not agree

People Prefer to Live close to where they work Most People dont trust public transport & cycleing is Somewhat unsafe and Weather dependent. also public transport is liable for disruption as in Auckland & Wellington. Central City is Becomming Vehicle unfriendly.

Question 8

Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.

Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

☐ Agree ☑ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

land we wish to develop has most infrastructure close by. Restricting our land development when Millions more would be spent elsewhere establishing new $ infrastructure makes no sense.

Other

Question 9

What other points do you wish to make to inform the final **Our Space 2018-2048: Greater Christchurch Settlement Pattern Update**?

To develop Greenfield land close to infrastructure such as Power, Sewer, Water supply, Schools, churches, Roads cycleways, Hospitals ect just makes life easier for councils and residents. Many of the landowners close to us wish to put a comprehensive plan together to develop land. Despite countless submissions to E can & C.C.C we have been blocked out. This is unjust and unwarranted.

Submissions are public information

We require your contact details as part of your submission — it also means we can keep you updated throughout the project. Your submission, name and contact details are given to decision-makers to help them make their decision.

Submissions, identifying submitter names only, will be made available online. If requested, submissions, names and contact details may be made available to the public, as required by the Local Government Official Information and Meetings Act 1987.

If you consider there are compelling reasons why your name and/or feedback should be kept confidential please outline this in your submission.

LEWIS & BARROW LTD
Consulting Civil And Structural Engineers



Page 403

Submission No: 069

aston CONSULTANTS
resource management & planning

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

Lincoln Developments Ltd

November 2018

Greater Christchurch Partnership

Submitter Details

Name: Lincoln Developments Ltd
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

I wish to speak at the hearings.
Preferred location: Selwyn District Council
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background:

The following background provides the context to this submission on **Our Space.** The Submitter, Lincoln Developments Ltd ('LDL') has made submissions on the Selwyn District Plan Review and Selwyn Long Term Plan to enable further development of its existing Flemington residential subdivision at north Lincoln. It wishes to continue development northwards to Tancred Road, onto land currently zoned Rural Inner Plains. A copy of the LTP submission is attached as **Appendix B**.

Tancreds Rd is the logical long term urban boundary for north Lincoln between Birchs Road and Ellesmere Road. It is already the zoned northern limit of urban development west of Birchs Road. This land should be rezoned progressively 'over time' to Living Z to meet the projected ongoing demand for sections in this part of Lincoln, and to achieve a logical 'urban form'.

Flemington subdivision has a land area of 58ha and is now largely developed. A minimum of 33.68 ha of land needs to be rezoned now to enable development to proceed to meet demand. The balance of the land between the current urban boundary and Tancreds Road west of Birchs Road (as shown on the **Appendix A** map) should be identified as a Future Development Area.

Please note that since the Long Term Plan submission was lodged in May 2018, LDL have elected not to proceed with purchase of the Lincoln North block (8.6ha owned by J & M Cooke). This block is zoned Living Z and adjoins the north boundary of the Flemington subdivision (and is within ODP Area 3). This would have accommodated another 50 sections and a potential commercial area of just under 2ha. The commercial development is now likely to proceed on land to the south, owned by LDL and already approved for residential subdivision (an amended subdivision consent is in preparation). This will mean the loss of 20-30 residential sections from the existing LZ zoned area.

Relief Sought:

The changes which the Submitter requests are in line with its responses and reasons are outlined below. Additions are underlined and in bold and deletions are strike through.

1. Amend **Our Space** Fig 16: Proposed locations of future development areas in Greater Christchurch as follows:-
   Amend by adding additional Greenfield Priority – Residential and Future Development Areas at north Lincoln as shown on Appendix A map 'Lincoln – Additional Greenfield Priority – Residential and Future Development Areas'

2. 6.2 Schedule of future work
   Amend 8 (page 34) as follows:-
   Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement as follows:-
   - amending Map A to be consistent with the relief sought in this submission (including 1. above and 3. below); and
   - provide flexibility to accommodate meritorous proposals for urban development and zoning and to facilitate a responsive planning approach to management of urban growth of Greater Christchurch by amending and adding to the objectives and policies as follows (insertions in bold and underlined):-

   Add new Policy 6.3.1A as below:-
   Policy 6.3.1 A

(a) Enable urban development or urban zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

(i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

(ii) Any additional land will integrate with the provision of infrastructure; and

(iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

(iv) The urban development or urban zoning will have beneficial planning outcomes; and

(v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritorous proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land capacity assessments which have informed Map A, and with the primary drivers and influencers of urban development in Greater Christchurch.

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 **or which has only minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.1 Development within the Greater Christchurch area

In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS **or which have minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.7 Residential location, yield and intensification
In relation to residential development opportunities in Greater Christchurch:

7. Subject to Policy 5.3.4, residential greenfield priority area development shall occur **generally** in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.

3. Specify in **Our Space** that Fig 16 be included in District Plans rather than the Canterbury Regional Policy, thus facilitating the ability for private plan requests for changes to the same, with appropriate criteria for assessment being included in the CRPS and/or District Plans; or as a less preferred alternative, other methods to retain flexibility and 'future proofing' to respond to meritorous housing and business development proposals which give effect to the NPS-UDC but are not recognized or provided for in **Our Space** and supporting documents.

4. Consider other amendments to the CRPS and other documents and other actions which are appropriate to facilitate a responsive planning approach to management of urban growth of Greater Christchurch.

5. Consider streamlined RMA or other processes to facilitate the amendments sought which are specific to the Submitters' land and which provide flexibility to provide for meritorous zoning and urban development, including associated policy wording. Do not use streamlined processes for implementation of the overall **Our Space** strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

6. Any further, consequential or alternative amendments to any documents, and other actions which meet and give effect to the intent of this submission.

Reasons for Relief Sought:-

1. For the reasons set out in LDL's responses to the Submission Form questions below.
2. The housing and business capacity targets, urban form outcomes, and Schedule of Future Work measures (including changes to the CRPS) contained in '**Our Space'** will have a

profound and defining effect on the Greater Christchurch settlement pattern for the next 30 years. There will be significant flow on effects for the local, regional and potentially national economies. There is an acknowledged high level of uncertainty with the housing and business lands capacity assessments. The adopted approach is aspirational and untested with its focus being redevelopment and intensification of existing urban areas, underpinned by an as yet unfunded *"vision for transformation of the transport network that fosters much greater pubic and active transport usage, and reduced reliance on the private vehicle".*[1] Despite this, there is no s32 assessment accompanying **Our Space.**

3. The amendments sought will enable land at north Lincoln between the current urban boundary and Tancreds Road, west of Birchs Road, to be used in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).
4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects Lincoln township, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.
5. The **Our Space** housing land development capacity targets are uncertain, inaccurate and based on a flawed methodology.
6. **Our Space** considers a responsive planning approach to future the management of the Greater Christchurch urban growth but does not facilitate or enable this, whereas the relief sought is this submission does.
7. **Our Space** as notified is contrary to and does not give effect to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular Policy PB1 which requires housing capacity supply to meet demand for different types, locations and price points.
8. A fixed uncontestable urban/rural boundary line for Greater Christchurch as proposed by **Our Space** is unlikely to facilitate the urban form sought by **Our Space** including for the following reasons:-
    - Overly strict limitations on peripheral growth causes excessive land price inflation that in turn has a very negative effect on housing affordability;
    - A planning regulatory regime which provides for a contestable urban/rural boundary sends an important signal to the property market that it is best to get on with development rather than "land bank" (because there is excessive capital gain due

[1] Open Space p 19

to scarcity of land supply);

- Containment and higher land values does not facilitate intensification;
- If the Central City and the Key Activity Centres are attractive the market will locate there by people's choice. Generally carrots are better than sticks to achieve desired planning outcomes.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

Our Space has a 30 year time horizon. It makes no provision for further greenfields development in Selwyn District, other than at Rolleston. Its housing capacity assessment treats Selwyn District settlements combined as a single housing market. This approach is flawed, not supported and is contrary to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular Policy PB1 which requires housing capacity supply to meet demand for different types, locations and price points. Each township has a different character, housing market and demand profile.

Lincoln is a Key Activity Centre. **Open Space** proposes to consolidate urban development in and around the larger towns in Selwyn and Waimakariri and also respond to the anticipated strong demand for high density housing in the City. Despite this approach, no provision whatsoever is made for further growth beyond the existing greenfield areas at Lincoln. This is contrary to the above 'consolidation' approach.

There is clearly a strong unmet demand for further greenfield development at north Lincoln in a location which will have 'urban form' benefits i.e northwards to Tancreds Road.

Open Space acknowledges that its housing capacity work is uncertain, in particular assessment of the commercial feasibility of development, and that work is required to improve the modelling tools used. It recognizes that given the range of reported feasibility, capacity may not be sufficient

to meet demand over the medium term in Waimakariri and Selwyn.[2] Notwithstanding no provision is made for further capacity in the medium capacity anywhere in Selwyn, and only at Rolleston in the long term. **Our Space** also recognizes that a responsive planning approach is required given the many uncertainties associated with the primary drivers and influencers of urban development in Greater Christchurch.

Our Space as it affects Lincoln township is the opposite of 'responsive' planning, and does not facilitate resilience which requires the ability to respond with options in the face of an uncertain future and/or major unforeseen events. For example, Greater Christchurch was able to respond and recovery relatively quickly from the 2010/2011 earthquake sequence because substantial areas of greenfield housing in Selwyn and Waimakariri Districts in particular (but also at Prestons and south west Halswell) were able to be brought 'on line' quickly.

Question 2:
Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.
Do you agree with this approach and why?

Response:
No comment other than to note the experience at Flemington is that there is strong demand for small lot medium density lots in the 300-500m^2 size range which can accommodate single storey stand alone 2-3 bedroom houses with double garage. There is very little if any demand for comprehensive medium density housing (300m^2 and less and generally two storey terrace and duplex housing). Requirements for comprehensive medium density housing to be erected to roof stage prior to issue of title is challenging and not 'workable' for development financing.

Question 3:
Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.

[2] Our Space page 13

What elements should be included in this action plan?

Response:
No comment.

Business Growth

Question 4:

Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.

Do you agree with this approach and why? What further measures would support such development?

Response:
No comment.

Question 5:

The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.

Do you agree or disagree this is sufficient and in the right location and why?

Response:
No comment.

Growth needs

Question 6:

The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.

Do you agree or disagree with this evidence base and why?

Response:

No – see response to Question 1 and Reasons for Relief Sought above.

Transport and other infrastructure

Question 7:

Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.

Do you agree or disagree with this approach and why?

Response:

No response, other than to note Flemington subdivision has been developed so that it can accommodate public transport routes (bus routes) and there are options for the Rail Trail to extend through the subdivision linking with the Lincoln town centre.

Question 8:

Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.

Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:

No response, other than to note that there are no known servicing issues with residential development of land north of the existing Flemington subdivision to Tancreds Road.

Other

What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

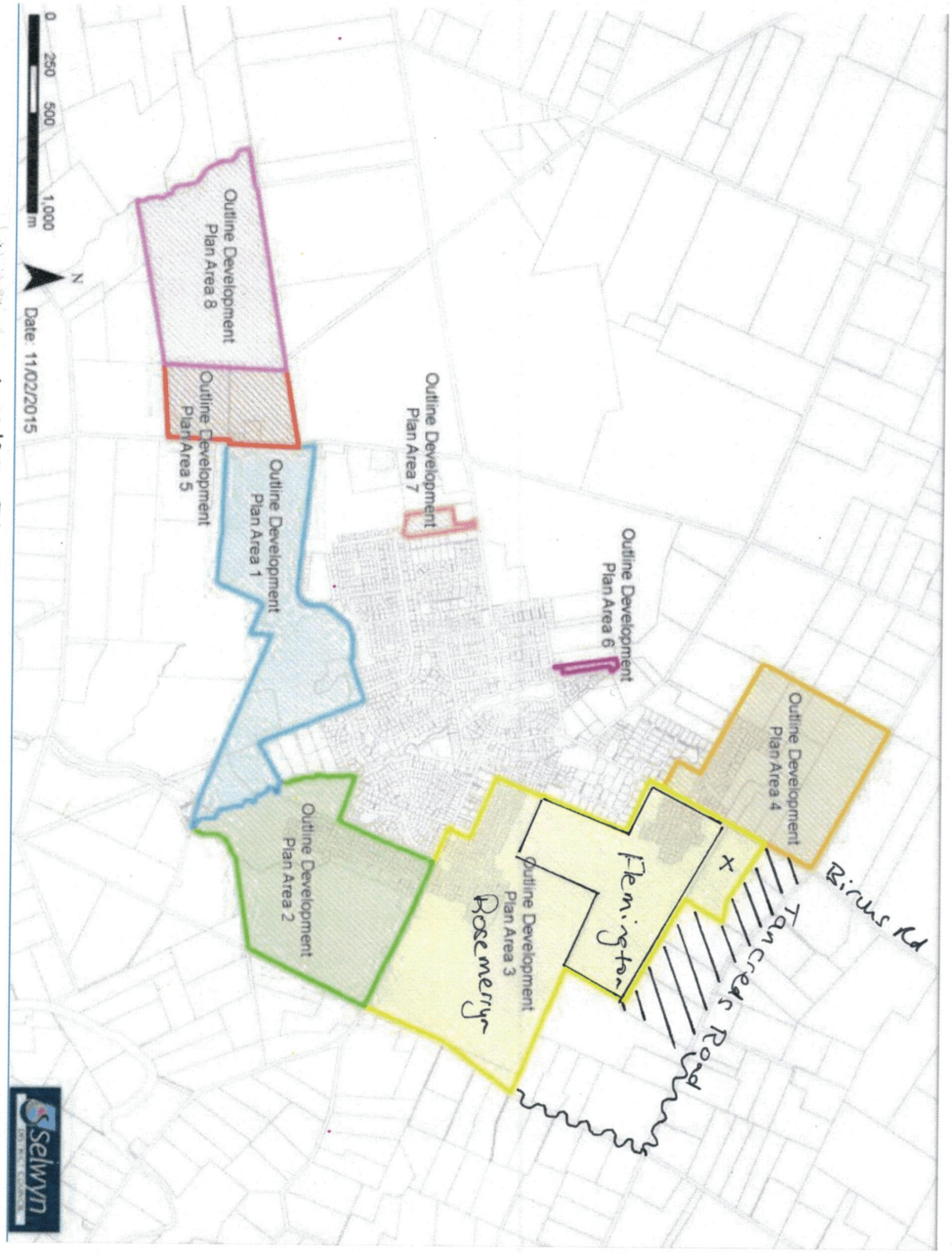
Response:

No further comments other than as noted above under 'Submitter Background', 'Relief Sought' and 'Reasons for Relief'.

Appendices

Appendix A: Amendments to Outline Development Areas – Lincoln

Appendix B: Submission on Selwyn Long Term Plan 2018-2028



Lincoln - Additional Greenfield Priority Residential + Future Development Areas

× NOR Block.

Greenfield Priority Area - Residential

Longer Term Lincoln North Boundary (post 2028) - Future Development Area

aston CONSULTANTS
resource management & planning

A PO Box 1435 Christchurch 8140 P 03 3322618 M 0275 332213
E info@astonconsultants.co.nz W www.astonconsultants.co.nz

SUBMISSION ON SELWYN DISTRICT PLAN LONG-TERM PLAN 2018 – 2028

To: The Chief Executive
Selwyn District Council
PO Box 90
Rolleston 7643

Name: Lincoln Developments
Postal Address: c/- Aston Consultants Ltd
PO Box 1435
Christchurch 8140
Telephone: 03 3322618/0275332213
Email: info@astonconsultants.co.nz

Our Submission:

We seek amendments to the Selwyn District Long-Term Plan 2018-2028(LTP) in order to make appropriate provision for servicing Lincoln for urban residential purposed (LZ zoning or equivalent) northwards to Tancreds Rd as shown on the amended Lincoln Outline Development Plans (ODPs) map attached as **Appendix A**.

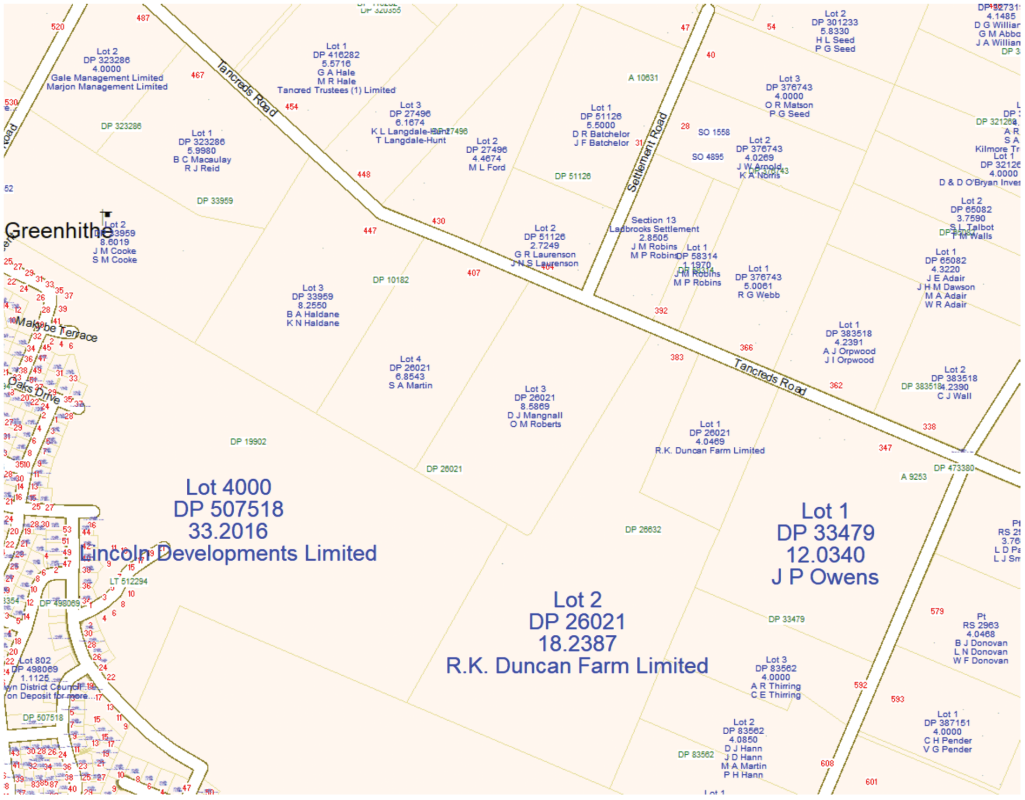
Reasons for Submission:

1. Tancreds Rd is a logical long term urban boundary for north Lincoln between Birches Road and Ellesmere Road. Tancreds Road is already the zoned northern limit of urban development west of Birches Road. This land should be rezoned progressively 'over time' to Living Z to meet the projected ongoing demand for sections in this part of Lincoln, and to achieve a logical 'urban form'.

2. A minimum of 33.68 ha of land currently zoned Rural Inner Plains on the east side of Birchs Road between the current urban boundary and Tancreds Road and north of the Flemington development should be rezoned now to meet demand over the LTP planning period i.e. land legally described as:-

   - Lot 2 DP 323286 (4 ha);
   - Lot 1 DP 323286 (5.998 ha);
   - Lot 3 DP 33959 (8.255 ha);
   - Lot 4 DP 26021 (6.85 ha);
   - Lot 3 DP 26021 (8.58 ha);

   (see also copy of relevant Quick Map with location of above sections below)



3. The balance land currently zoned Rural Inner Plains between the current urban boundary and Tancreds Road and west of Birches Road should identified for urban development in the Future Development Strategy required under the National Policy Statement – Urban Development Capacity (NPS – UDC) – in accordance with the amended Lincoln ODPs map in **Appendix A**.

4. There will be a need for further development land in north of the Flemington North block within the next 3 years to meet demand. Flemington subdivision has been developing residential sections for 4 ½ years now and has sold approximately 430 of the 615 sections it had to offer. Flemington has a land area of 58ha and has recently purchased 8ha to the north which will accommodate another 50 sections and a potential commercial area of just under 2ha. Our timeframe to complete the Flemington subdivision and the new land to the North is approximately 3 years.

5. We have made provision for access roads into the land between the North block and Tancreds Road for future development as this is the obvious growth area for Lincoln. The north eastern portion of the approved subdivision plan for the original 615 sections has not yet been developed, and the section layout enables sections to be retained by the developer to facilitate future development to north.

6. Our neighbouring subdivision Rosemerryn is 900 sections and is over 50% complete while Barton fields subdivision has completed their first stages and are now looking at some future development opportunity on the opposite side of Birches Road to Flemington.

7. The proposed northern urban extension is a total of 33.68 ha and will provide a yield of approximately 357 sections[1]. Based an anticipated development rate of 70- 80 sections pa, this will provide a further 5 years supply.

8. The land needs to be rezoned now to provide for the timeline for consenting and construction ahead of titles being issued and sections being available for sale. There is generally a subdivision lead time of of at least 12-18 months.

9. There are no known development constraints that would preclude urban development of this land.

10. Lincoln Developments Ltd have an excellent proven subdivision track record and are committed to an ongoing subdivision presence at Lincoln.

We do wish to be heard in support of our submission.



4th May 2018

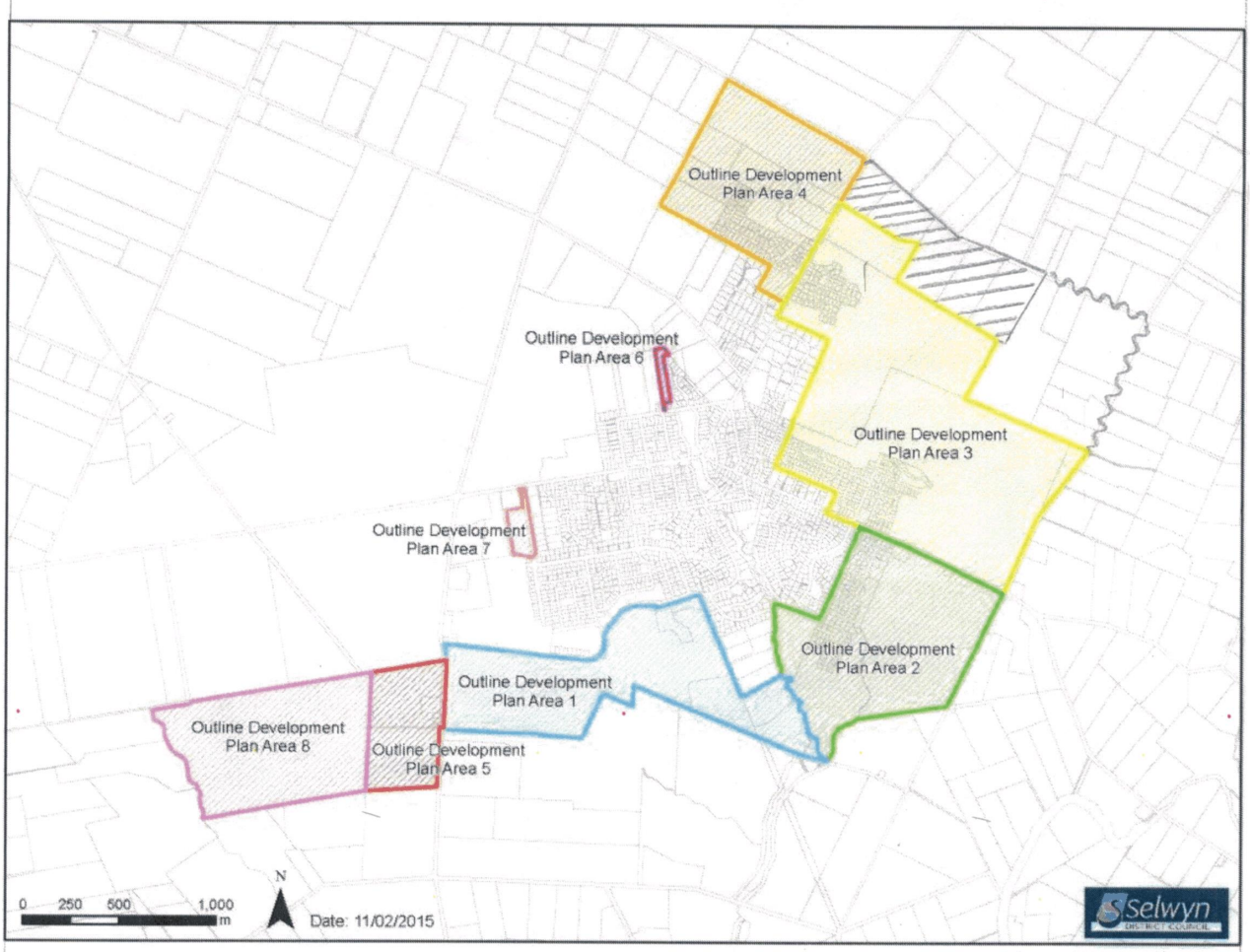
....

Principal Aston Consultants
For Lincoln Developments Ltd

Appendix A: Lincoln Outline Development Plans map – amended to show land required for residential development 2018-2028 and Lincoln North long term boundary

[1] Based on the same yield as the original Flemington subdivision i.e. 10.6 households per ha including stormwater management areas

Outline Development Areas for Lincoln – Amended



Residential development land required 2018-2028
Re-zone Living Z now.

Longer term Lincoln North urban boundary (post 2028)
Include in Future Development Strategy

Submission No: 072

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

Kevin and Bonnie Williams

November 2018

Greater Christchurch Partnership

Submitter Details

Name: Kevin & Bonnie Williams
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

We wish to speak at the hearings.
Preferred location: Selwyn District Council
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background:

The following background provides the context to this submission on **Our Space.** The Submitters, Kevin and Bonnie Williams, have made submissions on the Selwyn District Plan Review and Selwyn Long Term Plan to enable rural residential or urban development of their property at 98-150 Marshs Road, Prebbleton (55 ha). A copy of the District Plan Review submission is attached as **Appendix A**.

The Submitter's preference is to develop their land for rural residential purposes. They have proven development experience, having developed the Templeton Claremont rural residential subdivision.

The Submitters' site is an ideal location for rural residential development. It will provide a replacement for preferred rural residential development areas at Prebbleton, as shown in the Selwyn Rural Residential Strategy, which are within the future growth path for Prebbleton (including Area 7). The owners of Area 7 have not proceeded with rural residential because they are seeking urban zoning for their land. Prebbleton is close to capacity in terms of feasible urban development, and there is strong market demand for further growth.

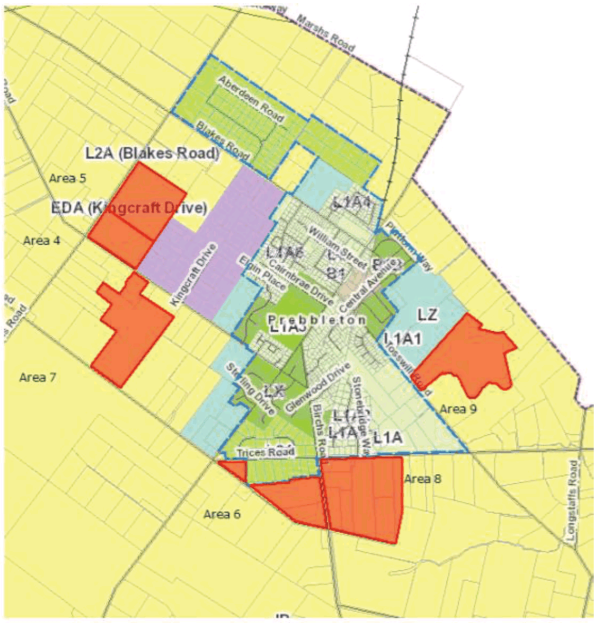


Fig 1: Preferred Rural Residential Areas – Prebbleton

Relief Sought:

The changes which the Submitter requests are in line with its responses and reasons are outlined below. Additions are underlined and in bold and deletions are strike through.

1. Amend **Our Space** and the Canterbury Regional Policy Statement (CRPS) to give effect to the intent of this submission, including as follows:-

   6.2 Schedule of future work

   Amend 8 (page 34) as follows:-

   Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement as follows:-

   - amending Policy 6.3.9 as follows:-

   6.3.9 Rural residential development

   In Greater Christchurch, rural residential development further to areas already zoned in district plans as at 1st January 2013 can only be provided for by territorial authorities in accordance with an adopted rural residential development strategy prepared in accordance with the Local Government Act 2002 **or in substitution for a preferred rural residential**

development area identified in an adopted rural residential strategy which has since been zoned or developed for urban purposes, subject to the following:….; and

- provide flexibility to accommodate meritorous proposals for urban development and zoning and to facilitate a responsive planning approach to management of urban growth of Greater Christchurch by amending and adding to the objectives and policies as follows (insertions in bold and underlined):-

Add new Policy 6.3.1A as below:-

Policy 6.3.1 A

(a) Enable urban development or urban zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

(i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

(ii) Any additional land will integrate with the provision of infrastructure; and

(iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

(iv) The urban development or urban zoning will have beneficial planning outcomes; and

(v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritorous proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land capacity assessments which have informed Map A, and with the primary drivers and influencers of urban development in Greater Christchurch.

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 **or which has only minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.1 Development within the Greater Christchurch area
In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS **or which have minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.7 Residential location, yield and intensification
In relation to residential development opportunities in Greater Christchurch:

7. Subject to Policy 5.3.4, residential greenfield priority area development shall occur **generally** in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.

2. Specify in **Our Space** that Fig 16 be included in District Plans rather than the Canterbury Regional Policy, thus facilitating the ability for private plan requests for changes to the same, with appropriate criteria for assessment being included in the CRPS and/or District Plans; or as a less preferred alternative, other methods to retain flexibility and 'future proofing' to respond to meritorous housing and business development proposals which give effect to the NPS-UDC but are not recognized or provided for in **Our Space** and supporting documents.

3. Consider other amendments to the CRPS and other documents and other actions which are appropriate to facilitate a responsive planning approach to management of urban growth of Greater Christchurch.

4. Consider streamlined RMA or other processes to facilitate the amendments sought which are specific to the Submitters' land and which provide flexibility to provide for meritorous zoning and urban development, including associated policy wording. Do not use

streamlined processes for implementation of the overall **Our Space** strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

5. Any further, consequential or alternative amendments to any documents, and other actions which meet and give effect to the intent of this submission.

Reasons for Relief Sought:-

1. For the reasons set out in the Background above and in the responses to the Submission Form questions below.
2. The housing and business capacity targets, urban form outcomes, and Schedule of Future Work measures (including changes to the CRPS) contained in '**Our Space'** will have a profound and defining effect on the Greater Christchurch settlement pattern for the next 30 years. There will be significant flow on effects for the local, regional and potentially national economies. There is an acknowledged high level of uncertainty with the housing and business lands capacity assessments. The adopted approach is aspirational and untested with its focus being redevelopment and intensification of existing urban areas, underpinned by an as yet unfunded *"vision for transformation of the transport network that fosters much greater pubic and active transport usage, and reduced reliance on the private vehicle".*[1] Despite this, there is no s32 assessment accompanying **Our Space.**
3. The amendments sought will enable the Submitter's land to be used in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).
4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects Prebbleton township and rural residential living opportunties, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.
5. The **Our Space** housing land development capacity targets are uncertain, inaccurate and based on a flawed methodology. They do not consider rural residential development – or the relationship between the urban and rural residential living opportunities, including cases where preferred rural residential areas are in urban growth paths.

[1] Open Space p 19

6. **Our Space** considers a responsive planning approach to future the management of the Greater Christchurch urban growth but does not facilitate or enable this, whereas the relief sought is this submission does.
7. **Our Space** as notified is contrary to and does not give effect to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular Policy PB1 which requires housing capacity supply to meet demand for different types, locations and price points.
8. A fixed uncontestable urban/rural boundary line for Greater Christchurch as proposed by **Our Space** is unlikely to facilitate the urban form sought by **Our Space** including for the following reasons:-
    - Overly strict limitations on peripheral growth causes excessive land price inflation that in turn has a very negative effect on housing affordability;
    - A planning regulatory regime which provides for a contestable urban/rural boundary sends an important signal to the property market that it is best to get on with development rather than "land bank" (because there is excessive capital gain due to scarcity of land supply);
    - Containment and higher land values does not facilitate intensification;
    - If the Central City and the Key Activity Centres are attractive the market will locate there by people's choice. Generally carrots are better than sticks to achieve desired planning outcomes.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

See comments under Background and reasons for relief above.

Question 2:

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.
Do you agree with this approach and why?

Response:
No comment.

Question 3:
Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.
What elements should be included in this action plan?

Response:
No comment.

Business Growth
Question 4:
Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.
Do you agree with this approach and why? What further measures would support such development?

Response:
No comment.

Question 5:
The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.
Do you agree or disagree this is sufficient and in the right location and why?

Response:
No comment.

Growth needs
Question 6:
The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.
Do you agree or disagree with this evidence base and why?

Response:
No – see Background and Reasons for Relief Sought above.

Transport and other infrastructure
Question 7:
Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.
Do you agree or disagree with this approach and why?

Response:
No response, other than to note that 98-100 Marshs Road has excellent connectivity to both Prebbleton and Christchurch City, including cycle and roading links.

Question 8:
Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.
Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:

No response, other than to note that there are no known servicing issues with residential or rural residential development or 98-100 Marshs Road. Reticulated services exist to the property boundary (land on the north side of Marshs Road is zoned Industrial Heavy).

Other

What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

Response:

No further comments other than as noted above.

Appendices

Appendix A: Submission on Selwyn District Plan Review

Appendix A

Submission on Selwyn District Plan Review

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Submission on Selwyn District Plan Consultation Document 'Are we on track'

Kevin and Bonnie Williams

October 2018

Selwyn District Council

SELWYN DISTRICT COUNCIL

SUBMISSION ON SELWYN CONSULTATION DOCUMENT 'ARE WE ON TRACK'

Submitter Details

Name: Kevin and Bonnie Williams
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Submission:

Our submission applies in particular to the Inner Plains Rural Zone, provision for further urban/rural residential growth and in particular the zoning of our property at 98-150 Marshs Road, Prebbleton ('the Site').

Relief Sought

1) The Selwyn District Plan rezone our land at 98-150 Marshs Road (Rural Section 2836 & Rural Section 2705, Lot 1 DP54254 & Section 1 Survey Office Plan 496375 ('the Site') for rural
2) residential or urban purposes (residential or possibly industrial).
3) Any other consequential or other amendments to the District Plan Review or other Council actions necessary to give effect to the intent of this submission.

Reasons for Submission:

The reasons for the submission are as set out in our submission on the Selwyn Long Term Plan ('SLTP') (see **Appendix A**).

We intend to develop the Site for rural residential (or urban) purposes in the immediate future (as soon as they can secure appropriate zoning –we will be submitting on the Urban

Development Strategy Settlement Review due to be notified in 1 November 2018 seeking the same. We have a proven track record in subdivision development, having undertaken the Claremont rural residential subdivision close to Templeton.



……

(Signature of applicant or person authorized to sign on behalf of the applicant)

Date: October 31, 2018

Appendices:

Appendix A: Kevin and Bonnie Williams submission on Selwyn Long Term Plan 2018-2028

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resource management & planning

A PO Box 1435 Christchurch 8140 P 03 3322618 M 0275 332213
E info@astonconsultants.co.nz W www.astonconsultants.co.nz

SUBMISSION ON SELWYN DISTRICT PLAN LONG-TERM PLAN 2018 – 2028

To: The Chief Executive
Selwyn District Council
PO Box 90
Rolleston 7643

Name: Kevin & Bonnie Williams
Postal Address: c/- Aston Consultants Ltd
PO Box 1435
Christchurch 8140
Telephone: 03 3322618/0275332213
Email: info@astonconsultants.co.nz

1.0 Our Submission

We seek amendments to the Selwyn District Long-Term Plan 2018-2028 (LTP) in order to make appropriate provision for servicing our land at 98 – 150 Marshs Road , legally described as Rural Section 2836 & Rural Section 2705, Lot 1 DP54254 & Section 1 Survey Office Plan 496375 (the Site) for rural residential or urban purposes (residential or possibly industrial).

2.0 Reasons for Submission

1) The Site is an appropriate location for rural residential (or urban) development for all the reasons outlined below;

2) Prebbleton is close to capacity in terms of feasible urban development, and there is strong market demand for further growth;

3) Prebbleton is identified in Selwyn 2031 as a Service Centre. There is scope for significant further growth at Prebbleton before it meets the maximum intended size for a Service Centre;

4) The logical and preferred future urban growth direction for Prebbleton is for Shands Road to be the westward extent of urban growth (as stated in

the SDC Rural Residential Strategy page 68. Replacement rural residential areas will be required. The Site is an appropriate replacement location.

5) The Submitters intend to develop the Site for rural residential (or urban) purposes in the immediate future (as soon as they can secure appropriate zoning – they will be submitting on the Urban Development Strategy Settlement Review due to be notified in August 2018 seeking the same). They have a proven track record in subdivision development, having undertaken the Claremont rural residential subdivision close to Templeton.

Further background and explanation in support of the above reasons is set out below.

3.0 Background

The Site will be approximately 55 ha and is zoned Rural Inner Plains (see location plan – Figure 1 below with the Site highlighted in green). It was previously approximately 69ha but land has/will been taken for the Southern Motorway extension which bisects the original site. It is currently used for horse training and a horse stud.



Figure 1

The Site is located in Selwyn District at the Marshs Road boundary with Christchurch City. The northern side of Marshs Rd is a greenfield business area, zoned Industrial Heavy in the Christchurch Replacement District Plan. Between the Site and State Highway 1 (SH1) to the north west is the existing Meadowlands Road and Waipuna Road subdivision comprising 4 ha lots. This subdivision adjoins the existing Templeton township. There is an existing rural

residential subdivision (Claremont) on the south side of SH1 just beyond Templeton. This was developed by the Williams.

The Site is immediately north west of the existing Prebbleton Aberdeen subdivision.

4.0 Suitability for Rural Residential Development

Rural residential development of the Site could yield around 90-95 lots based on an average lot size of 5000m^2.

The Site is not identified as a preferred rural residential site in the Selwyn District Council Rural Residential Strategy 2014 (RRS). The preferred rural residential sites were essentially sites requested by submitters which met preferred site criteria specified in the RRS. The submitters did not submit on the RRS because at the time (prior to 2014) they were not aware that a RRS was in preparation.

Notwithstanding, the Site meets most of the relevant criteria and pre-requisites for preferred rural residential sites as identified in RRS (reproduced in **Appendix A** of this submission), and the District Plan intended outcomes for rural residential zones for the reasons set out below.

The Site can be:-

- economically serviced, with potential servicing options available from both Christchurch City and Selwyn District (see servicing plan attached as **Appendix B).** The existing sewerage line along Shands Road is to be retained as a lifeline sewer line. The submitter's strong preference is for the Site to be serviced by SDC as the Site is within SD and it is appropriate that servicing is provided by the local authority in which the Site is located;

- integrated with and consolidated with the urban form of Prebbleton – the Site adjoins the Prebbleton urban boundary and is immediately west of Shands Road which forms the logical long term western extent of urban development of Prebbleton, as stated in the RRS;

- achieve a high level of connectivity with Prebbleton – whilst on 'first impression' it may appear that the Southern Motorway extension will sever the Site from the Prebbleton township, in fact this is not the case as there is excellent existing and proposed connectivity by multiple transport modes between the Site and Prebbleton. The Rail Trail cycle route goes to the boundary of the Site, and provides a link between Prebbleton and the city. In addition, there will be a cycle and pedestrian route over the proposed Shands Road overbridge over the motorway, which we understand will also connect into Prebbleton (via Blakes Road);

- achieve the sense of spaciousness and ruralness anticipated for a rural residential zone with appropriate design;

- given the Site size, and size of rural residential lots, any potential reverse sensitivity effects with the adjoining Southern Motorway and Industrial Heavy zoned land to the north can be mitigated or avoided by appropriate subdivision layout and design;

- there are no known potentially noxious or nuisance intensive farming activities in the vicinity of the Site;

- the Site is not affected by any known physical constraints (eg natural hazards);

- the landowners wish to develop the Site for rural residential purposes and have a proven track record in subdivision development, having developed the neighbouring Claremont rural residential subdivision close to Templeton.

With respect to the site specific criterial for Prebbleton, the Site meets all relevant criteria with the exception of avoiding locations that may contribute to the long term coalescence of Prebbleton with the townships of Templeton and development within the Christchurch City territorial authority boundary. The Site, and the existing Waipuna Road/Meadowlands 4 ha subdivision currently separate the existing Prebbleton and Templeton townships along Marshs Road.

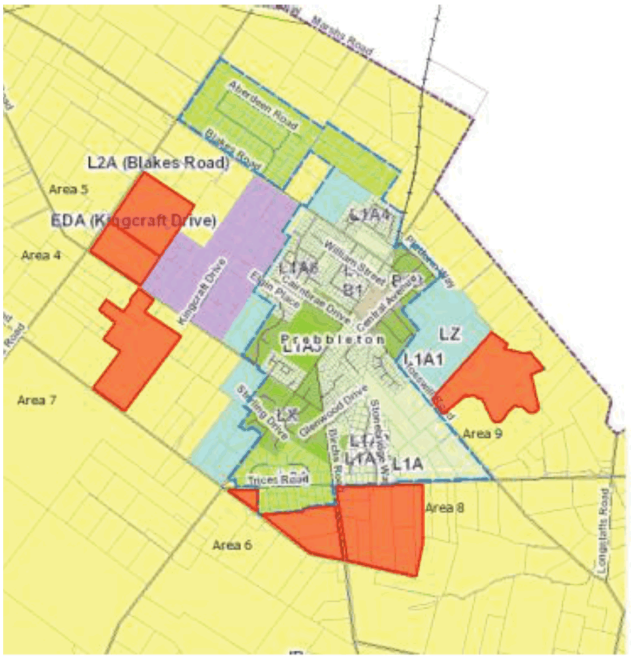
However, the RRS pre-dates the Southern Motorway extension so is at least partially out of date. Retention of the Waipuna Road/Meadowlands 4 ha subdivision and rural residential zoning of the Site would retain a suitable and practical low density residential and rural visual and land use buffer between the two townships. Shands Road would provide a strong 'urban edge' to the western boundary of Prebbleton township (Shands Road is stated in the RRS as the logical boundary for urban development west of Prebbleton).

Appropriate treatment of the Marshs Road Industry Heavy zone interface through design measures could also ensure retention of an appropriate degree of 'ruralness' for the development, consistent with its 'rural buffer' function and the edge treatment requirement under the Christchurch District Plan for the north side of Marshs Rd (two staggered and offset rows of trees, with trees to be placed 10 metres apart in each row, minimum 10m setback for buildings, maximum building height 15m within 20m of Marshs Road frontage).

The assessment below addresses the SDC officer's concerns in relation to the criteria as recorded in the Consultation Record (**Appendix C**) - in particular in relation to servicing (NZTA has confirmed services can cross the Southern Motorway): potential Motorway severance issues (there will in fact be excellent connectivity between the Site, Prebbleton and the City by multiple transport modes); and potential coalescence of Templeton and Prebbleton (the Motorway has significantly impacted on the character of this area, and a rural residential 'buffer' in this area is now entirely appropriate.

5.0 Need for Replacement Rural Residential Areas Adjoining West Prebbleton

Prebbleton is close to capacity in terms of feasible urban development, and there is strong market demand for further growth (as acknowledged by SDC officers – see Consultation Record in **Appendix C**). Existing preferred rural residential areas in the RRS to the west of the township (Areas 4, 5 and 7) as shown on the RRS Figure 31 reproduced below are in Prebbleton's preferred urban growth path and may be required for future urban growth at Prebbleton. As Areas 4 and 5 have recently been zoned for rural residential purposes it is unlikely that they will be rezoned for urban purposes in the short term (unless landowners favour 'intensification'). Area 7 remains unzoned, but is a 'future proofed' rural residential area so is likely to be required for future urban growth of Prebbleton.



The logical and preferred future urban growth direction at Prebbleton is for Shands Road to be the westward extent of urban growth (as stated in the RRS page 68). Replacement rural residential areas will be required, and would be appropriate in locations west of Shands Road, between Prebbleton and Templeton, including the Site.

6.0 The Appropriate 'Ultimate Size' for Prebbleton?

Prebbleton is identified in Selwyn 2031 as a Service Centre. Service Centres are defined in Selwyn 2013 as:

- Estimated population range 1500 – 6000.
- Function is based on providing a high amenity residential environment and primary services to Rural Townships and surrounding rural area.

Population figures and projections for Prebbleton[1] are:-

2018 3918
2018 4747
2031 5013
2048 6486

Clearly, there is scope for significant further growth at Prebbleton before it meets the maximum intended size for a Service Centre.

7.0 Consultation to Date

The Submitters clear intention and commitment to rural residential or urban development of the Site is evident from the investigations already undertaken in this regard. They have commissioned Aston Consultants to undertake a feasibility assessment which included consultation meetings/discussions with SDC, New Zealand Transport Agency and Christchurch City Council (see copy of consultation record attached as **Appendix C)**.

We do wish to be heard in support of my submission.

Principal Aston Consultants
for K &W Williams

4th May 2018

Appendix A	Relevant criteria and pre-requisites for preferred rural residential sites as identified in RRS
Appendix B	Servicing plan
Appendix C	Consultation meetings/discussions with SDC, New Zealand Transport Agency and Christchurch City Council

[1] Taken from SDC August LTP and AMP Assumptions Report 2018-28

Appendix A

Relevant criteria and pre-requisites for preferred rural residential sites as identified in RRS

Rural residential locations satisfy the following pre-requisites:

The identified rural residential locations satisfy the following pre-requisites:

- can be economically serviced with reticulated water and wastewater services
- are able to be integrated with established Townships
- do not significantly undermine the urban consolidation and intensification principles of the LURP, Chapter 6 of the CRPS, SDP or RRS14
- are not affected by any significant constraints
- are owned by parties who have aspirations to rezone the land

Explanation

The Rural Residential Location Criteria have been developed to inform the selection of the rural residential areas contained in Section 6 and to assist prospective applicants considering or preparing private plan change requests to rezone land within the identified rural residential areas.

The criteria are not set out in a hierarchy and are not anticipated to be applied in this way. All the criteria were weighed up in an overall consideration of the relative merits of any given location as part of the process to develop this Strategy, with any constraints or failure to align with the criteria having to be addressed in turn.

The criteria are categorised into the following three groups:

- ★ The critical outcomes required to achieve the goals of the UDS and Appendix 1 of the Land Use Recovery Plan - Chapter 6 of the CRPS
- ▲ Site specific issues that require detailed assessments and contextual analysis to determine how any identified potentially adverse effects could be avoided, remedied or mitigated
- ● Matters that do not apply to certain geographic locations within the UDS area of the District

Initial more generic criteria for the area of the district that is subject to the Chapter 6 of the CRPS are outlined, which specify elements that universally apply to all possible rural residential locations.

Criteria for each of the Township and environs study areas are then provided, which focus on more specific constraints and physical characteristics to assist in determining the appropriateness of any given location on the periphery of Rolleston, West Melton, Templeton, Prebbleton, Tai Tapu, Lincoln and Springston.

These criteria are grouped into the following categories for each Study Area:

- Urban form and growth management
- Rural character and productivity
- Strategic infrastructure
- Natural hazards
- Environmental, cultural and heritage

GENERIC CRITERIA	Rolleston	Lincoln	Prebbleton	West Melton	Tai Tapu	Templeton	Springston
Chapter 6 of the CRPS (LURP)							
Located outside the identified priority areas for development and existing urban areas	★	★	★	★	★	★	★
Located so that it can be economically provided with reticulated sewer and water supply integrated with a publicly owned system, and appropriate stormwater treatment and disposal	★	★	★	★	★	★	★
Access provided to a sealed road but not directly to Strategic and Arterial Roads (as identified in the District Plan), and State Highways	▲	▲	▲	▲	▲	▲	▲
Avoid noise sensitive activities occurring within the 50 dBA Ldn air noise contour so as not to compromise the efficient operation of the Christchurch International Airport or the health, well-being and amenity of people	▲	●	●	●	●	▲	●
Avoid the groundwater recharge zone for Christchurch City's drinking water	●	●	●	★	●	●	●
Avoid land required to protect the landscape character of the Port Hills	●	●	●	●	▲	●	●
Not compromise the operational capacity of the West Melton Military Training Area or Burnham Military Camp	★	●	●	★	●	●	●
Support existing or upgraded community infrastructure and provide for good access to emergency services	★	★	★	★	★	★	★
Not give rise to significant adverse reverse sensitivity effects with adjacent rural activities, including quarrying and agricultural research farms, or strategic infrastructure	▲	▲	▲	▲	▲	▲	▲
Avoid significant natural hazard areas, including steep or unstable land	●	●	●	●	▲	●	●

Chapter 6 of the CRPS (LURP)							
Avoid significant adverse ecological effects	★	★	★	★	★	★	★
Support the protection and enhancement of ancestral land, water, sites, wāhi tapu and wāhi taonga to Ngāi Tahu	★	★	★	★	★	★	★
Avoid adverse effects on water quality and quantity of surface water including drains and water/stock races and groundwater	●	◀	◀	◀	◀	●	◀
Integrate into, or consolidate with, existing settlements	★	★	★	★	★	★	★
Development site supports the development of an ODP and is not seen as a transition to full residential forms of development	★	★	★	★	★	★	★
Rural residential form, function and character							
Avoid locations that are obvious residential growth paths except where legal mechanisms exist to ensure that rural residential development does not impede future development of such areas once rezoned to a living or urban zone to achieve urban densities in accordance with an agreed ODP and to ensure that purchasers of rural residential lots are aware of this requirement	★	★	★	★	◀	◀	◀
Support locations that can sustain a mixture of housing densities generally ranging from 0.3ha to 2ha in size whilst achieving an overall density of 1 to 2hh/ha, but where the overall area supports sustainable enclaves in respect to the overall number of households to enable the anticipated rural residential form, function and character to be achieved. In some circumstances small numbers of lots in the 0.2 to 0.3ha range may be appropriate having regard to the particular characteristics of the site and immediate environs, for example where clustering is appropriate or as a 'transition' at the boundary with urban residential development	◀	◀	◀	◀	◀	◀	◀

Support locations that directly adjoin and are able to consolidate with Townships and residential priority area to support the provision of economically viable infrastructure and to promote social cohesion and ready access to recreational, employment and other services established within Townships	★	★	★	★	★	★	★
Avoid locations that may compromise the quality of ecosystems or indigenous biodiversity and ensure that rural residential areas do not adversely affect ancestral land, water, and the Wāhi Tapu and Wāhi Taonga of Te Rūnunga o Ngāi Tahu and Te Taumutu Rūnunga. These include the need to protect and enhance rivers, streams, groundwater, wetlands and springs within the catchment of Lake Ellesmere/*Te Waihora*, springs and any associated mahinga kai sites	★	★	★	★	★	★	★
Support locations that utilise existing road layouts and physical features as buffers and definitive boundaries between urban and rural residential activities to limit peri-urban sprawl	▲	▲	▲	▲	▲	▲	▲
Landscape values							
Discernibly logical boundaries determined by strong natural or physical features	★	★	★	★	★	★	★
Exclude land required to maintain the open space landscape character either between or surrounding the areas of urban activity within Greater Christchurch	▲	▲	▲	▲	▲	▲	▲
Protection, enhancement and restoration of indigenous flora and fauna, in particular mahinga kai species, cultural landscapes, natural features, significant trees and vegetation	★	★	★	★	★	★	★
Manage the amount of households within single locations to avoid the collective visual effects of intensified land use	★	★	★	★	★	★	★
Address the constraints to development identified in the Landscape Constraints Map prepared by Andrew Craig Landscape Architect (see Appendix 1 RRS13)	▲	▲	▲	▲	▲	▲	▲
Locations to adjoin Township boundary's but have an ability to achieve a degree of 'ruralness' as a consequence of adjoining land uses and natural attributes	★	★	★	★	★	★	★

PREBBLETON ENVIRONS STUDY AREA CRITERIA	PRIORITY
Urban form and growth management	
Rural residential development nodes to: (a) adjoin the residential priority areas and Living zoned land; and (b) be consistent with the urban settlement pattern and strategic planning outcomes outlined in the Prebbleton Structure Plan and the Growth of Township objectives and policies of the District Plan, including specifically the promotion of future residential expansion to the east and west of Springs Road to achieve a compact concentric urban form and to minimise adverse effects on Springs Road by limiting the length of rural residential boundaries north and south of this road	★
Prebbleton and its environs have a reduced capacity to support significant rural residential households, which may undermine the discrete character and rural outlook attributed to the Township, and place pressure on community services and local infrastructure that are anticipated to only service a relatively small population base (refer to APPENDIX 2 – Map 24)	★
Avoid ribbon development along the alignment of reticulated services and strategic roads that may undermine the contrast between rural and urban forms of development and the distinctiveness of the primary gateways to Prebbleton (refer to APPENDIX 2 – Map 24)	▲
Preserve the obvious residential growth path west of Springs Road between Trents and Hamptons Roads, which presents a long term opportunity to achieve a compact concentric urban form for Prebbleton (refer to APPENDIX 2 – Map 24)	▲
Avoid locations that may contribute to the long term coalescence of Prebbleton with the Townships of Lincoln and Templeton and development within the Christchurch City territorial authority boundary (refer to APPENDIX 2 – Map 24)	★
Rural character and productivity	
Support locations that maintain appropriate separation from the Intensive Farming Activities legitimately established on the periphery of Prebbleton (see APPENDIX 2 – Map 5)	▲
Maintain the visual distinction and amenity contrast between the rural periphery of Prebbleton and the larger urban forms of Rolleston, Lincoln and Christchurch City, particularly at the interface between the Prebbleton 'Greenbelt' and the industrial activities occurring within Christchurch City Council's territorial authority boundary to the north(refer to APPENDIX 2 – Map 24)	★
Strategic infrastructure	
Avoid locations that may not be able to connect to strategic infrastructure where it is available and cost effective to do so, including roading, stormwater management and reticulated water and wastewater networks (refer to the 5Waters Activity Management Plan and Transportation Activity Management Plan)	★

Avoid locations that may undermine the efficient operation of the strategic infrastructure referenced in the District Planning Maps and the associated Study Area Maps contained in APPENDIX 2 – Map 8): Transpower high voltage transmission lines, Orion electricity substation on the southern outskirts of Prebbleton (OR11), Shands Road cemetery (D172), SH1 four-laning and CSM2, Ladbrooks Primary School (ME22), Prebbleton Primary School (ME9) and Broadfield Primary School (ME17)	★
Natural hazards	
Avoid locations that are constrained by the high groundwater table, SDC recorded flood sites, Lower Plains Flood Area and associated land drainage issues (including drains, springs and waterways) (see APPENDIX 2 – Map 15)	▲
Avoid locations where liquefaction and lateral spreading was observed during the Canterbury Earthquakes, in addition to areas made up of fine saturated soils and where there is a high groundwater that may be susceptible to significant damage during future earthquake events (see APPENDIX 2 – Map 20)	▲
Environmental, cultural and heritage values	
Avoid land that may compromise the health, longevity or setting of the registered Protected Tree located on Ladbrooks School grounds (T104) (see APPENDIX 2 – Map 8)	▲
Avoid locations that may compromise the cultural values attributed to the Wāhi Taonga Management Site to the south-east of Prebbleton (Oven C65) (see APPENDIX 2 – Map 8)	▲
Avoid locations that may compromise the historic values attributed to the registered Heritage Buildings in proximity to Prebbleton, including specifically: Wheatsheef House (H302) and Trents Chicory Kiln (H208) (see APPENDIX 2 – Map 8)	▲
Consider the extent to which any locations may reduce the productive capacity of Class I and II versatile soils on the periphery of Lincoln (see APPENDIX 2 – Map 21)	▲
Investigate the environmental impacts of facilitating rural residential growth on land that may be potentially contaminated, including sites identified on the eastern edge of the Township and on Tosswill Road to the north-east (see APPENDIX 2 – Map 8)	▲

Appendix B

Servicing plan


ChCh Water and Sewer
CCC WATER (?)
CCC SEWER (?)
Water Main in this area is run by the CCC. Please contact them for connection details.
98-150 Marshs Rd
CCC WATER (?)
Christchurch Southern Motorway
Marshs Road
State Highway 76
Shands Road
Blakes Road
Prebbleton
LL: 26.53
IL: 24.58
Invert: 1.95
LL: 26.7
IL: 24.79
Invert: 1.91
LL: 25.94
IL: 23.72
Invert: 2.22
LL: 24.76
IL: 22.41
Invert: 2.35
LL: 25.06
Invert: 3.02
LL: 24.12
IL: 22.59
Invert: 1.53
LL: 23.21
IL: 20.56
Invert: 2.65
150 PVCU
0 112.5 225 337.5 450
Metres
Selwyn DISTRICT COUNCIL
05 April 2017
Cadastral Information dervided from Land Information New Zealand's Digital Cadastral Database (DCDB)
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Appendix C

Consultation meetings/discussions with SDC, New Zealand Transport Agency and Christchurch City Council

aston CONSULTANTS
resource management & planning

Meeting re 98-150 Marshs Road, Prebbleton

Date: 5/4/16
Location: Selwyn District Council Rolleston offices

Attendees
Kevin Williams (KW, property owner)
Fiona Aston (FA, Planner Aston Consultants)
Craig Friedel (CF, Planner SDC)
Murray England (ME, Assets Manager SDC)

98-150 Marshs Road
FA introduced the Williams' property at 98-150 Marshs Road (the site) and its planning context. It is approximately 68ha but some land is to be taken for the Southern Motorway extension, reducing it to approximately 55 ha. It is currently used for horse training and a horse stud. KW advised that it has an existing well drawing 41 litres per second.

The site is located in SD at the Marshs Road boundary with Christchurch City. The northern side of Marshs Rd is a greenfield business area, zoned Industrial Heavy in the Christchurch Replacement District Plan. Between the property and SH1 to the north west is the existing Meadowlands Road and Waipuna Road subdivision comprising 4 ha lots. This subdivision adjoins the existing Templeton township. There is an existing rural residential subdivision (Claremont) on the south side of SH1 just beyond Templeton. This was developed by the Williams.

The site is immediately nw of the existing Prebbleton Aberdeen subdivision. Once the Southern Motorway extension is built, the site will share a boundary with Prebbleton township (on the northern side of the Motorway).

The Williams preference is for the site to be rezoned for rural residential purposes. However, they would consider residential zoning if this was the Council's preference.

FA referred to the SDC Rural Residential Strategy. She suggested that some of the Prebbleton preferred rural residential areas were potentially in urban growth paths and may be required for future urban growth at Prebbleton (including remaining unzoned RR land between the township and Shands Road). The Williams site was an ideal replacement site for RR at Prebbleton as it was adjoining but beyond Shands Road, the logical medium/long term urban growth boundary.

Whilst on 'first impression' it may appear that the Southern Motorway extension will sever the site from the Prebbleton township, in fact this is not the case ss there is excellent existing and proposed connectivity by multiple transport modes between the site and Prebbleton. The Rail Trail cycle route goes to the boundary of the site, and provides a link between Prebbleton and the city. In addition, there will be a cycle and pedestrian route over the proposed Shands Road overbridge over the motorway, which will also connect into Prebbleton (via Blakes Road).

Preliminary Comments – Craig Friedel
CF noted that Shands Road is identified in the RRS as a definitive boundary to residential or rural residential growth west of Prebbleton. This has been a longstanding position, and has been referenced in a previous Environment Court decision relating to urban growth at Prebbleton by Judge Smith.

By way of background, CF noted that there had been a previous proposed by Suburban Estates for rezoning the existing 4 ha subdivision area between the site and Templeton. However, that had not succeeded as Christchurch City did not at the time wish to extend services in this area.

CF did not consider the site 'stacked up' very well against the current RRS criteria. The motorway created community and infrastructure severance issues, and it was not practical to extend services to the site across the motorway. The RRS sought to avoid ribbon development and the coalescence of Templeton and Prebbleton. CF acknowledged that the rural character and outlook of the site was compromised by the proposed motorway and future industrial land development to the north.

CF noted that whilst Prebbleton was close to capacity in terms of feasible urban development, and there was strong market demand for further growth, any urban growth propsals would require community consultation. Questions need to asked regarding the capacity of Prebbleton to accommodate further growth. It is identified in the Selwyn 2031 District Strategy as a service centre, not a key activity centre. Significant additional growth may adversely its village character, and may require higher order services such as libraries and community services. Prebbleton is well served with reserves. There is undeveloped land at Prebbleton Central town centre which could accommodate more commercial development.

CF explained planning processes underway in relation to the National Policy Statement on Urban Development Capacity (NPS – UDC) and the District Plan Review. The Greater Christchurch Urban Development Strategy partners (ECAN, territorial authorities and New Zealand Transport Agency) are collaborating in collecting statistics and monitoring data required under the NPS – UDC, including regarding feasible development. This will identify any shortfalls in capacity. A UDS Settlement Strategy Review will follow which will identify where spatially the shortfalls are to be met. This will be implemented through changes to the Regional Policy Statement and rezonings as required to the District Plans. A review of RR areas is likely to follow, once the settlement growth needs are known. It is likely that this process will take 2-3 years.

Preliminary Comments – Murray England
Shands Road has a rising pressure main. The water supply stops at the Aberdeen subdivision. Prebbleton sewerage previously connected into the City system via Marshs Road but is now directed to Rolleston. The existing Shands Rd line is to be retained as a lifeline sewer line as part of the redevelopment due to the Motorway extension. ME would prefer that the site was serviced from the City rather than SD. CCC services exist to the site boundary. There is sufficient capacity to accommodate sewerage from the site, but the distance to the closest pumping station is too far (Blakes Road).

The Motorway designation extends to Marshs Road so any proposal involving reticulating to the City's services via Marshs Road would also require the consent of NZTA as the designation authority for the Motorway. In the event that the site was serviced from CCC, SDC would rate the property and then pay a 'figure' to CCC for provision of services.

aston CONSULTANTS
resource management & planning

Memo:

Phone Consultation with Sarah Oliver, Principal Planner, CCC re 98-150 Marshs Road, Templeton

Date: 21/8/17

Time: 2pm

1) National Policy Statement – Urban Development Capacity (NPS-UDC)

The Greater ChCh Partnership Group (GCPG) are working together to address new requirements under the NPS-UDC. GCPG same as UDS (Urban Devt Strategy) partners i.e. ECAN, SDC, CCC, WaimakDC, NZTA + additional members – inc. Regenerate ChCh, Health Board .

Stage 1A – complete Housing and Business Land Supply Assessment by 31/12/17.

This will assess housing and business land supply needs (based on population and business growth projections) for the short (3 year), medium (10 year) and long term (30 years) and compare this with land availability (including assessing what is feasible development land as defined in the NPS-UDC and in accordance with guidance provided by M of Business, Innovation & Employment (MBIE) – including a feasibility calculator.

The H&B Land Supply Asst will be a factual rather than consultation document and will not be open for consultation/submissions. The methodology is defined in the MBIE guidance. It will not make recommendations on how any shortfalls in land supply needs are met, including any changes to urban growth/settlement patterns.

The H&B Land Supply Asst is likely to be geographically specific, but Sarah wasn't sure to what level eg different townships or just different Districts.

Stage 1B – complete Future Urban Development Strategy (for short, medium and long term) + include targets for short and medium term housing and business land needs (e.g how many houses each township must provide for) in district and regional plans by 31/12/18.

The UDS will be the GCPG response to the Housing and Business Land Supply Assessment and is likely to include a range of responses to be implemented by different methods e.g. Local Government Act, RMA plans, Council Long Term Plans, streamlined consent processes (e.g. use of Urban Development Authorities legislation, Housing Accords etc). It will not be simply a matter of 'predict and provide' i.e. if there is shortfall or oversupply of feasible development land, rezone more land/remove urban zoning. There may be other reasons why development isn't feasible, which need to addressed e.g changes to development contributions to reflect true cost of development e.g. greenfield development doesn't reflect fact that residents in GF areas outside CCC largely work in CCC and should

pay share of cost of CCC based transport infrastructure[1]. Land which isn't feasible may retain its urban zoning as it may become feasible over time.

The Draft Future UDS will be open for some form of public consultation.

Sarah anticipates that the short and medium term targets are likely to be met based on the existing supply of land for housing and business (ie existing zoned areas) and most 'new policy' is likely to apply to the long term (next 30 years). By this time, other societal changes e.g. driverless cars, are likely to impact on potential settlement growth patterns etc.

2) Selwyn and Waimakariri District Plan Reviews

CCC has recently completed its District Plan Review. Selwyn and Waimak DC are both in early stages of reviewing their plans. They are likely to review other parts of the Plans first, and will wait on the housing and land supply targets and Future UDS review processes before notifying any revised settlement growth plans etc. i.e. these parts of the respective reviews are likely to be delayed until 2019.

3) Rural Residential Development

The NPS-UDC housing targets are for urban development only i.e. do not include rural residential development. However, the Future UDS may include rural residential housing needs, and take a comprehensive and holistic approach. Currently there is no provision for RR development in CCC, and the Regional Policy Statement precludes this – but this could be reviewed under the Future UDS.

4) Marshs Road rezoning proposal

Given above, it is premature for CCC to provide any specific advice on, or commitment re Marshs Road rezoning proposal.

Servicing – there are likely to be various options for servicing, including options of CCC servicing the development which is across the city boundary in SDC. Prebbleton was previously serviced for wastewater from CCC, and Tai Tapu still is. There is no CCC or SDC policy which would preclude this.

[1] Eg. 70% of Rolleston residents work in CCC

Meeting re 98-150 Marshs Road, Prebbleton

Date: 03/05/17
Location: New Zealand Transport Agency

Attendees
Kevin Williams (KW, property owner)
Fiona Aston (FA, Planner Aston Consultants)
Liz Stewart (ES, Planner Aston Consultants)
Stuart Pearson (SP, Planner NZTA)
Caroline Hutchison (CH, Planner NZTA)

98-150 Marshs Road
FA introduced the Williams' property at 98-150 Marshs Road (the site) and its planning context. It is approximately 55 ha. It is currently used for horse training and a horse stud.

The site is located in SD at the Marshs Road boundary with Christchurch City. The northern side of Marshs Rd is a greenfield business area, zoned Industrial Heavy in the Christchurch Replacement District Plan. Between the property and SH1 to the north west is the existing Meadowlands Road and Waipuna Road subdivision comprising 4 ha lots. This subdivision adjoins the existing Templeton township. There is an existing rural residential subdivision (Claremont) on the south side of SH1 just beyond Templeton. This was developed by the Williams.

The site is immediately nw of the existing Prebbleton Aberdeen subdivision.

The Williams preference is for the site to be rezoned for rural residential purposes.

FA referred to the SDC Rural Residential Strategy. She suggested that some of the Prebbleton preferred rural residential areas were potentially in urban growth paths and may be required for future urban growth at Prebbleton (including remaining unzoned RR land between the township and Shands Road). The Williams site was an ideal replacement site for RR at Prebbleton as it was adjoining but beyond Shands Road, the logical medium/long term urban growth boundary.

KW advised that the Rail Trail cycle route goes to the boundary of the site, and provides a link between Prebbleton and the city. In addition, there will be a cycle and pedestrian route over the proposed Shands Road overbridge over the motorway, which will also connect into Prebbleton (via Blakes Road).

Preliminary Comments – Catherine Hutchinson
Reverse Sensitivity
FA referred to Devon Park Rural Residential Outline Development Plan (ODP) which was developed adjacent the SH in Rolleston and the 40m no build buffer setback and noise insulation rules for dwellings within 100m of the SH incorporated into the ODP to address reverse sensitivity issues with SH. She also noted rules in the DP which address reverse sensitivity matters (including noise insulation rules).

CH noted that the setback distance required would be dependent on factors such as traffic volumes, noise and vibration. She noted that the setbacks are more stringent for high volume roads.

CH referred us to NZTA reverse sensitivity policy (NZ Planning Policy Manual) for further details.

KW noted that there will be a 3m mound along the boundary of his property with the motorway. This will mitigate noise and visual effects of the motorway.

Servicing
CH advised that NZTA has discretion to determine if they would allow services over the SH. She suggested that it may be beneficial to discuss obtaining services with CCC therefore consent from NZTA may not be required (although the motorway overbridge does extend along the City section of Shands Road so it is likely NZTA consent would still be required if services were taken from CCC). If at a higher strategic level the rezoning of the site was considered appropriate by the UDS partners, servicing would be a secondary issue to NZTA and NZTA is unlikely to decline a request for services crossing the highway. Directional ground methods are used for installation of services which does not require disturbing the road surface. An easement for SDC/CCC would be required. NZTA normally uses third party agreements for servicing arrangements.

CH advised NZTA cannot take a position on the preferred zonings, but would only support a proposal where the Greater Christchurch Urban Development Strategy partners (ECAN, territorial authorities and New Zealand Transport Agency) collaborated together for a unified outcome.

Other issues
1) FA noted that CF from SDC had suggested consideration of future zoning of the wider triangular block enclosed by Main South Road, Marshs Road and SH for future residential purposes and incorporating the existing Claremont rural residential subdivision close to Templeton.

   CH advised that they would require time to consider this possibility and that it would require good planning reasons to support it. A collaborative response would be required from the UDS partners. CH's preliminary view was that she could see no particular merit in having the SH as the urban boundary.

2) CH identified that Shands Road will in the future be the key rural arterial road to the City from the Lincoln locality and that Springs Road will be the less preferred road into the City in order to maintain the amenities and village character of Prebbleton.

Submission No: 023

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

Ivan Robertson, Lindsay & Judith Blackmore & Malcolm Main

November 2018

Greater Christchurch Partnership

Submitter Details

Name: Ivan Robertson, Lindsay & Judith Blackmore & Malcolm Main
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

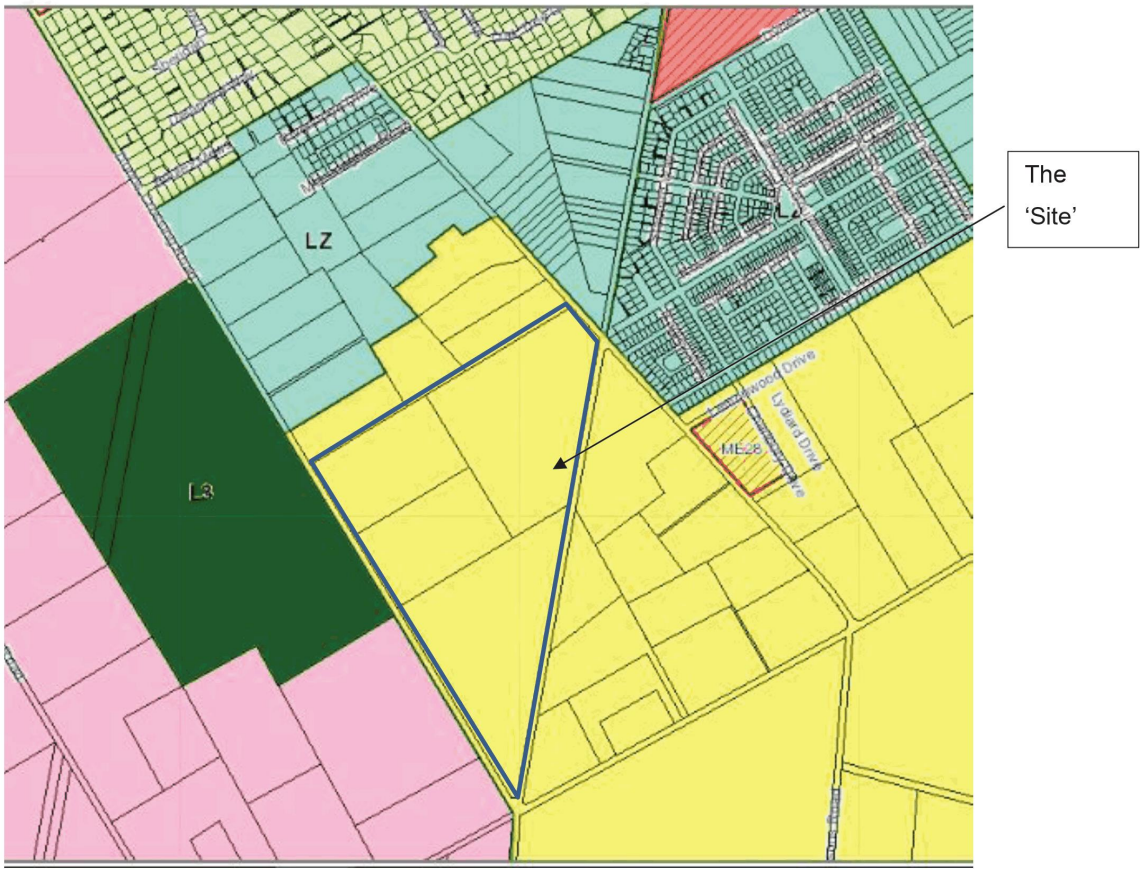
We wish to speak at the hearings.
Preferred location: Selwyn District
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background and Site

The submitters Ivan Robertson, Lindsay and Judith Blackmore and Malcolm Main ('the Submitters') own a total of 61.336 ha ('the Site') comprising the following:-

Robertson:	
Lot 1 DP 61278 Blk 123 Leeston SD	10.115 ha
Lot 3 DP 57004	20.731 ha
Blackmores:	
Lot 2 DP 61278 BLK III Leeston SD	10.1150 ha
Main:	
Lot 1 D P 57004 BLK III Leeston SD	20.375 ha.

The land is located at south west Rolleston, west of the existing Faringdon development and south of the Outline Development Plan Area 12 (56ha zoned Living Z and bound by East Maddisons Road to the east and Dunns Crossings Road the west) – see location plan below and quick map in **Appendix A**. It is currently used for grazing purposes and hay cropping and balage. There is an existing dwelling and associated dwelling on each block, except Lot 3 DP 57004 which is vacant.



The Site is located within the Canterbury Regional Policy Statement (CRPS) Projected Long Term Infrastructure Boundary for Rolleston shown on Map A, and is shown on **Our Space** Fig 16 as Future Development Area. It is identified as residential land on the Rolleston Structure Plan as shown below.

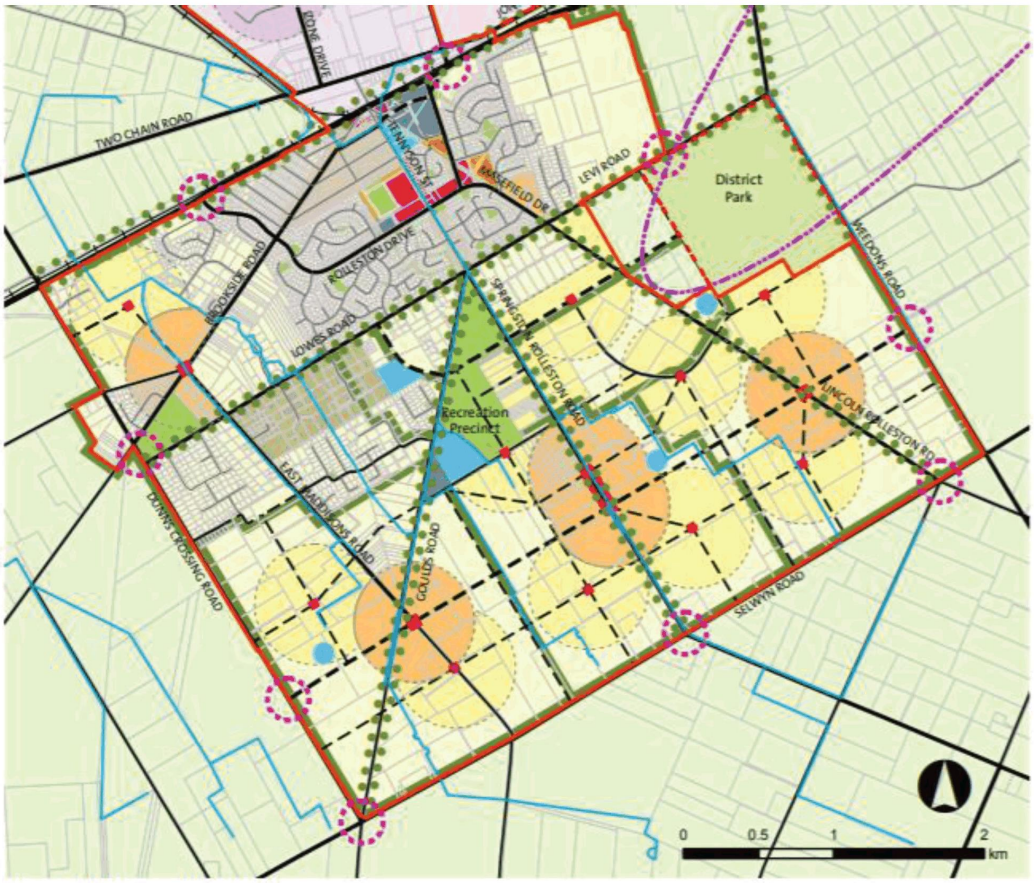


Figure 5.2: Rolleston Structure Plan

Study Area
Railway
National Arterial
Main (primary) roads
Proposed main (primary) roads
Local (secondary) roads
Proposed local (secondary) roads
Local (minor) roads
Walking and Cycling Link
Town Centre
Neighbourhood Centre
Local Centre
Comprehensive Housing
Medium Density Residential (20HH/Ha)
Medium Density Residential (15HH/Ha)
Low Density Residential (10HH/Ha)
Low Density Residential (7HH/Ha)
Community Facilities
Education Facilities
Green Corridors and Green Belt
District Park
Recreation Precinct and Reserves
Rural land
Avenue Planting
Izone Southern Business Hub
Water Races
Noise Contour
5 Minute Walk (400m)
Key Gateways

Future Development Area – Rolleston

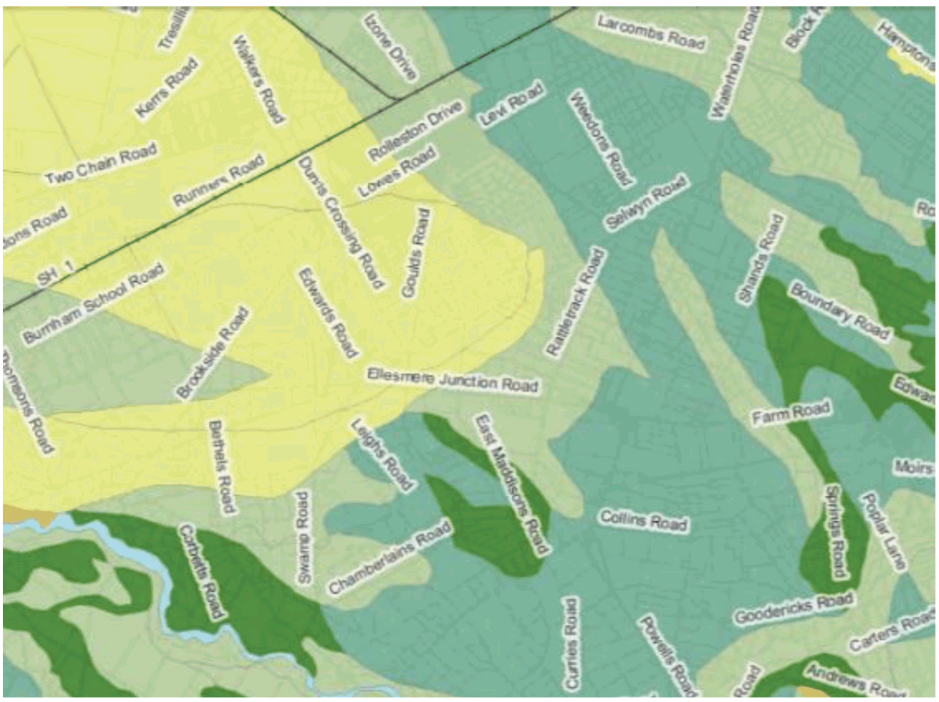
The Submitters support identification of their land for residential purposes in the above documents, but consider that it should be identified as Priority Greenfield Residential now, and rezoned Living Z to enable residential development to proceed. The Submitters singularly and combined have the larger remaining land parcels in this part of Rolleston, and have the same timeframes and intentions

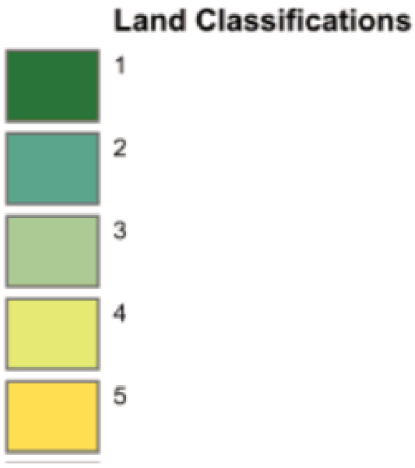
for release of their land for urban development i.e. now. This will facilitate the land's ready development to urban densities as they can be developed as one sizeable block with flexibility regarding location of roading, services etc.

Suitability of Land for Development

The Site is adjoining and can be readily serviced from existing neighouring Living Z and Housing Accord areas at south Rolleston. There are no natural hazard issues which would preclude rezoning. The Site is not subject to liquefaction or other natural hazard risks such as flooding or ponding. The light gravel soils are suitable for urban development.

The soils are Class 4 in terms of the versatility index as shown on the map below (Selwyn Rural Residential Strategy Appendix 2 Study Area Map 25 Soil Versatility):-





i.e. urban development will not take land which has high potential for agricultural production.

Housing Development Capacity Assessments

Our Space acknowledges that its housing capacity work is uncertain, in particular assessment of the commercial feasibility of development, and that work is required to improve the modelling tools used. It recognizes that given the range of reported feasibility, capacity may not be sufficient to meet demand over the medium term in Waimakariri and Selwyn. Notwithstanding no provision is made for further capacity in the medium term anywhere in Selwyn, and only at Rolleston in the long term. **Our Space** also recognizes that a responsive planning approach is required given the many uncertainties associated with the primary drivers and influencers of urban development in Greater Christchurch.

The consequences of an 'undersupply' of housing are more significant than the consequences of oversupply i.e. land scarcity which generally leads to higher land prices and greater incentive to land bank and achieve 'easier' return on capital (at no risk) by capitalizing on increasing land values rather than by undertaking development.

Relief Sought:

Additions are shown in bold and underlined and deletions as strike through.

1. Amend Fig 16: Proposed locations of future development areas in Greater Christchurch by as follows:-

- Change status of Rolleston Future Development Areas to Greenfield Priority Areas – Residential, including the Submitters' land.

2. 6.2 Schedule of future work

Amend 8 (page 34) as follows:-

Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement to:-

- address any need for additional housing development capacity over the short and medium term including at Rolleston including by amending Map A to be consistent with the other relief sought in this submission (including 1. above and 3. below); and
- provide flexibility to accommodate meritous proposals for urban development and zoning and to facilitate a responsive planning approach by amending and adding to the objectives and policies as follows (insertions in bold and underlined):-

Add new Policy 6.3.1A as below:-

Policy 6.3.1 A

(a) Enable urban development or zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

(i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

(ii) Any additional land will integrate with the provision of infrastructure; and

(iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

(iv) The beneficial planning outcomes for the urban development or extension outweigh any disbenefits arising from increasing the land available for urban development; and

(v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritous proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land

capacity assessments which have informed Map A, and the primary drivers and influencers of urban development in Greater Christchurch.

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 **or which has only minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.1 Development within the Greater Christchurch area

In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS **or which has minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.7 Residential location, yield and intensification

In relation to residential development opportunities in Greater Christchurch:

7. Subject to Policy 5.3.4, residential greenfield priority area development shall occur **generally** in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.

3. Specify in **Our Space** that Fig 16 be included in District Plans rather than the Canterbury Regional Policy, thus facilitating the ability for private plan requests for changes to the same, with appropriate criteria for assessment being included in the CRPS and/or District Plans; or as a less preferred alternative, other methods to retain flexibility and 'future proofing' to respond to meritous housing and business development proposals which give effect to the NPS-UDC but are not recognized or provided for in **Our Space** and supporting documents.

4. Consider streamlined RMA or other streamlined processes to facilitate the amendments sought which are specific to the Submitters' land and potentially other meritous minor rural/urban boundary changes, and associated policy wording. Do not use streamlined

processes for implementation of the overall **Our Space** strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

5. Such other consequential, additional or other amendments to Chapter 6 of the RPS and other documents, and any other actions, to be consistent with and give effect to the intent of this submission, including directing consequential amendment to the Selwyn District Plan to zone the Submitters' land Living Z.

Reasons for Relief Sought:-

1. For the reasons set out above under and under the responses to the Submission Form questions below.
2. The housing and business development capacity targets, urban form outcomes, and Schedule of Future Work measures (including change to the CRPS) contained in **Our Space** will have a profound and defining effect on the Greater Christchurch settlement pattern for the next 30 years. There will be very significant flow on effects for the local, regional and potentially national economies. There is no s32 assessment accompanying **Our Space** despite its defining role in 'dictating' the urban growth approach for Greater Christchurch for the next 30 years.
3. The amendments sought will enable the owners of the Site to use the Site in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).
4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects the Site, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.
5. The **Our Space** development capacity targets are uncertain and likely to be inaccurate and are based on a flawed methodology.
6. **Our Space** considers a responsive planning approach is necessary to future urban growth management for Greater Christchurch but does not enable or facilitate this whereas the relief sought in this submission will.
7. **Our Space** as notified is contrary to and does not give effect to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular Policy PB1 which requires housing capacity supply to meet demand for different types, locations and price points.

8. A fixed uncontestable urban/rural boundary line for Greater Christchurch as proposed by Our Space is unlikely to facilitate the urban form sought by **Our Space** including for the following reasons:-
    - Overly strict limitations on peripheral growth causes excessive land price inflation that in turn has a very negative effect on housing affordability;
    - A planning regulatory regime which provides for a contestable urban/rural boundary sends an important signal to the property market that it is best to get on with development rather than "land bank" (because there is excessive capital gain due to scarcity of land supply);
    - Containment and higher land values does not facilitate intensification;
    - If the Central City and the Key Activity Centres are attractive the market will locate there by people's choice. Generally carrots are better than sticks to achieve desired planning outcomes.
    - A contestable urban/rural boundary is not 'laissez-faire' and ad hoc and will not result in uncontained urban sprawl. The proposed amendments to Our Space and other planning documents require strategic planning including with respect to infrastructure, and an evidence base in support of any amendments to the boundary;
    - A policy of both "up and out" that ensures there are a range of development opportunities and housing choices is appropriate.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

The Future Development Area shown on Fig 16, in particular the Submitters' land, should be identified as Greenfield Priority Area and zoned Living Z now. See above for further background and reasons.

Question 2:

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.
Do you agree with this approach and why?

Response:
No comment.

Question 3:
Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.
What elements should be included in this action plan?

Response:
No comment.

Business Growth
Question 4:
Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.
Do you agree with this approach and why? What further measures would support such development?

Response:
No comment.

Question 5:
The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.
Do you agree or disagree this is sufficient and in the right location and why?

Response:
No comment.

Growth needs
Question 6:
The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.
Do you agree or disagree with this evidence base and why?

Response:
See comments above re Capacity Assessment.

Transport and other infrastructure
Question 7:
Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.
Do you agree or disagree with this approach and why?

Response:
No comment, other than it is noted that Rolleston will be connected by rapid transit under the **Our Space** proposals. However, no business case has been established for these proposals to date and they are highly uncertain. Further GF development at Rolleston should not be contingent on such facilities being in place first. The 4 laning of SH1 and the Southern Motorway extension will increase the ready accessibility to Christchurch City. Rolleston also has a significant and growing local employment area at Izone and the inland port.

Question 8:
Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.

Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:
No comment, other than it is noted that there are no infrastructure constraints affecting the development proposal.

Other
What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

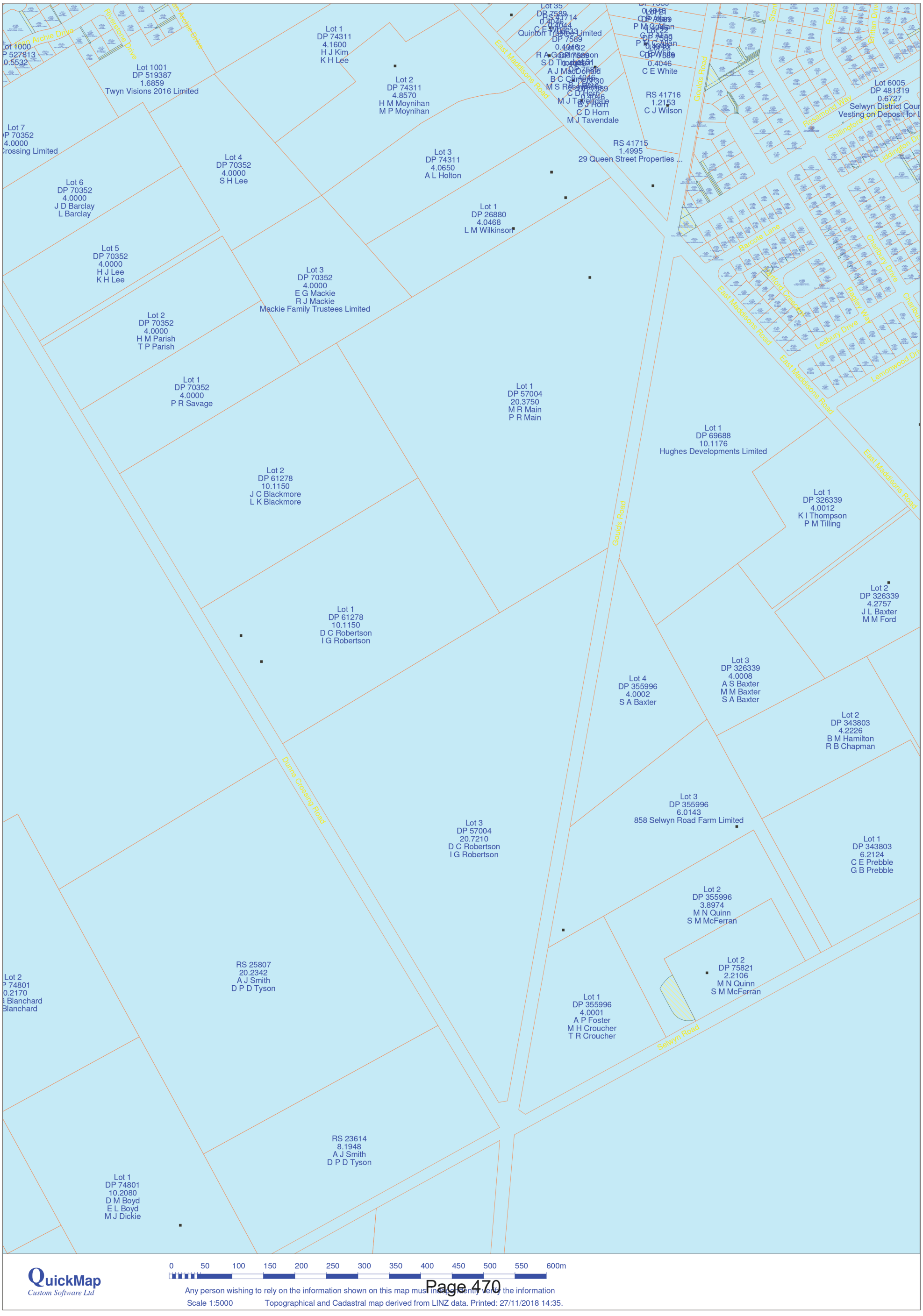
Response:
No further comments other than as noted above.

Appendices

Appendix A: Quick Map showing Submitters' Land

Appendix A

Quick Map showing Submitters' Land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DP 519387
1.6859
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Lot 1
DP 74311
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K H Lee
Lot 2
DP 74311
4.8570
H M Moynihan
M P Moynihan
Lot 35
DP 7589
0.4046
Quinton Trustees Limited
DP 7589
0.4046
C E White
RS 41716
1.2153
C J Wilson
RS 41715
1.4995
29 Queen Street Properties ...
Lot 6005
DP 481319
0.6727
Selwyn District Cour
Vesting on Deposit for
Lot 7
P 70352
4.0000
Crossing Limited
Lot 4
DP 70352
4.0000
S H Lee
Lot 3
DP 74311
4.0650
A L Holton
Lot 6
DP 70352
4.0000
J D Barclay
L Barclay
Lot 1
DP 26880
4.0468
L M Wilkinson
Lot 5
DP 70352
4.0000
H J Lee
K H Lee
Lot 3
DP 70352
4.0000
E G Mackie
R J Mackie
Mackie Family Trustees Limited
Lot 2
DP 70352
4.0000
H M Parish
T P Parish
Lot 1
DP 70352
4.0000
P R Savage
Lot 1
DP 57004
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M R Main
P R Main
Lot 1
DP 69688
10.1176
Hughes Developments Limited
Lot 1
DP 326339
4.0012
K I Thompson
P M Tilling
Lot 2
DP 326339
4.2757
J L Baxter
M M Ford
Lot 2
DP 61278
10.1150
J C Blackmore
L K Blackmore
Lot 1
DP 61278
10.1150
D C Robertson
I G Robertson
Lot 4
DP 355996
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S A Baxter
Lot 3
DP 326339
4.0008
A S Baxter
M M Baxter
S A Baxter
Lot 2
DP 343803
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B M Hamilton
R B Chapman
Lot 3
DP 355996
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858 Selwyn Road Farm Limited
Lot 1
DP 343803
6.2124
C E Prebble
G B Prebble
Lot 3
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D C Robertson
I G Robertson
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DP 355996
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Blanchard
RS 25807
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D P D Tyson
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M H Croucher
T R Croucher
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M N Quinn
S M McFerran
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D P D Tyson
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D M Boyd
E L Boyd
M J Dickie
East Maddisons Road
Goulds Road
Dunns Crossing Road
Selwyn Road
Rosamond Way
Shillingford Crescent
Liddington Drive
Barcode Lane
Chalbury Drive
Ledbury Drive
Lemonwood Drive
QuickMap
Custom Software Ltd
0 50 100 150 200 250 300 350 400 450 500 550 600m
Any person wishing to rely on the information shown on this map must independently verify the information
Scale 1:5000
Topographical and Cadastral map derived from LINZ data. Printed: 27/11/2018 14:35.

Submission No: 024

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

CJFA Holdings Ltd

November 2018

Greater Christchurch Partnership

Submitter Details

Name: CFA Holdings Ltd
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

We wish to speak at the hearings.
Preferred location: Selwyn District
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background and Site

The Submitter CF Holdings Ltd owns a 15.9235 ha at South Rolleston, immediately to the east and adjoining the Faringdon subdivision (see quick map attached as **Appendix A).**

The Site is located within the Canterbury Regional Policy Statement (CRPS) Projected Long Term Infrastructure Boundary for Rolleston shown on Map A, and is shown on **Our Space** Fig 16 as Future Development Area. It is identified as residential land on the Rolleston Structure Plan as shown below.

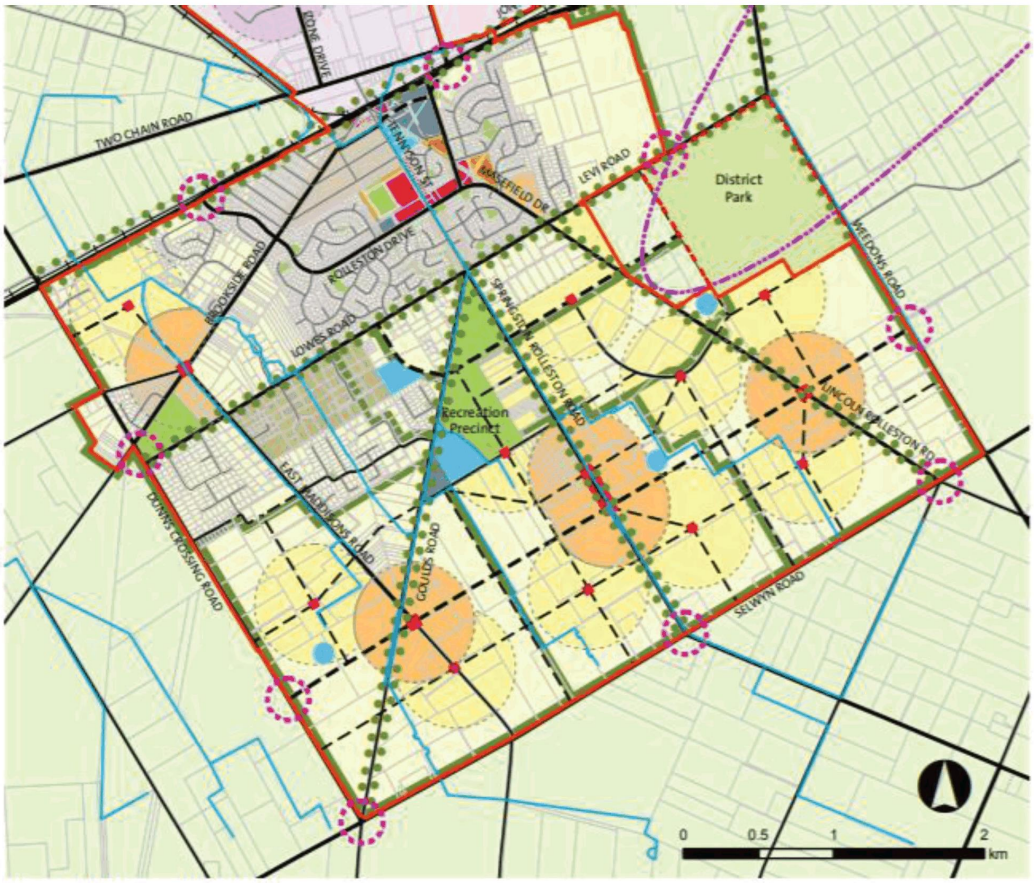


Figure 5.2: Rolleston Structure Plan

Study Area
Railway
National Arterial
Main (primary) roads
Proposed main (primary) roads
Local (secondary) roads
Proposed local (secondary) roads
Local (minor) roads
Walking and Cycling Link
Town Centre
Neighbourhood Centre
Local Centre
Comprehensive Housing
Medium Density Residential (20HH/Ha)
Medium Density Residential (15HH/Ha)
Low Density Residential (10HH/Ha)
Low Density Residential (7HH/Ha)
Community Facilities
Education Facilities
Green Corridors and Green Belt
District Park
Recreation Precinct and Reserves
Rural land
Avenue Planting
Izone Southern Business Hub
Water Races
Noise Contour
5 Minute Walk (400m)
Key Gateways

Future Development Area – Rolleston

The Submitter supports identification of their land for residential purposes in the above documents, but consider that it should be identified as Priority Greenfield Residential now, and rezoned Living Z to enable residential development to proceed.

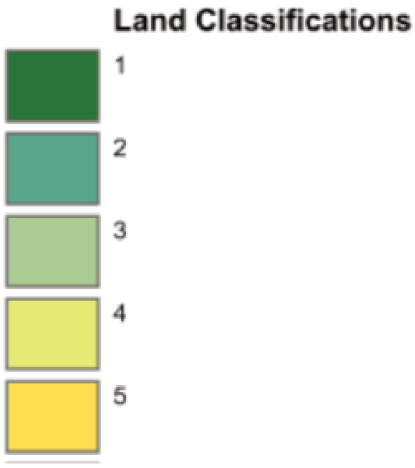
Aston Consultants Resource Management & Planning

Suitability of Land for Development

The Site is adjoining and can be readily serviced from the existing neighbouring Faringdon subdivision. There are no natural hazard issues which would preclude rezoning. The Site is not subject to liquefaction or other natural hazard risks such as flooding or ponding. The light gravel soils are suitable for urban development.

The soils are Class 4 in terms of the versatility index as shown on the map below (Selwyn Rural Residential Strategy Appendix 2 Study Area Map 25 Soil Versatility):-





i.e. urban development will not take land which has high potential for agricultural production.

Housing Development Capacity Assessments

Our Space acknowledges that its housing capacity work is uncertain, in particular assessment of the commercial feasibility of development, and that work is required to improve the modelling tools used. It recognizes that given the range of reported feasibility, capacity may not be sufficient to meet demand over the medium term in Waimakariri and Selwyn. Notwithstanding no provision is made for further capacity in the medium term anywhere in Selwyn, and only at Rolleston in the long term. **Our Space** also recognizes that a responsive planning approach is required given the many uncertainties associated with the primary drivers and influencers of urban development in Greater Christchurch.

The consequences of an 'undersupply' of housing are more significant than the consequences of oversupply i.e. land scarcity which generally leads to higher land prices and greater incentive to land bank and achieve 'easier' return on capital (at no risk) by capitalizing on increasing land values rather than by undertaking development.

Relief Sought:

Additions are shown in bold and underlined and deletions as strike through.

1. Amend Fig 16: Proposed locations of future development areas in Greater Christchurch by as follows:-

- Change status of Rolleston Future Development Areas to Greenfield Priority Areas – Residential, including the Submitter's land.

2. 6.2 Schedule of future work

Amend 8 (page 34) as follows:-

Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement to:-

- address any need for additional housing development capacity over the short and medium term including at Rolleston including by amending Map A to be consistent with the other relief sought in this submission (including 1. above and 3. below); and
- provide flexibility to accommodate meritous proposals for urban development and zoning and to facilitate a responsive planning approach by amending and adding to the objectives and policies as follows (insertions in bold and underlined):-

Add new Policy 6.3.1A as below:-

Policy 6.3.1 A

(a) Enable urban development or zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

(i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

(ii) Any additional land will integrate with the provision of infrastructure; and

(iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

(iv) The beneficial planning outcomes for the urban development or extension outweigh any disbenefits arising from increasing the land available for urban development; and

(v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritous proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land

capacity assessments which have informed Map A, and the primary drivers and influencers of urban development in Greater Christchurch.

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 **or which has only minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.1 Development within the Greater Christchurch area

In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS **or which has minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.7 Residential location, yield and intensification

In relation to residential development opportunities in Greater Christchurch:

7. Subject to Policy 5.3.4, residential greenfield priority area development shall occur **generally** in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.

3. Specify in **Our Space** that Fig 16 be included in District Plans rather than the Canterbury Regional Policy, thus facilitating the ability for private plan requests for changes to the same, with appropriate criteria for assessment being included in the CRPS and/or District Plans; or as a less preferred alternative, other methods to retain flexibility and 'future proofing' to respond to meritous housing and business development proposals which give effect to the NPS-UDC but are not recognized or provided for in **Our Space** and supporting documents.

4. Consider other amendments to the CRPS and other documents and other actions which are appropriate to facilitate **Our Space's** proposed responsive planning approach to urban

growth management for Greater Christchurch.[1]

5. Consider streamlined RMA or other streamlined processes to facilitate the amendments sought which are specific to the Submitters' land and potentially other meritous minor rural/urban boundary changes, and associated policy wording. Do not use streamlined processes for implementation of the overall **Our Space** strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

6. Such other consequential, additional or other amendments to Chapter 6 of the RPS and other documents, and any other actions, to be consistent with and give effect to the intent of this submission, including directing consequential amendment to the Selwyn District Plan to zone the Submitter's land Living Z.

Reasons for Relief Sought:-

1. For the reasons set out above under and under the responses to the Submission Form questions below.
2. The housing and business development capacity targets, urban form outcomes, and Schedule of Future Work measures (including change to the CRPS) contained in **Our Space** will have a profound and defining effect on the Greater Christchurch settlement pattern for the next 30 years. There will be very significant flow on effects for the local, regional and potentially national economies. There is no s32 assessment accompanying **Our Space** despite its defining role in 'dictating' the urban growth approach for Greater Christchurch for the next 30 years.
3. The amendments sought will enable the owners of the Site to use the Site in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).
4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects the Site, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.
5. The **Our Space** development capacity targets are uncertain and likely to be inaccurate and are based on a flawed methodology.

---

[1] Open Space 6.1 Responsive Planning
Aston Consultants Resource Management & Planning

6. **Our Space** considers a responsive planning approach is necessary but does not facilitate this, including the recommended further work and implementation, whereas the relief sought in this submission will facilitate this.
7. **Our Space** as notified is contrary to and does not give effect to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular Policy PB1 which requires housing capacity supply to meet demand for different types, locations and price points.
8. A fixed uncontestable urban/rural boundary line for Greater Christchurch as proposed by **Our Space** is unlikely to facilitate the urban form sought by **Our Space** including for the following reasons:-
    - Overly strict limitations on peripheral growth causes excessive land price inflation that in turn has a very negative effect on housing affordability;
    - A planning regulatory regime which provides for a contestable urban/rural boundary sends an important signal to the property market that it is best to get on with development rather than "land bank" (because there is excessive capital gain due to scarcity of land supply);
    - Containment and higher land values does not facilitate intensification;
    - If the Central City and the Key Activity Centres are attractive the market will locate there by people's choice. Generally carrots are better than sticks to achieve desired planning outcomes.
    - A contestable urban/rural boundary is not 'laissez-faire' and ad hoc and will not result in uncontained urban sprawl. The proposed amendments to Our Space and other planning documents require strategic planning including with respect to infrastructure, and an evidence base in support of any amendments to the boundary;
    - A policy of both "up and out" that ensures there are a range of development opportunities and housing choices is appropriate.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:
The Future Development Area shown on Fig 16, in particular the Submitter's land, should be identified as Greenfield Priority Area and zoned Living Z now. See above for further background and reasons.

Question 2:
Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.
Do you agree with this approach and why?

Response:
No comment.

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Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.
What elements should be included in this action plan?

Response:
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Business Growth
Question 4:
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Do you agree with this approach and why? What further measures would support such development?

Response:
No comment.

Question 5:
The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.
Do you agree or disagree this is sufficient and in the right location and why?

Response:
No comment.

Growth needs
Question 6:
The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.
Do you agree or disagree with this evidence base and why?

Response:
See comments above re Capacity Assessment.

Transport and other infrastructure
Question 7:
Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.
Do you agree or disagree with this approach and why?

Response:
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Question 8:

Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.

Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:

No comment, other than it is noted that there are no infrastructure constraints affecting the development proposal.

Other

What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

Response:

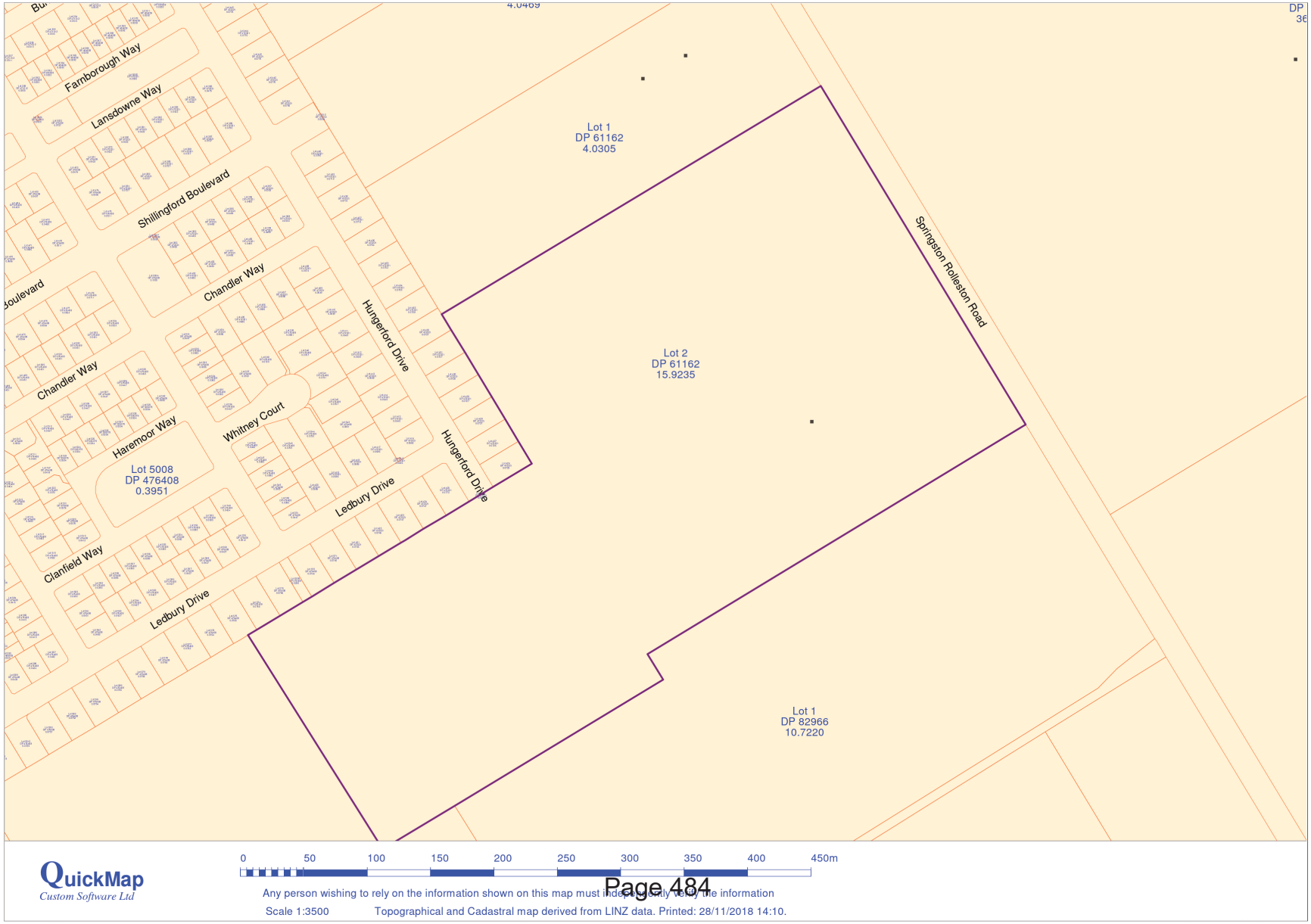
No further comments other than as noted above.

Appendices:

Appendix A: Quick Map

Appendix A

Quick Map



Attachment D Item 4

Submission No: 022

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

Sharon Jones

November 2018

Greater Christchurch Partnership

Aston Consultants Resource Management & Planning

Submitter Details

Name: Sharon Jones
Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

We wish to speak at the hearings.
Preferred location: Selwyn District
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background and Site

The Submitter ('the Submitter') owns an existing 4 ha property at 274 Lincoln Rolleston Road ('the Site), legally described as Lot 2 DP 67190 BLK III. The Site is opposite the Branthwaite Drive residential subdivision, currently under development (see location plan below).



Fig.1 Location Plan

Submitters Land – Sharon Jones

Neighbouring land

The Site includes an existing dwelling and horse arena. The Submitter proposes to relocate to another rural property more suitably located for horse related activities, as the Site is now next to the Rolleston urban boundary and its rural amenity character has been significantly diminished due to surrounding residential subdivision and urban development at Rolleston which is proceeding at pace – and which is visible from the property, along with other urban elements including urban street lights. The adjoining roads are much busier than prior to recent urban development and not safe for horses.

The Site (and an adjoining 4 ha lot adjoining to the north, and the Purdon block (with frontage to Levi Road and extending behind the Site), referred to hereafter to as 'the Neighbouring Land') is within the Christchurch International Airport Noise contour as shown on the Rolleston Structure Plan below.

For this reason, it retains its current Rural Inner Plains zoning despite its proximity to the Rolleston urban area. The Rolleston Structure Plan shows a proposed '100 ha District Park' for the balance of the land within the 50 dBA contour south of Levi Road and west of Weedons Ross Road large block to the east, extending to Weedons Road (zoned Rural Inner Plains).

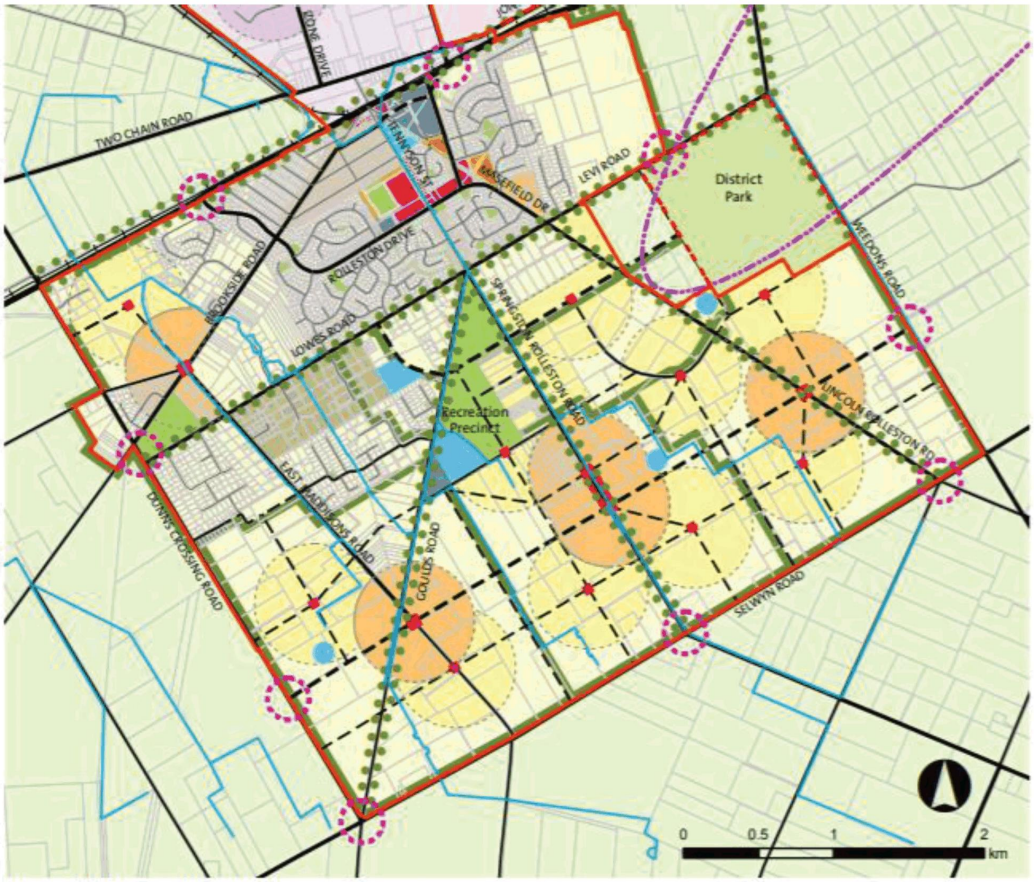


Figure 5.2: Rolleston Structure Plan

Study Area
Railway
National Arterial
Main (primary) roads
Proposed main (primary) roads
Local (secondary) roads
Proposed local (secondary) roads
Local (minor) roads
Walking and Cycling Link
Town Centre
Neighbourhood Centre
Local Centre
Comprehensive Housing
Medium Density Residential (20HH/Ha)
Medium Density Residential (15HH/Ha)
Low Density Residential (10HH/Ha)
Low Density Residential (7HH/Ha)
Community Facilities
Education Facilities
Green Corridors and Green Belt
District Park
Recreation Precinct and Reserves
Rural land
Avenue Planting
Izone Southern Business Hub
Water Races
Noise Contour
5 Minute Walk (400m)
Key Gateways

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Possible district-scaled uses noted in the Structure Plan[1] for the District Plan include:

- *community gardens*
- *equestrian*
- *rowing*
- *cycling (mountain biking or road riding)*
- *local energy generation*
- *ecological areas*
- *cemetery/ crematorium*

It is envisaged that this park would be a district-wide facility that caters for recreational/community activities that may not be in more urban open spaces such as the 'Rolleston Recreation Precinct'. To date the park remains undeveloped is leased for farming purposes.

The Site and Neighbouring Land as noted above is located outside the Canterbury Regional Policy Statement (CRPS) Projected Long Term Infrastructure Boundary for Rolleston shown on Map A – the boundary otherwise extends further west to Weedons Ross Road but excludes this area because it is within the 50 dBA noise contour. For the same reason it is outside the Rolleston Future Development Area shown on Fig 16 of **Our Space.**

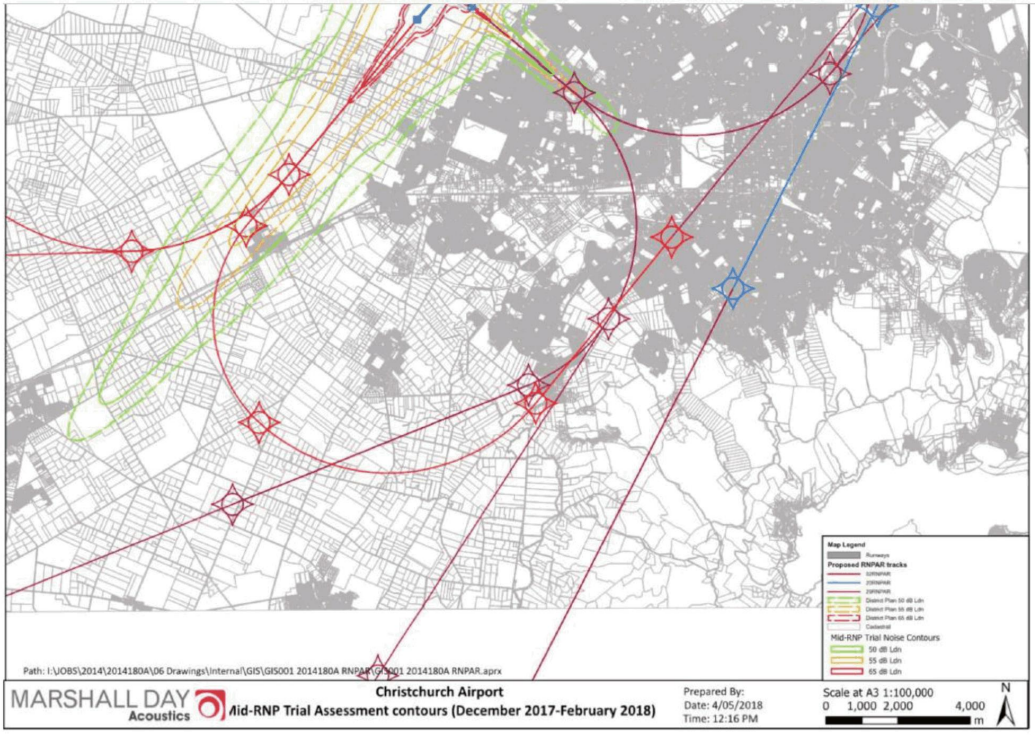
Amendments to Airport Noise Contours

Christchurch International Airport (CIAL) are currently trialling alternative flight paths which will result in the southern extent of the flight path contracting as shown on the plan below – see copy of Interim Report attached as **Appendix A**. The interim report notes that the alternative flight paths have multiple benefits including fuel saving, reduced travel time and less noise impact on residential areas – "*The initial findings of the trial confirm aircraft are flying at a higher altitude over the city and concentrated populous areas, which results in reduced audible noise. There are also fewer flights over the suburbs of Wigram, Hornby, Prebbleton and Rolleston, and the trial flight paths avoid direct overflight of Templeton and West Melton settlements.*"[2]

The report does note that non PBN approach flights may still be used in fine weather, for air traffic control reasons for training purposes (PBN is a global air navigation standard, being introduced in accordance with international guidance and New Zealand government policy)

[1] Rolleston Structure Plan Section 7
[2] PBN Flight Paths Trial 2017-2018: Interim Report p

The above work indicates that amendments to the CIAL airport noise contours are highly likely in the short term. **Our Space** has a 30 year timeframe (till 2048) so clearly needs to be updated to recognise the above imminent changes to the airport noise contours. There will no longer be any planning constraints to the Submitter's land and Neighbouring Land being included in the intended urban development area for Rolleston (currently shown as Future Development Area on **Our Space** Fig 16.). Inclusion of this land will consolidate the Rolleston urban form, creating a continuous and logical eastern boundary line along the length of Weedons Ross Road south of Levi Road to Selwyn Road.



Future Development Area – Rolleston

The Submitter supports identification of Future Development Area ('FDA') at Rolleston in **Our Space,** but with the inclusion of the Submitter's land and the Neighbouring Land. However, she considers the FDA, as amended to include the additional land as above, should be identified as Priority Greenfield Residential now, and rezoned Living Z to enable residential development to proceed.

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Suitability of Land for Development

The Site and Neighbouring Land is adjoining and can be readily serviced from the existing Living Z areas, in particular the Branthwaite Drive subdivision on the opposite side of Springston Rolleston Road. There are no natural hazard issues which would preclude rezoning. The Site is not subject to liquefaction or other natural hazard risks such as flooding or ponding. The Site is a logical location for further urban development at Rolleston, especially given its relative proximity to the town centre.

Housing Development Capacity Assessments

Our Space acknowledges that its housing capacity work is uncertain, in particular assessment of the commercial feasibility of development, and that work is required to improve the modelling tools used. It recognizes that given the range of reported feasibility, capacity may not be sufficient to meet demand over the medium term in Waimakariri and Selwyn. Notwithstanding no provision is made for further capacity in the medium term anywhere in Selwyn, and only at Rolleston in the long term. **Our Space** also recognizes that a responsive planning approach is required given the many uncertainties associated with the primary drivers and influencers of urban development in Greater Christchurch.

The consequences of an 'undersupply' of housing are more significant than the consequences of oversupply i.e. land scarcity which generally leads to higher land prices and greater incentive to land bank and achieve 'easier' return on capital (at no risk) by capitalizing on increasing land values rather than by undertaking development.

Relief Sought:

Additions are shown in bold and underlined and deletions as strike through.

1. Amend **Our Space** Fig 16: Proposed locations of future development areas in Greater Christchurch as follows:-
   - Identify Submitter's land and Neighbouring Land south of Levi Road and west of Weedons Ross Road, Rolleston as shown on Fig 1 Location Plan above as Greenfield Priority Residential and include with the Rolleston Projected Infrastructure Boundary;
   - Change the status of Rolleston Future Development Area to Greenfield Priority Areas – Residential

2. **Our Space** 6.2 Schedule of future work

Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement to:-

- address any need for additional housing development capacity over the **short and** medium term **including at Rolleston** including by amending Map A to be consistent with the other relief sought in this submission (including 1. above and 3. below); and
- provide flexibility to accommodate meritous proposals for urban development and zoning and to facilitate a responsive planning approach by adding an additional policy as follows:-

Policy 6.3.1 A

(a) Enable urban development or zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

(i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

(ii) Any additional land will integrate with the provision of infrastructure; and

(iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

(iv) The beneficial planning outcomes for the urban development or extension outweigh any disbenefits arising from increasing the land available for urban development; and

(v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritous proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land capacity assessments which have informed Map A, and the primary drivers and influencers of urban development in Greater Christchurch.

3. Specify in **Our Space** that Fig 16 be included in District Plans rather than the Canterbury Regional Policy, thus facilitating the ability for private plan requests for changes to the same, with appropriate criteria for assessment being included in the CRPS and/or District Plans; or as a less preferred alternative, other methods to retain flexibility and 'future proofing' to

respond to meritous housing and business development proposals which give effect to the NPS-UDC but are not recognized or provided for in **Our Space** and supporting documents.

4. Consider other amendments to the CRPS and other documents and other actions which are appropriate to a facilitate **Our Space's** proposed responsive planning approach to urban growth management for Greater Christchurch[3].

5. Consider streamlined RMA or other streamlined processes to facilitate the amendments sought which are specific to the Submitters' land and which provide flexibility to provide for meritous zoning and urban development, including associated policy wording. Do not use streamlined processes for implementation of the overall **Our Space** strategy and approach as notified which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

6. Such other consequential, additional or other amendments to Chapter 6 of the CRPS and other documents, and any other actions, to be consistent with and give effect to the intent of this submission, including directing consequential amendment to the Selwyn District Plan to zone the Submitter's land and the Neighbouring Land Living Z.

Reasons for Relief Sought:-

1. For the reasons set out above under and under the responses to the Submission Form questions below.
2. The housing and business development capacity targets, urban form outcomes, and Schedule of Future Work measures (including change to the CRPS) contained in **Our Space** will have a profound and defining effect on the Greater Christchurch settlement pattern for the next 30 years. There will be very significant flow on effects for the local, regional and potentially national economies. There is no s32 assessment accompanying **Our Space** despite its defining role in 'dictating' the urban growth approach for Greater Christchurch for the next 30 years.
3. The amendments sought will enable the owners of the Site and the Neighbouring Land to use their land in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).

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[3] Open Space, 6.1 Responsive Planning
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4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects the Site and the Neighbouring Land, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.
5. The **Our Space** development capacity targets are uncertain and likely to be inaccurate and are based on a flawed methodology.
6. **Our Space** considers a responsive planning approach is necessary but the proposed implementation methods will not facilitate this, whereas the relief sought in this submission will.
7. **Our Space** as notified is contrary to and does not give effect to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular but not limited to Policy PB1 which requires housing capacity supply to meet demand for different types, locations and price points.
8. A fixed uncontestable urban/rural boundary line for Greater Christchurch as proposed by **Our Space** is unlikely to facilitate the urban form outcomes sought by **Our Space** including for the following reasons:-
    - Overly strict limitations on peripheral growth causes excessive land price inflation that in turn has a very negative effect on housing affordability;
    - A planning regulatory regime which provides for a contestable urban/rural boundary sends an important signal to the property market that it is best to get on with development rather than “land bank” (because there is excessive capital gain due to scarcity of land supply);
    - Containment and higher land values does not facilitate intensification;
    - If the Central City and the Key Activity Centres are attractive the market will locate there by people’s choice. Generally carrots are better than sticks to achieve desired planning outcomes.
    - A contestable urban/rural boundary is not ‘laissez-faire’ and ad hoc and will not result in uncontained urban sprawl. The proposed amendments to Our Space and other planning documents require strategic planning including with respect to infrastructure, and an evidence base in support of any amendments to the boundary;
    - A policy of both “up and out” that ensures there are a range of development opportunities and housing choices is appropriate.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

The Submitter's land and Neighbouring Land should be included in the Rolleston Future Development Area shown in Fig 16, but the Rolleston Future Development Area should be identified as Greenfield Priority Area and zoned Living Z now. See above for further background and reasons.

Question 2:

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.

Do you agree with this approach and why?

Response:

No comment.

Question 3:

Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.

What elements should be included in this action plan?

Response:

No comment.

Business Growth

Question 4:

Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.
Do you agree with this approach and why? What further measures would support such development?

Response:
No comment.

Question 5:
The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.
Do you agree or disagree this is sufficient and in the right location and why?

Response:
No comment.

Growth needs
Question 6:
The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.
Do you agree or disagree with this evidence base and why?

Response:
See comments above re Capacity Assessment.

Transport and other infrastructure
Question 7:
Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent

transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.
Do you agree or disagree with this approach and why?

Response:
No comment, other than it is noted that Rolleston will be connected by rapid transit under the **Our Space** proposals. However, no business case has been established for these proposals to date and they are highly uncertain. Further greenfield development at Rolleston should not be contingent on such facilities being in place first. The 4 laning of SH1 and the Southern Motorway extension will increase the ready accessibility to Christchurch City. Rolleston also has a significant and growing local employment area at Izone and the inland port.

Question 8:
Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.
Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:
No comment, other than it is noted that there are no infrastructure constraints affecting the Submitter's land and the Neighbouring Land.

Other
What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

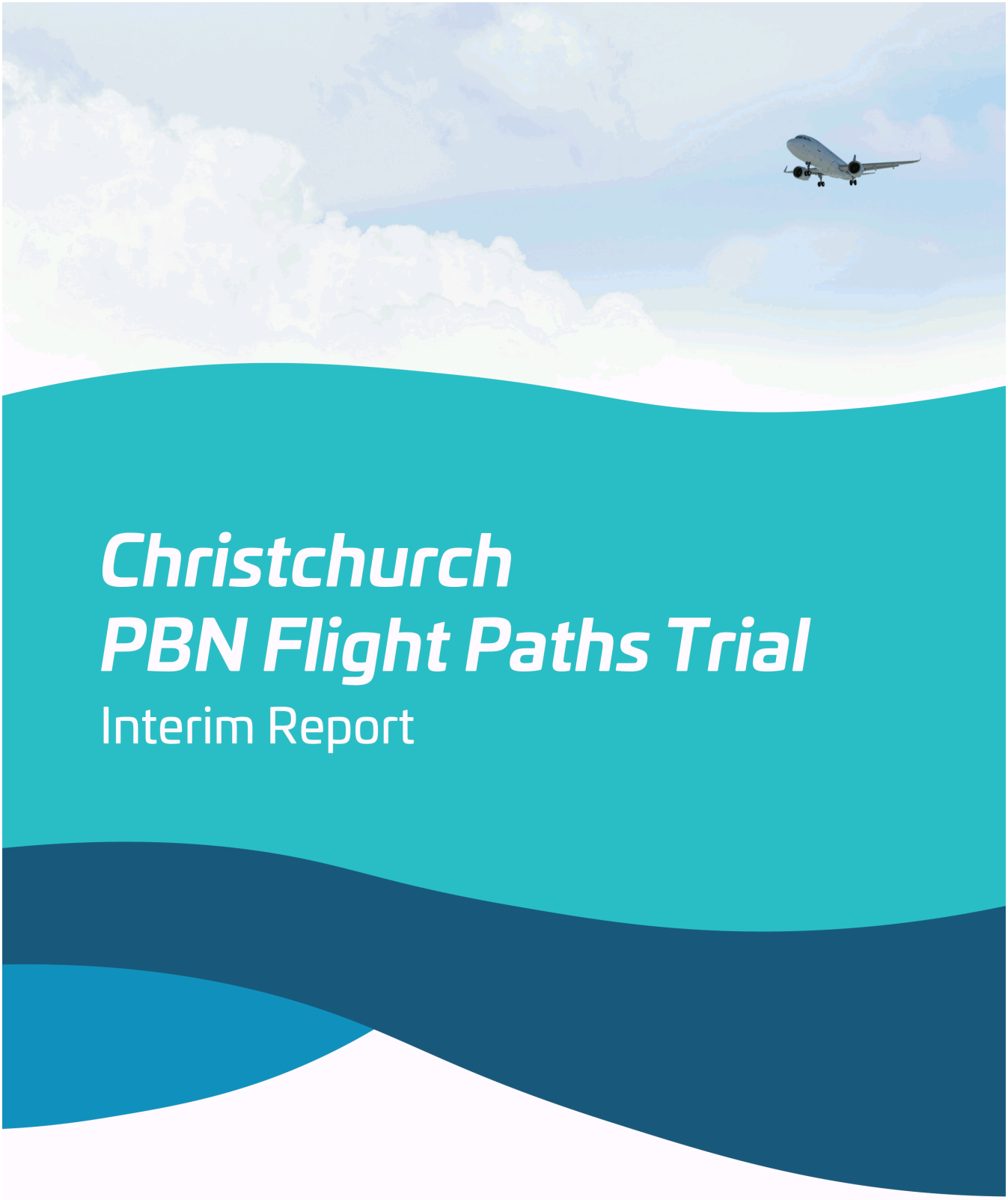
Response:
No further comments other than as noted above.

Appendices

Appendix A: Amendments to Airport Noise Contours – Interim Report

Appendix A

Amendments to Airport Noise Contours – Interim Report



Christchurch PBN Flight Paths Trial

Interim Report

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CHRISTCHURCH AIRPORT

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Christchurch PBN Flight Paths Trial

Interim Report

PBN trial partners have prepared the following summary outlining progress of the PBN flight paths trial. A full report is to be issued on completion of the 12 month trial at the end of 2018. Airways New Zealand, the Board of Airline Representatives New Zealand (BARNZ), Christchurch Airport and New Southern Sky (NSS) approved this interim review and recommendations of the PBN flight paths trial.

Interim Review of 2017-2018 Christchurch PBN Flight Paths Trial

On 9 November 2017 Airways New Zealand, BARNZ, Christchurch Airport and NSS began a trial of Performance Based Navigation (PBN) flight paths in Christchurch. PBN is a global air navigation standard, being introduced in accordance with international guidance and New Zealand government policy. The 12-month flight paths trial is for arrivals to Christchurch only and is part of NSS, a 10-year programme led by NZ Civil Aviation Authority that is introducing major changes to New Zealand's aviation system in order to make air travel smarter, quicker, safer and more sustainable.

Christchurch PBN Approach Flight Paths

The PBN approach paths selected for the trial were the product of consultation between Airways New Zealand, BARNZ, Christchurch Airport and NSS. The philosophy adopted when selecting any flight path is to achieve a level of consensus by balancing the technical and operational needs of the trial, with an aim to moderate the overall noise effects on communities. The initial findings of the trial confirm aircraft are flying at a higher altitude over the city and concentrated populous areas, which results in reduced audible noise. There are also fewer flights over the suburbs of Wigram, Hornby, Prebbleton and Rolleston, and the trial flight paths avoid direct overflight of Templeton and West Melton settlements. The trial continues to receive valuable feedback from communities and individuals, and the four trial partners will continue to assess these as the trial progresses.

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Participating Aircraft

Most domestic and trans-Tasman jet aircraft are capable of flying the trial approaches and, later in 2018, some propeller aircraft will also become capable. However it is anticipated that many of these aircraft will still fly a non-PBN trial approach in fine weather (including north-westerly conditions using Runway 29), or for training, or for air traffic control reasons.

Flight Path Trial

The trial enables the collection of data (such as noise monitoring, number of flights) and community feedback, and helps to achieve the best balance of safety, airspace management and environmental benefits - such as noise reduction for communities, fuel and carbon emission savings.

Operational Data

For the period 9 November 2017 to 9 May 2018, Christchurch PBN trial flight paths were utilised by 2,607 aircraft. These aircraft flew 19,100 fewer kilometers, when compared to the shortest alternative instrument approach, and provided a number of additional benefits.

Christchurch Runway	Total trial flights 09 Nov 17-09 May 18	Maximum trial flights/day	Maximum trial traffic %/day
02	2108	28	30%
20	240	7[1]	7%
29	259	31	31%

[1] Trial flightpaths were not provided 'Straight-in' as existing approaches are already very efficient. Hence there is a low % of trial flightpath usage relating to Runway 20 - because the majority of arrival fights to Christchurch are inbound from the north (i.e. straight in for Runway 20).

Calculated benefits for the first six months:

Distance saved	19,100 km
Flight time reduction	1,500 minutes
Fuel saving	57,000 kgs
CO_2 emissions	182,000 kgs
Passengers	379,000 [1]

[1] Number of passengers who received reduced flight times and other benefits from PBN vertically guided approaches.

Noise Data

The mid-trial calculation of noise contours (included in figure 4) identified that noise generated during the first six months of trial fits within the District Plan compliance contours. In addition to the calculated noise contours, noise measurement data on aircraft noise levels was gathered from six noise measurement terminals installed under the trial flight paths. In general, noise levels measured during the trial are comparable with pre-trial noise levels. Noise experts are completing a detailed analysis of the data for inclusion in the final trial report.

Community Feedback

Feedback from the community was actively sought during the first six months of the trial, through announcements in the news media as well as via a dedicated website (www.christchurchflightpathstrial.co.nz) which featured information about the trial and provided a feedback form.

In total, 118 flight path feedback messages were received from the community, though some were found not to be PBN related. This leaves us with 76 complaints from 46 separate complainants, as well as 15 neutral/undecided and 18 positive responses at the six month point. Refer to Figure 2 for a graphic indication of geographical responses.

All enquiries were responded to by Christchurch Airport, with specific and individualised information provided by the partners. This feedback has been incorporated into the interim recommendations.

Interim Recommendations

The following interim recommendations have been made by the trial partners as a result of the 2017-2018 Christchurch PBN flight paths trial interim review:

1. Continue the one-year trial of PBN flight paths for arrivals to Christchurch Airport as planned, because a range of benefits is being achieved, and valuable data and feedback is being gathered.
2. Restrict the use of sensitive PBN flight paths prior to 9am on weekends from 14 July 2018. This is a direct response to community feedback and is expected to provide a material reduction in the noise impact for some residents.
3. Design an additional PBN flight path to approach runway 02 from the northwest (east of West Melton), as an alternative to the current PBN flight path. This would address residential noise concerns and increase pilot participation.
    a. Trialing a new flight path may be achievable from 8 November 2018.
    b. Noise sharing across these two flight paths should be considered as a future option.

These recommendations have been considered and agreed to by the four trial partners

Information about the Christchurch flight paths trial will continue to be made available on this website (www.christchurchflightpathstrial.co.nz), and a full report will be prepared and released following completion of the trial on 8 November 2018.

Figure 1: Christchurch PBN Trial Flightpaths:



Figure 2: Christchurch PBN Trial Flightpaths with indicative geographical responses (green positive, red negative):



Figure 3: Christchurch PBN Trial Flightpaths – Recommended New Flightpath (red):

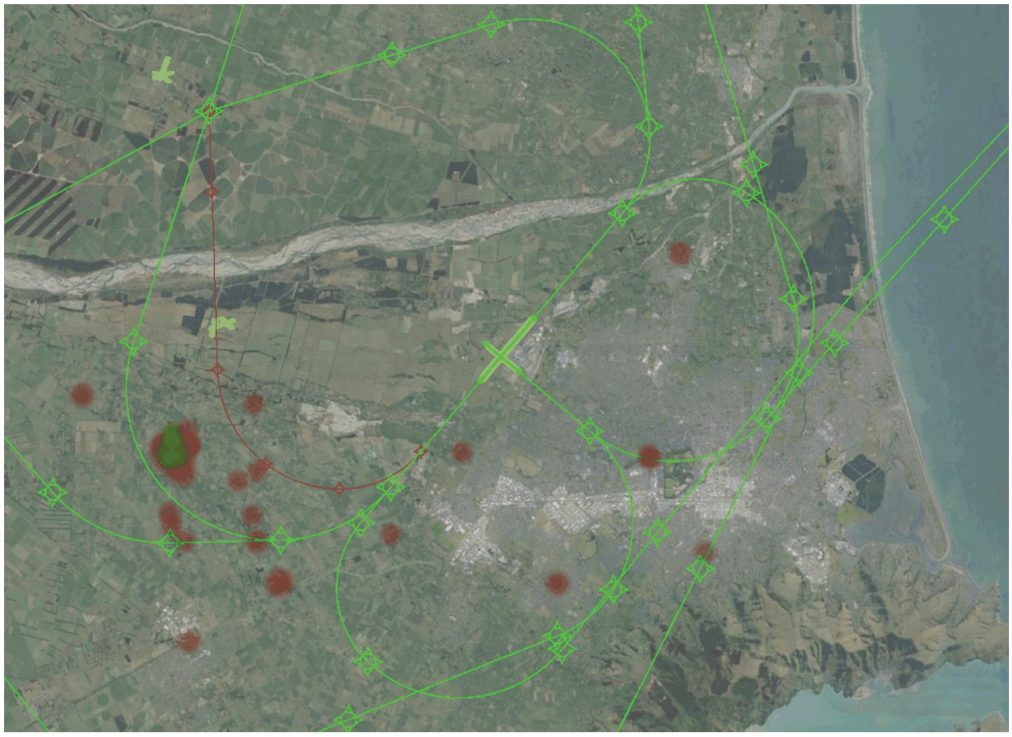
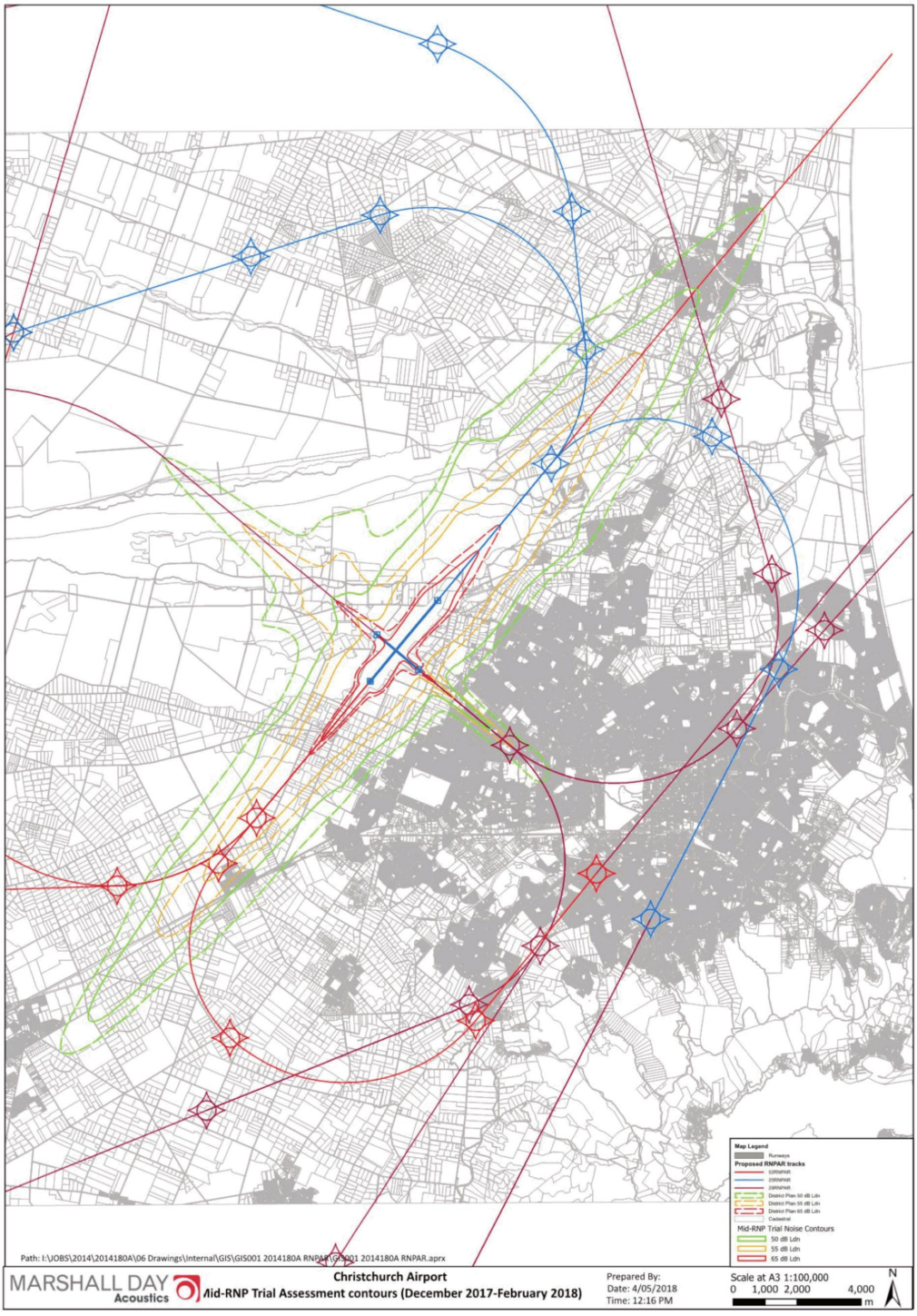


Figure 4: Christchurch PBN Trial Flightpaths – showing calculated noise contours in comparison with the District Plan Compliance Contours



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Submission No: 026

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

Elliss Darusette Ltd

November 2018

Greater Christchurch Partnership

Submitter Details

Name: Elliss Darusette

Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140

Email address: fiona@astonconsultants.co.nz

Phone Number: 03 3322618

Mobile Number: 0275 332213

Contact Person Fiona Aston

Hearings:

I wish speak at the hearings.

Preferred location: Selwyn District.

Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background:

Ellis Darussette Ltd owns 606 Selwyn Road, Rolleston ('the Site'), a 1.207 ha block which immediately adjoins the Geddes South Rolleston Special Housing Area ('SHA') known as Chelsea Green (See Figure 1 below). Chelsea Green and the Site are both currently zoned Rural Inner Plains but are within the Projected Infrastructure Boundary on Map A of the Canterbury Regional Policy Statement (CRPS) and within the Rolleston Structure Plan long term urban boundary (see Rolleston Structure Plan map below). The exclusion of the Site from the SHA is an anomaly and in effect creates a small 'tooth like' intrusion of rural land into the otherwise logical SHA boundary, and resulting in the Site having urban development on two sides.

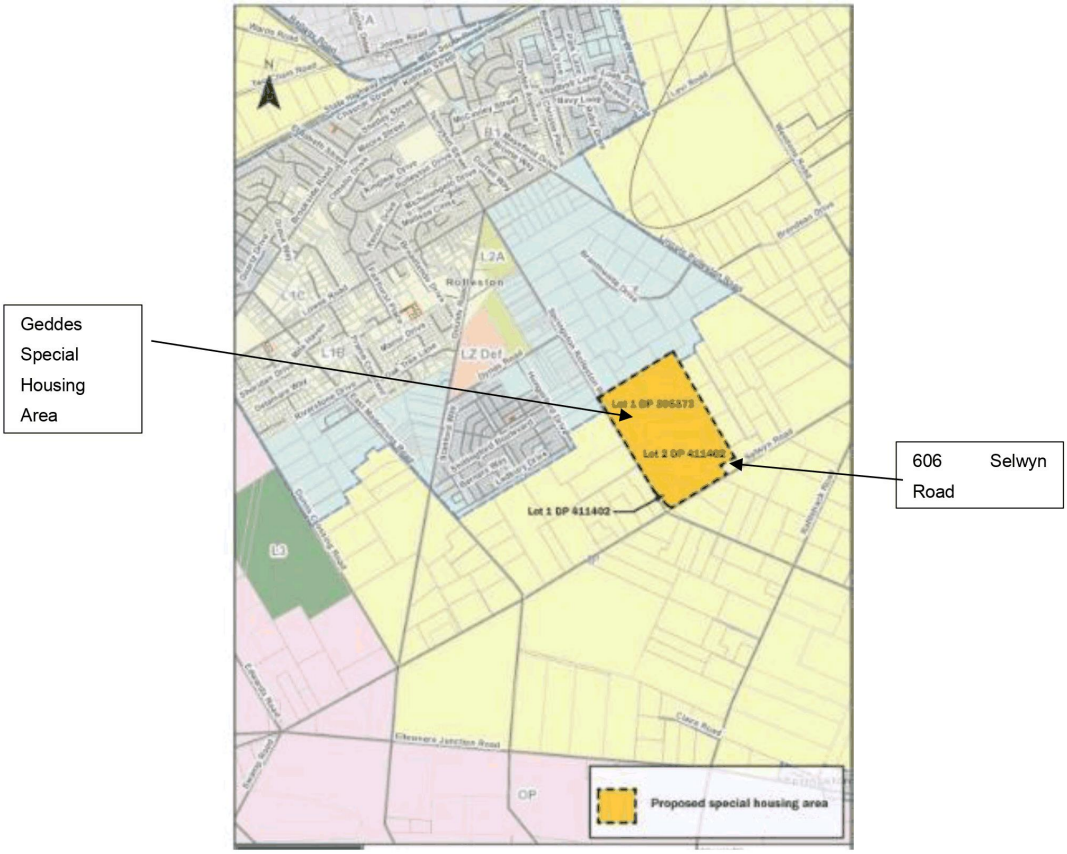


Figure 1 – Location

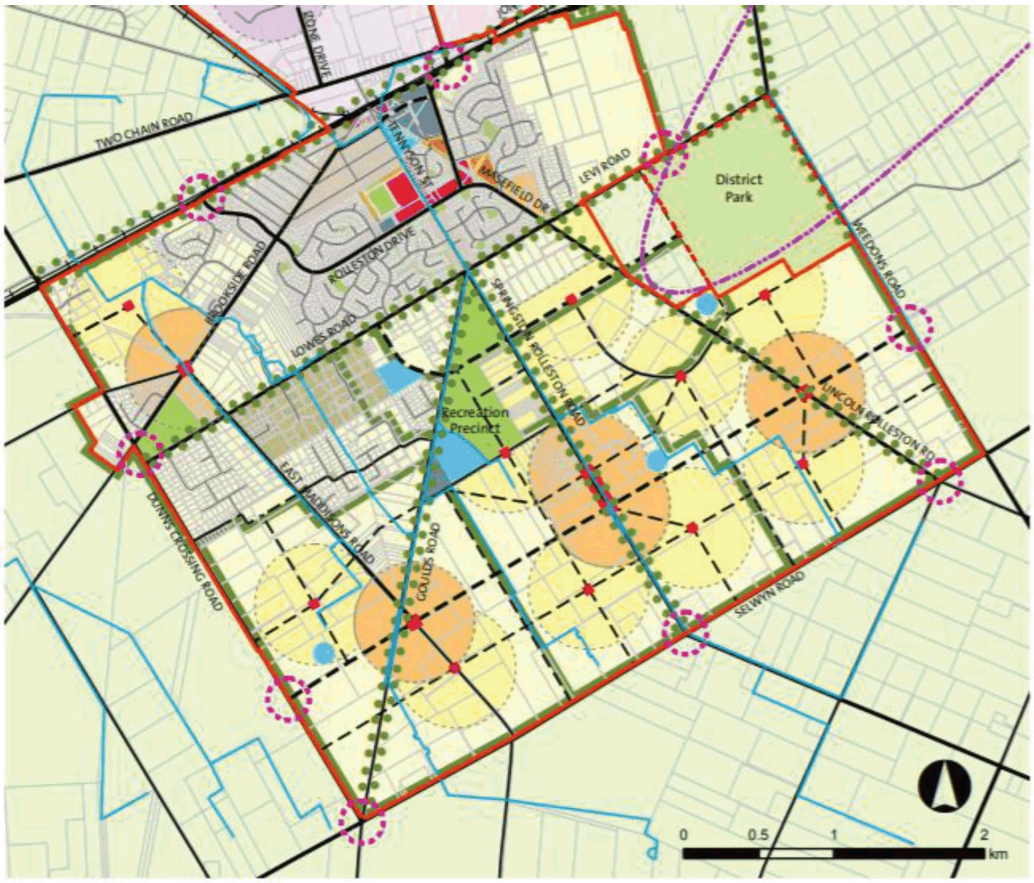


Figure 5.2: Rolleston Structure Plan

- Study Area
- Railway
- National Arterial
- Main (primary) roads
- Proposed main (primary) roads
- Local (secondary) roads
- Proposed local (secondary) roads
- Local (minor) roads
- Walking and Cycling Link
- Town Centre
- Neighbourhood Centre
- Local Centre
- Comprehensive Housing
- Medium Density Residential (20HH/Ha)
- Medium Density Residential (15HH/Ha)
- Low Density Residential (10HH/Ha)
- Low Density Residential (7HH/Ha)
- Community Facilities
- Education Facilities
- Green Corridors and Green Belt
- District Park
- Recreation Precinct and Reserves
- Rural land
- Avenue Planting
- Izone Southern Business Hub
- Water Races
- Noise Contour
- 5 Minute Walk (400m)
- Key Gateways

Resource consents RC165454, 165455, 165508 and 165509 were granted consent on 22 December 2016 under the Housing Accords and Special Housing Areas Act 2013 ("HASHAA") to subdivide the Geddes South Rolleston HASHAA, a 72.1973ha site, into 743 residential lots and construct up to 888 dwellings on those lots; develop a small neighbourhood centre and create associated open space areas. The proposed development is known as Chelsea Green (see approved subdivision plan

attached as **Appendix A**).

In considering the Chelsea Green site for inclusion under the HASHAA, Ellis Darussettes' land was excluded. Ellis Darusette was not approached by the Geddes family (then owners of the Chelsea Green SHA) or Selwyn District Council regarding possible inclusion of the Site within the SHA.

Development of the Chelsea Green subdivision is currently underway with Stages 10, 11 and 12 being the first phases of development, with the respective stages developing in a northward direction from Selwyn Road. The inclusion of 606 Selwyn Road will be compatible with the timing of the relevant stages. It is also sound planning practice to ensure that urban boundary extensions to accommodate new greenfield areas have logical, defendable boundaries.

The Submitter lodged a submission on the Selwyn District Plan Review seeking that:

- Selwyn District Council make a formal request and/or submission on the Greater Christchurch Settlement Review seeking that 606 Selwyn Road and the Rolleston Special Housing Areas be included in the GC Settlement Review and on Map A of the Canterbury Regional Policy Statement (Chapter 6) as a Priority Greenfield Area – Residential;
- That 606 Selwyn Road and the Rolleston Special Housing Areas be rezoned Living Z in the Selwyn District Plan Review.

Figure 16 - Greater Christchurch Settlement Pattern Update: 2018 – 2048

Figure 16 of the Greater Christchurch Settlement Pattern Update: 2018 – 2048 (GCSU) identifies the South Rolleston SHAs in the legend and on Fig 16 as 'Special Housing Areas'. SHAs are subject to streamlined legislation so are not subject to the CRPS objectives and policies for Greenfield Priority Areas. It appears from the scale of Fig 16 that 606 Selwyn Road is included with the SHA, whereas this is not the case. Fig 16 should be amended to correct this anomoly, by amending Fig 16 and the legend for 'Greenfield Priority Areas – Residential' to include the Site.

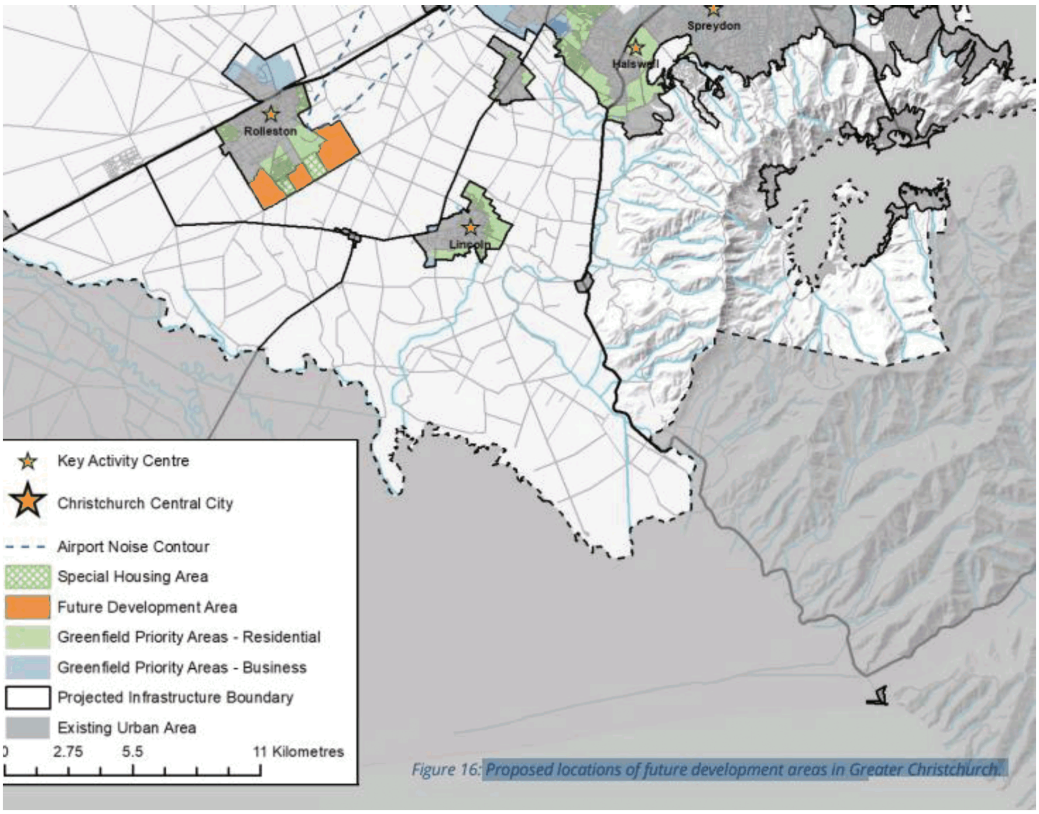


Figure 2 – Proposed locations of future development area in Greater Christchurch

Future Development Areas – Rolleston

Land within the Projected Infrastructure at South Rolleston is shown as Future Development Area. Table 3 of Our Space indicates that there is sufficiency of housing development capacity in Selwyn for the medium term (2018-2028). Schedule of Future Work No. 8 (page 34) is to prepare an amendment to the Canterbury Regional Policy Statement in 2019 that addresses any need for additional housing development capacity over the medium term. This means that because **Our Space** considers that the Selwyn Future Development Area will only required post 2028, it will not be identified as Greenfield Priority Area in the proposed 2019 change to the CRPS.

Our Space acknowledges that the housing capacity assessments which provide the basis for the housing targets are uncertain and the commercial feasibility testing and modelling in particular is problematic, with a wide range of results depending on the adopted assumptions and inputs. It notes that given the wide range of reported feasibility, capacity in both Selwyn and Waimakariri

may not be sufficient over the medium as well as the long term (page 13). The housing targets required under the National Policy Statement – Urban Development Capacity (NPS – UDC) are minimums not maximums. Given the high level of uncertainties, it is appropriate that additional Priority Greenfield areas are provided in both Selwyn as well as Waimakariri for the medium term. The 2019 CRPS change should provide for both.

Minor developments outside and minor changes to Rural/Urban Boundary

An unfortunate consequence of a fixed uncontestable rural/urban boundary line in the CRPS and an associated objective and policy framework which requires 'avoidance' of urban activities outside that line, is there is in effect, no flexibility to respond to minor anomalies, or small scale meritous boundary changes which are not of regional significance. Suggest policy wording is included in the Relief Sought below to address this issue.

Relief Sought:

Additions are shown in bold and underlined and deletions as strike through.

1. Amend Fig 16: Proposed locations of future development areas in Greater Christchurch by as follows:-
   - Amend legend for Greenfield Priority Areas – Residential to:-

     & 606 Selwyn Road, legally described as Pt RS 5192 - Greenfield Priority Areas – Residential
   - Change status of all or part of the Rolleston Future Development Areas to Greenfield Priority Areas – Residential, including 606 Selwyn Road, legal described as Pt RS 5192

2. 6.2 Schedule of future work

   Amend 8 (page 34) as follows:-

   Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement to:-

   - address any need for additional housing development capacity over the short and medium term including at Rolleston including by amending Map A to be consistent with the other relief sought in this submission (including 1. above and 3. below); and

- provide flexibility to accommodate meritous proposals for urban development and zoning and to facilitate a responsive planning approach by amending and adding to the objectives and policies as follows (insertions in bold and underlined):-

Add new Policy 6.3.1A as below:-

Policy 6.3.1 A

(a) Enable urban development or zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

(i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

(ii) Any additional land will integrate with the provision of infrastructure; and

(iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

(iv) The beneficial planning outcomes for the urban development or extension outweigh any disbenefits arising from increasing the land available for urban development; and

(v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritous proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land capacity assessments which have informed Map A, and the primary drivers and influencers of urban development in Greater Christchurch.

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 **or which has only minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.1 Development within the Greater Christchurch area

In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS **or which has minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.7 Residential location, yield and intensification

In relation to residential development opportunities in Greater Christchurch:

7. Subject to Policy 5.3.4, residential greenfield priority area development shall occur **generally** in accordance with Map A. These areas are sufficient for both growth and residential relocation through to 2028.

3. Specify in **Our Space** that Fig 16 be included in District Plans rather than the Canterbury Regional Policy, thus facilitating the ability for private plan requests for changes to the same, with appropriate criteria for assessment being included in the CRPS and/or District Plans; or as a less preferred alternative, other methods to retain flexibility and 'future proofing' to respond to meritous housing and business development proposals which give effect to the NPS-UDC but are not recognized or provided for in **Our Space** and supporting documents.

4. Consider other amendments to the CRPS and other documents and other actions which are appropriate to facilitate a responsive planning approach to urban growth management for Greater Christchurch.

5. Consider streamlined RMA or other streamlined processes to facilitate the amendments sought which are specific to the Submitters' land and potentially other meritous rural/urban boundary changes, and associated policy wording. Do not use streamlined processes for implementation of the overall **Our Space** strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

6. Such other consequential, additional or other amendments to Chapter 6 of the CRPS and other documents, and any other actions, to be consistent with and give effect to the intent

of this submission including amendment to the Selwyn District Plan to rezone the Site (606 Selwyn Road) and the South Rolleston Special Housing Areas Living Z.

Reasons for Relief Sought:-

1. For the reasons set out above under and under the responses to the Submission Form questions below.
2. The housing and business development capacity targets, urban form outcomes, and Schedule of Future Work measures (including change to the CRPS) contained in **Our Space** will have a profound and defining effect on the Greater Christchurch settlement pattern for the next 30 years. There will be significant flow on effects for the local, regional and potentially national economies. There is an acknowledged high level of uncertainty with the housing and business development capacity targets; and the adopted approach is aspirational and untested with its focus being redevelopment and intensification of existing urban areas, underpinned by an as yet unfunded *"vision for transformation of the transport network that fosters much greater pubic and active transport usage, and reduced reliance on the private vehicle".*[1] Despite all of this, there is no s32 assessment accompanying **Our Space**.
3. The amendments sought will enable the owners of 606 Selwyn Road to use the Site in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).
4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects 606 Selwyn Road, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non statutory matters.
5. The **Our Space** development capacity targets are uncertain and likely to be inaccurate and are based on a flawed methodology.
6. **Our Space** considers a responsive planning approach is necessary but does not facilitate this, including the recommended further work and implementation, whereas the relief sought in this submission will facilitate this.
7. **Our Space** as notified is contrary to and does not give effect to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular Policy PB1 which requires housing capacity supply to meet demand for different types, locations and price points.

[1] Open Space p 19

8. A fixed uncontestable urban/rural boundary line for Greater Christchurch as proposed by **Our Space** is unlikely to facilitate the urban form sought by **Our Space** including for the following reasons:-
    - Overly strict limitations on peripheral growth causes excessive land price inflation that in turn has a very negative effect on housing affordability;
    - A planning regulatory regime which provides for a contestable urban/rural boundary sends an important signal to the property market that it is best to get on with development rather than "land bank" (because there is excessive capital gain due to scarcity of land supply);
    - Containment and higher land values does not facilitate intensification;
    - If the Central City and the Key Activity Centres are attractive the market will locate there by people's choice. Generally carrots are better than sticks to achieve desired planning outcomes.
    - A contestable urban/rural boundary is not 'laissez-faire' and ad hoc and will not result in uncontained urban sprawl. The proposed amendments to Our Space and other planning documents require strategic planning including with respect to infrastructure, and an evidence base in support of any amendments to the boundary;
    - A policy of both "up and out" that ensures there are a range of development opportunities and housing choices is appropriate.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

Agree with identifying additional greenfield land at south Rolleston as shown on Fig 16. Some if not all of the Rolleston Future Development Area, including 606 Selwyn Road should be identified on Fig 16 and on Map of the CRPS as Greenfield Priority – Residential now, not after 2028. The exclusion of 606 Selwyn Road from the adjoining Special Housing Area is an anomaly which has created a small 'tooth like' intrusion of rural land into the otherwise logical SHA boundary. 606

should be identified as Greenfield Priority Area now, and/or other amendments to the relevant planning documents made to enable its development for urban residential purposes.

See also comments above.

Question 2:
Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.
Do you agree with this approach and why?

Response:
No comment.

Question 3:
Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.
What elements should be included in this action plan?

Response:
No comment.

Business Growth
Question 4:
Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.
Do you agree with this approach and why? What further measures would support such development?

Response:
No comment.

Question 5:
The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.
Do you agree or disagree this is sufficient and in the right location and why?

Response:
No comment.

Growth needs
Question 6:
The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.
Do you agree or disagree with this evidence base and why?

Response:
No – see comments above under 'Rolleston Future Development Areas'.

Transport and other infrastructure
Question 7:
Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and in intention to deliver rapid transit along the northern and south-west transport corridors.
Do you agree or disagree with this approach and why?

Response:
No response.

Question 8:

Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.
Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:
No response.

Other
What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

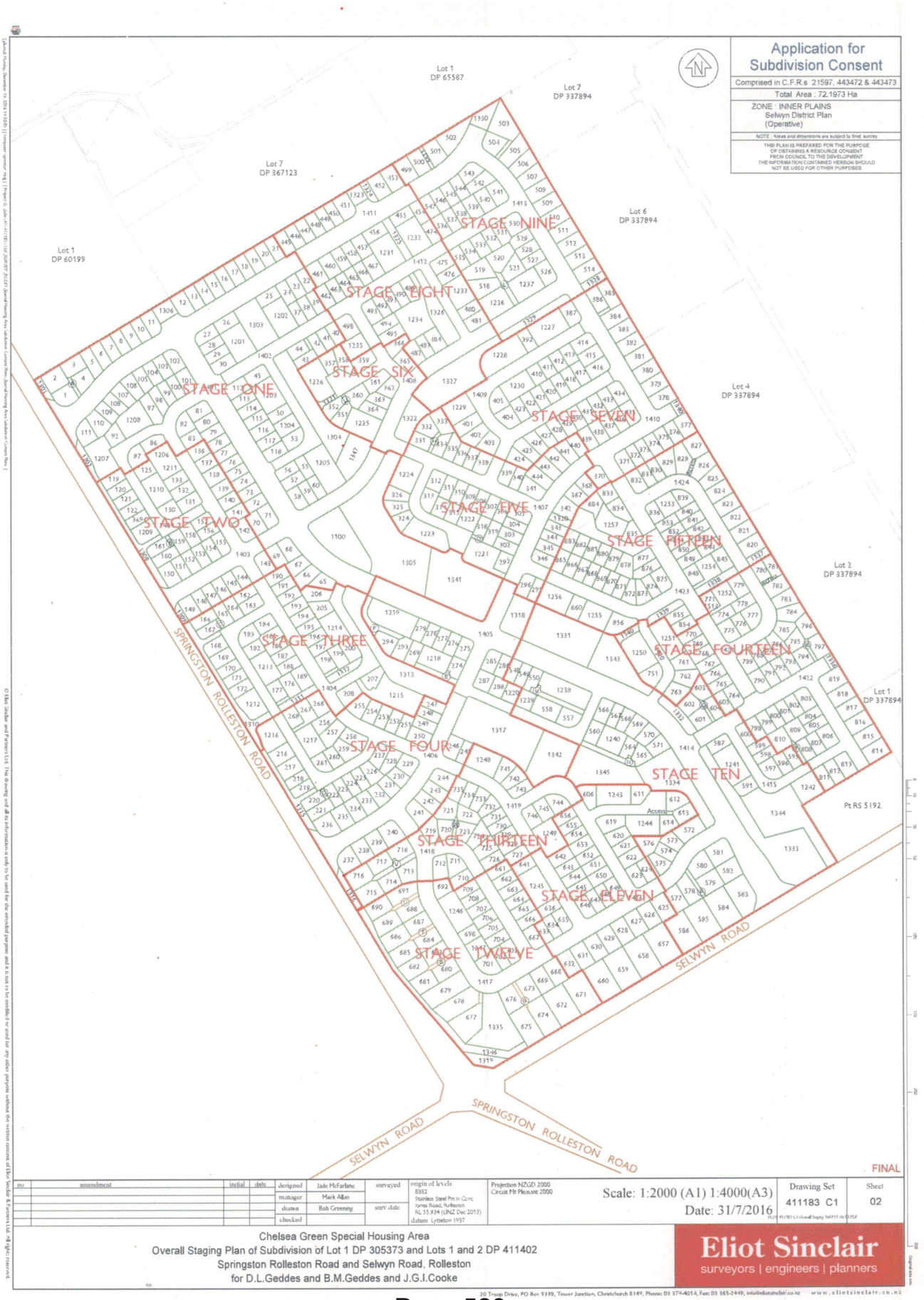
Response:
No further comments other than as noted above.

Appendices

Appendix A: Chelsea Green approved subdivision plan

Appendix A

Chelsea Green approved subdivision plan


Application for Subdivision Consent
Comprised in C.F.R.s 21597, 443472 & 443473
Total Area : 72.1973 Ha
ZONE : INNER PLAINS
Selwyn District Plan
(Operative)
NOTE : Areas and dimensions are subject to final survey
THIS PLAN IS PREPARED FOR THE PURPOSE OF OBTAINING A RESOURCE CONSENT FROM COUNCIL TO THE DEVELOPMENT THE INFORMATION CONTAINED HEREON SHOULD NOT BE USED FOR OTHER PURPOSES
Lot 1 DP 65587
Lot 7 DP 337894
Lot 7 DP 367123
Lot 6 DP 337894
Lot 1 DP 60199
Lot 4 DP 337894
Lot 2 DP 337894
Lot 1 DP 337894
Pt RS 5192
STAGE ONE
STAGE TWO
STAGE THREE
STAGE FOUR
STAGE FIVE
STAGE SIX
STAGE SEVEN
STAGE EIGHT
STAGE NINE
STAGE TEN
STAGE ELEVEN
STAGE TWELVE
STAGE THIRTEEN
STAGE FOURTEEN
STAGE FIFTEEN
SPRINGSTON ROLLESTON ROAD
SELWYN ROAD
SELWYN ROAD
SPRINGSTON ROLLESTON ROAD
Access
FINAL
designed Jade McFarlane
manager Mark Allan
drawn Bob Greening
checked
surveyed
surv.date
origin of levels
B882
Stainless Steel Pin in Conc
Jones Road, Rolleston
RL 55.934 (LINZ Dec 2012)
datum Lyttelton 1937
Projection NZGD 2000
Circuit Mt Pleasant 2000
Scale: 1:2000 (A1) 1:4000(A3)
Date: 31/7/2016
Drawing Set 411183 C1
Sheet 02
Chelsea Green Special Housing Area
Overall Staging Plan of Subdivision of Lot 1 DP 305373 and Lots 1 and 2 DP 411402
Springston Rolleston Road and Selwyn Road, Rolleston
for D.L.Geddes and B.M.Geddes and J.G.I.Cooke
Eliot Sinclair
surveyors | engineers | planners

Submission No: 060

aston CONSULTANTS
resource management & planning

Submission on Greater Christchurch Settlement Update – Our Space 2018-2048

GFR Rhodes Estate & Larson Group

November 2018

Greater Christchurch Partnership

Submitter Details

Name: GFR Rhodes Estate & Larson Group

Postal address: C/- Aston Consultants Ltd
Resource Management and Planning
PO Box 1435
Christchurch 8140
Email address: fiona@astonconsultants.co.nz
Phone Number: 03 3322618
Mobile Number: 0275 332213
Contact Person Fiona Aston

Hearings:

We wish speak at the hearings.
Preferred location: Selwyn District
Contact number: C/- Aston Consultants Ltd. Contact details as above.

Background:

GFR Rhodes Estate ('Rhodes') own approximately 22ha of land, legally described as Lot 2 DP 25129, Lot 2 DP 42643 and Lot 2 DP 4150512. The land is zoned Rural Inner Plains and is located between Hamptons and Blakes Road west of the current Prebbleton Living zone boundary. It is identified in the Selwyn District Rural Residential Strategy 2014 as Preferred Rural Residential Area 7. Rural residential development is required to be 'future proofed' to enable future intensification to urban densities because the site is "*within the "Preferred Urban Form" identified on Map 24 of Appendix 2 of this Strategy*" (see **Appendix A** i.e. it is within the future urban growth path for Prebbleton).

The Rhodes Estate has not proceeded with rural residential rezoning because their preference is urban subdivision, and they recognise that there is very little remaining undeveloped living zoned land at Prebbleton.

The Larson Group own land between the Rhodes land and the current Prebbleton urban boundary as shown on the location plan below (with a combined area of 34 ha). They did not seek rural residential status under the Selwyn Rural Residential Strategy because of their proximity to the

current urban boundary and their location within the 'Preferred Urban Form' area for Prebbleton.

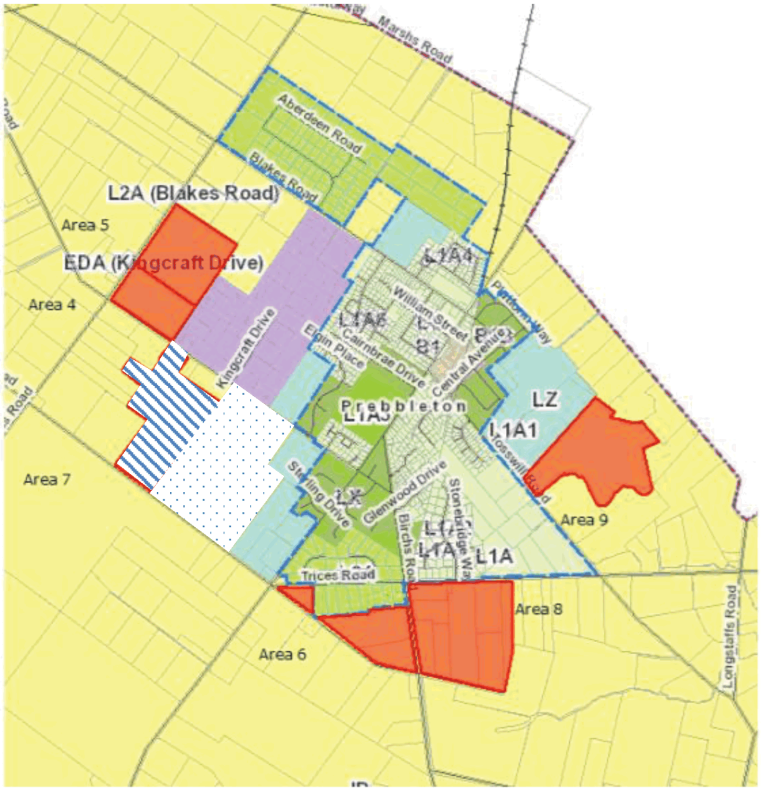


Fig 1: Location Plan

Rhodes Estate land - striped, Larson Group land - dots

The GFR Rhodes Estate and Larson Group are collaborating and working together on the rezoning issues affecting their respective lands. This includes submissions on the Selwyn Long Term Plan 2018-2028 and on the Selwyn District Plan Review 'Are we on track' consultation. They have sought advice from Urban Economics regarding housing affordability issues and housing land development capacity at Prebbleton (see **Appendix B**). They propose a form of living zoning for their land which will provide for a greater diversity of housing at Prebbleton, in particular smaller more affordable housing on smaller sites in the 300-500m^2 size range.

Under the current Prebbleton zoning there is virtually no provision for smaller medium density housing at Prebbleton. The average section size in the 'standard' Living Z zone is 700m^2 with a minimum lot size of 550m^2. There are no medium density areas, other than one small area shown in darker yellow on Outline Development Plan Area 4 (west Prebbleton) as below:-

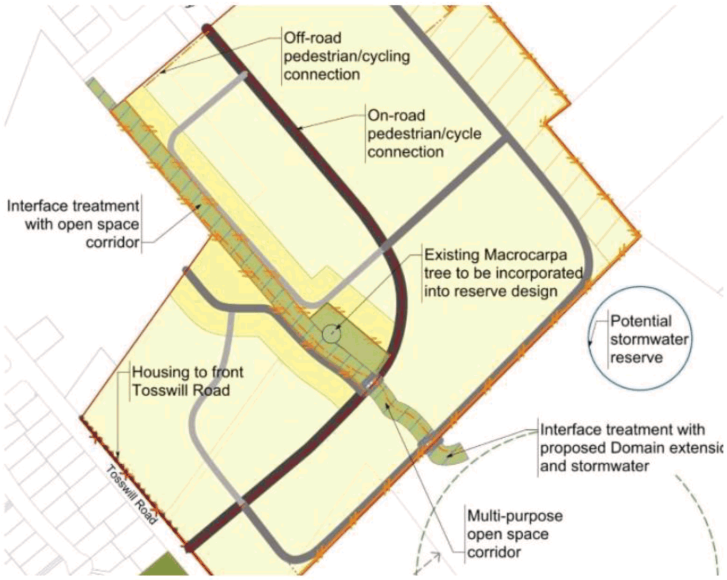


Fig 1: Prebbleton ODP Area 4

Residential intensification of existing zoned areas will not achieve the same affordable housing outcomes as a proposed greenfield development of the scale proposed by the Submitters. Intensification is not generally compatible with the amenity desired by existing property owners and only occurs in an organic and piecemeal fashion over an extended period, depending on the aspirations and timeframes of the multiple landowners. It is also constrained by the location of existing dwellings, and limited ability to retrofit additional services, roading, accesses etc. In contrast, larger greenfield (or brownfield) properties enable high quality masterplanned developments which tend to have a better design and pricing outcome.

Urban Economics Assessment

The key findings of the Urban Economics assessment are summarised below:-

Housing Affordability

- At present over 75% of dwellings at Prebbleton are priced at over $600 000, with the township currently largely catering for higher income households. Only 1% of dwellings are priced at below $400 000.
- The rezoning proposal will enable in the order of 750 dwellings, on lots ranging from 300-500m^2 in size. This relatively small lot size will enable lot prices of $160,000 - $190,000 and

dwelling prices of $350,000 - $380,000; and will increase the percentage of affordable dwellings priced under $400 000 to 20% at 2028.

- The availability of lower priced housing will have a wide range of social and economic benefits, most notably there will be more diversity in the housing stock, in terms of size and price, and this will enable more households to meet their housing needs. For example, an elderly household looking to downsize their house would have little opportunity to do this in Prebbleton.

Housing demand capacity

- The Prebbleton Structure Plan (2010) estimates demand for an additional 630 dwellings in Prebbleton over the next decade. This estimate is significantly lower than the recent construction trends, which indicate demand for an additional 1,500 dwellings in Prebbleton over the next decade.
- Prebbleton has commercially feasible development capacity that is practically available over the next decade, of around 10 additional infill dwellings and 90 greenfield dwellings (100 in total). Given recent demand of 150-200 new dwellings per annum, this indicated supply will be fully exhausted in less than a year. This will equally apply if demand is a more conservative 100 dwellings per annum.

Feasible opportunities for new residential development

- Prebbleton has a large number of small lifestyle blocks on its periphery. These have a higher value than large rural blocks and are more difficult to develop due to price and site aggregation.
- Prebbleton has only two feasible opportunities remaining for new residential development on its periphery, one being the Rhodes/Larson Group property.

Suitability of Land for Development

The Rhodes and Larson properties adjoin and can be readily serviced from existing neighbouring Living Z land. Reticulated services extend along Trents Road to existing Living 3 (rural residential) development at the Shands/Trents Road intersection and have capacity for urban development of the intervening land.

The Rhodes and Larson properties are combined a substantial area of land and enable a large scale, master planned development with flexibility in the positioning of roading and services, and the ability to achieve connectivity between Trents and Hamptons Road, and with the existing urban area.

There are no natural hazard issues which would preclude rezoning. The Site is not subject to liquefaction or other natural hazard risks such as flooding or ponding.

Relief Sought:

Additions are shown in bold and underlined and deletions as strike through.

1. Amend **Our Space** Fig 16: Proposed locations of future development areas in Greater Christchurch as follows:-
   Include the GFR Rhodes Estate and Larson Group land as a Greenfield Priority Area – Residential on Fig 16.

2. 6.2 Schedule of future work
   Amend 8 (page 34) as follows:-
   Prepare a proposed change to Chapter 6 (Recovery and Rebuilding of Greater Christchurch) of the Canterbury Regional Policy Statement to:-
   - address the need for additional housing development capacity over the short and medium term including at Prebbleton including by amending Map A to be consistent with the relief sought in this submission (including 1. above and 3. below); and
   - provide flexibility to accommodate meritous proposals for urban development and zoning and to facilitate a responsive planning approach by amending and adding to the objectives and policies as follows (insertions in bold and underlined):-

   Add new Policy 6.3.1A as below:-

   Policy 6.3.1 A

   (a) Enable urban development or zoning outside the Greenfield Priority, Special Housing Areas and Existing Urban Areas shown on Map A provided the following conditions are met:-

   (i) Any additional land is contiguous with a Greenfield Priority Area, Special Housing area, or Existing Urban Area; and

   (ii) Any additional land will integrate with the provision of infrastructure; and

   (iii) Any additional land is a logical addition to the urban area and will contribute to a consolidated urban form; and

(iv) The beneficial planning outcomes for the urban development or extension outweigh any costs arising from increasing the land available for urban development; and

(v) All of the criteria in Policy 6.3.11 (5)(a) to (g) inclusive are met.

Explanation:

This policy confirms the requirement for urban development to be contained within Greenfield Priority, Special Housing and Existing Urban Areas but provides some flexibility to accommodate meritous proposals and to facilitate a responsive planning approach given the uncertainties associated with the housing and business land capacity assessments which have informed Map A, and with the primary drivers and influencers of urban development in Greater Christchurch.

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 **or which has only minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.1 Development within the Greater Christchurch area

In relation to recovery and rebuilding for Greater Christchurch:

4. ensure new urban activities only occur within existing urban areas or identified greenfield priority areas as shown on Map A, unless they are otherwise expressly provided for in the CRPS **or which has minor or less than minor adverse effects that will not compromise the overall CRPS urban growth management approach**;

6.3.7 Residential location, yield and intensification

In relation to residential development opportunities in Greater Christchurch:

7. Subject to Policy 5.3.4, residential greenfield priority area development shall occur **generally** in accordance with Map A. These areas are sufficient for both growth and

residential relocation through to 2028.

3. Specify in **Our Space** that Fig 16 be included in District Plans rather than the Canterbury Regional Policy, thus facilitating the ability for private plan requests for changes to the same, with appropriate criteria for assessment being included in the CRPS and/or District Plans; or as a less preferred alternative, other methods to retain flexibility and 'future proofing' to respond to meritous housing and business development proposals which give effect to the NPS-UDC but are not recognized or provided for in **Our Space** and supporting documents.

4. Amend the **Our Space** Targets for housing development capacity assessment (Table 2) and related commentary (including Sufficiency) to recognise the need to provide for further greenfield residential areas at Prebbleton, sufficient to accommodate an additional 1500 housholds by 2028 (as assessed in the Urban Economics Assessment attached as **Appendix C**) with needs post 2028 to be further assessed and included in **Our Space**.

5. Consider other amendments to the CRPS and other documents and other actions which are appropriate to facilitate a responsive planning approach to management of urban growth of Greater Christchurch.

6. Consider streamlined RMA or other processes to facilitate the amendments sought which are specific to the Submitters' land and which provide flexibility to provide for meritous zoning and urban development, including associated policy wording. Do not use streamlined processes for implementation of the overall **Our Space** strategy and approach which has very significant implications and needs to be subject to rigorous RMA based evidential testing.

Reasons for Relief Sought:-

1. For the reasons set out above and under the responses to the Submission Form questions below.
2. The housing and business development capacity targets, urban form outcomes, and Schedule of Future Work measures (including change to the CRPS) contained in **Our Space** will have a profound and defining effect on the Greater Christchurch settlement

pattern for the next 30 years. There will be significant flow on effects for the local, regional and potentially national economies. There is an acknowledged high level of uncertainty with the housing and business development capacity targets; and the adopted approach is aspirational and untested with its focus being redevelopment and intensification of existing urban areas, underpinned by an as yet unfunded *"vision for transformation of the transport network that fosters much greater pubic and active transport usage, and reduced reliance on the private vehicle".*[1] Despite all this, there is no s32 assessment accompanying **Our Space.**

3. The amendments sought will enable the GFR Estate and Larson Group land to be used in the most appropriate, effective and efficient way which will achieve the purpose of the Resource Management Act 1991 (the Act).
4. **Our Space** as notified proposes an urban growth management approach, in particular as it affects Prebbleton township and the GFR Rhodes Estate and Larson Group land, which is inconsistent with and does not give effect to the Act, including Part 2 and Section 32, and other relevant statutory and non-statutory matters.
5. The **Our Space** housing development capacity targets are uncertain, inaccurate and based on a flawed methodology.
6. Provision for further urban growth at Prebbleton (and potentially other townships) in the short, medium and long term is essential to enable the town to respond to the projected shift over time towards smaller households, as the population 'ages', and to meet the need for more affordable housing.
7. Infill and redevelopment is organic and generally occurs very gradually and in a piecemeal way over time. It cannot be relied upon 'on its own' to deliver the anticipated increased need over time for smaller and more affordable housing. Larger properties enable high quality masterplanned developments which tend to have a better design and housing price outcome.
8. **Our Space** considers a responsive planning approach to future proof the management of the Greater Christchurch urban growth but does not facilitate or enable this, whereas the relief sought is this submission does.
9. **Our Space** as notified is contrary to and does not give effect to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular Policy PB1 which

[1] Open Space p 19

requires housing capacity supply to meet demand for different types, locations and price points.

10. A fixed uncontestable urban/rural boundary line for Greater Christchurch as proposed by **Our Space** is unlikely to facilitate the urban form sought by **Our Space** including for the following reasons:-
    - Overly strict limitations on peripheral growth causes excessive land price inflation that in turn has a very negative effect on housing affordability;
    - A planning regulatory regime which provides for a contestable urban/rural boundary sends an important signal to the property market that it is best to get on with development rather than "land bank" (because there is excessive capital gain due to scarcity of land supply);
    - Containment and higher land values does not facilitate intensification;
    - If the Central City and the Key Activity Centres are attractive the market will locate there by people's choice. Generally carrots are better than sticks to achieve desired planning outcomes.
    - A contestable urban/rural boundary is not 'laissez-faire' and ad hoc and will not result in uncontained urban sprawl. The proposed amendments to **Our Space** and other planning documents require strategic planning including with respect to infrastructure, and an evidence base in support of any amendments to the boundary;
    - A policy of both "up and out" that ensures there are a range of development opportunities and housing choices is appropriate.

Housing Growth:

Question 1:

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree with this approach and why?

Response:

Our Space has a 30 year time horizon. It makes no provision for further greenfields development in Selwyn District, other than at Rolleston. Its housing capacity assessment treats Selwyn District settlements combined as a single housing market. This approach is flawed, not supported and is

contrary to the National Policy Statement – Urban Development Capacity (NPS – UDC) in particular Policy PB1 which requires housing capacity supply to meet demand for different types, locations and price points. Each township has a different character, housing market and demand and 'need' profile.

Prebbleton is identified as a Service Centre in Selwyn 2031. Service centres are defined as centres in the 1500-6000 population size range with *a "Function … based on providing a high amenity residential environment and primary services to Rural Townships and surrounding rural area".* The current population (2018) for Prebbleton is 3918[2]. There is clearly scope for significant further growth at Prebbleton in terms of its intended function. For a service centre, Prebbleton is well served with local facilities and services, including a local supermarket currently at the consenting stage.

Open Space proposes to consolidate urban development in and around the larger towns in Selwyn and Waimakariri and also respond to the anticipated strong demand for high density housing in the City. Despite this approach, no provision whatsoever is made for further growth beyond the existing greenfield areas at Prebbleton. Whilst smaller than Rolleston and Lincoln, Prebbleton is a significant township, closer to the Christchurch City than either Rolleston or Lincoln and extremely well connected, both via the Southern Motorway extension and a cycleway link into the City. No provision for further growth at Prebbleton is contrary to the **Our Space** 'consolidation' approach.

Urban Economics has undertaken an analysis of the Prebbleton market and the GFR Rhodes Estate and Larson Group greenfield proposal (see **Appendix B**). The housing market at Prebbleton is currently 'skewed' towards the 'middle and upper' end, with over three quarters of current houses being valued at over $600 000. Only 1% of dwellings are priced at $400,000 or less. Under the currently District Plan zoning provisions, only 7% of dwellings would be priced at $400,000 or less, as at 2028. By contrast, under the proposal for greenfield development of the Rhodes and Larson Group land, there is potential for a significant 20% of dwellings to be priced at $400,000 or less, as at 2028.

[2] Taken from SDC August LTP and AMP Assumptions Report 2018-28

The availability of lower priced and smaller housing would have a wide range of social and economic benefits, most notably there would be more diversity in the housing stock, in terms of size and price, and this would enable more households to meet their housing needs.

Urban Economics has assessed the current housing land supply at Prebbleton, including greenfield and infill capacity. There is less than one year's remaining supply, which is clearly not adequate to meet the ongoing housing needs of the Prebbleton or Greater Christchurch community.

There is clearly a strong unmet demand and need for further greenfield development at Prebbleton. The Urban Economic Assessment notes that there are very few locations at the urban boundary suitable for further development, taking into account current land values and the existence of small lifestyle blocks around the edge of much of Prebbleton. The Rhodes and Larson Group land are in the ideal location and are identified in existing Council documents (Rural Residential Strategy) as the preferred urban growth direction for Prebbleton.

Open Space acknowledges that its housing capacity work is uncertain, in particular assessment of the commercial feasibility of development, and that work is required to improve the modelling tools used. It recognizes that given the range of reported feasibility, capacity may not be sufficient to meet demand over the medium term in Waimakariri and Selwyn.[3] Notwithstanding no provision is made for further capacity in the medium capacity anywhere in Selwyn, and only at Rolleston in the long term. **Our Space** also recognizes that a responsive planning approach is required given the many uncertainties associated with the primary drivers and influencers of urban development in Greater Christchurch.

All of the above points to the obvious need for a more flexible planning framework than the rigid approach of **Our Space** which proposes to retain a fixed and uncontestable urban/rural boundary. Monitoring as set out in Our Space 6.4 is not the answer – there is no opportunity for public input into the quarterly monitoring reports, further investigation and research topics and no mechanism for the development of policy responses arising from such monitoring and research. What is required is a more flexible and responsive planning framework which enables stakeholders and

[3] Our Space page 13

those involved in delivery of housing and business developments to respond to market needs. It is also not realistic to expect parties to continually be involved in statutory and non-statutory planning processes at considerable cost, in many cases with a high level of uncertainty of outcome, and in the case of LGA or other streamlined processes, no appeal rights in relation to Council decisions.

We suggest as a way forward that, as is the case with the Auckland Unitary Plan, the urban/rural boundary on **Our Space** Fig 16 and Canterbury Regional Policy Statement (CRPS) Map A (in the Canterbury context defined by the outer edges of Greenfield Priority Areas, Special Housing Areas, Future Development Areas, and the Existing Urban Areas) be included in the District Plans rather than the CRPS but with appropriate criteria for changes e.g. based on the CRPS Policy 6.3.7 Rural Residential criteria, be included in the CRPS and/or District Plans. This will provide much needed flexibility for the market to respond to market needs - in the face of the recognized uncertain land capacity assessments which underpin the notified **Our Space;** and the acknowledged need for responsive planning to respond to the primary drivers and influencers of urban development which are in a state of change[4].

Question 2:
Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.
Do you agree with this approach and why?

Response:
Our Space does not actually adopt this approach in practice. It makes no provision for further zoning at Prebbleton (and potentially other locations) which will facilitate the delivery of a greater diversity of housing stock, including smaller and more affordable housing.

Question 3:

[4] See Our Space 6.1 Responsive Planning

Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers the different models to make it easier for people to buy their own home.
What elements should be included in this action plan?

Response:
No comment.

Business Growth
Question 4:
Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their flexibility and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.
Do you agree with this approach and why? What further measures would support such development?

Response:
No comment.

Question 5:
The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified suitable capacity for new industrial businesses.
Do you agree or disagree this is sufficient and in the right location and why?

Response:
No comment.

Growth needs
Question 6:
The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from

Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.
Do you agree or disagree with this evidence base and why?

Response:
No – see comments above under Question 1.

Transport and other infrastructure
Question 7:
Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors.
Do you agree or disagree with this approach and why?

Response:
Greater densities should not be limited to the areas around key centres. Mixed density neighbourhoods are beneficial and provide a diversity of housing choices and a cohesive community which enables residents to stay near family and friends as they age and wish to 'downsize'.

Question 8:
Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.
Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

Response:
No response.

Other

What other points do you wish to make to inform the final **Our Space 2018-2048 Greater Christchurch Settlement Update?**

Response:

No further comments other than as noted above.

Appendices

Appendix A: Prebbleton Preferred Urban Form

Appendix B: Urban Economics Assessment

SELWYN DISTRICT COUNCIL: RURAL RESIDENTIAL STRATEGY, Adopted June 2014

APPENDIX 2: STUDY AREA MAPS

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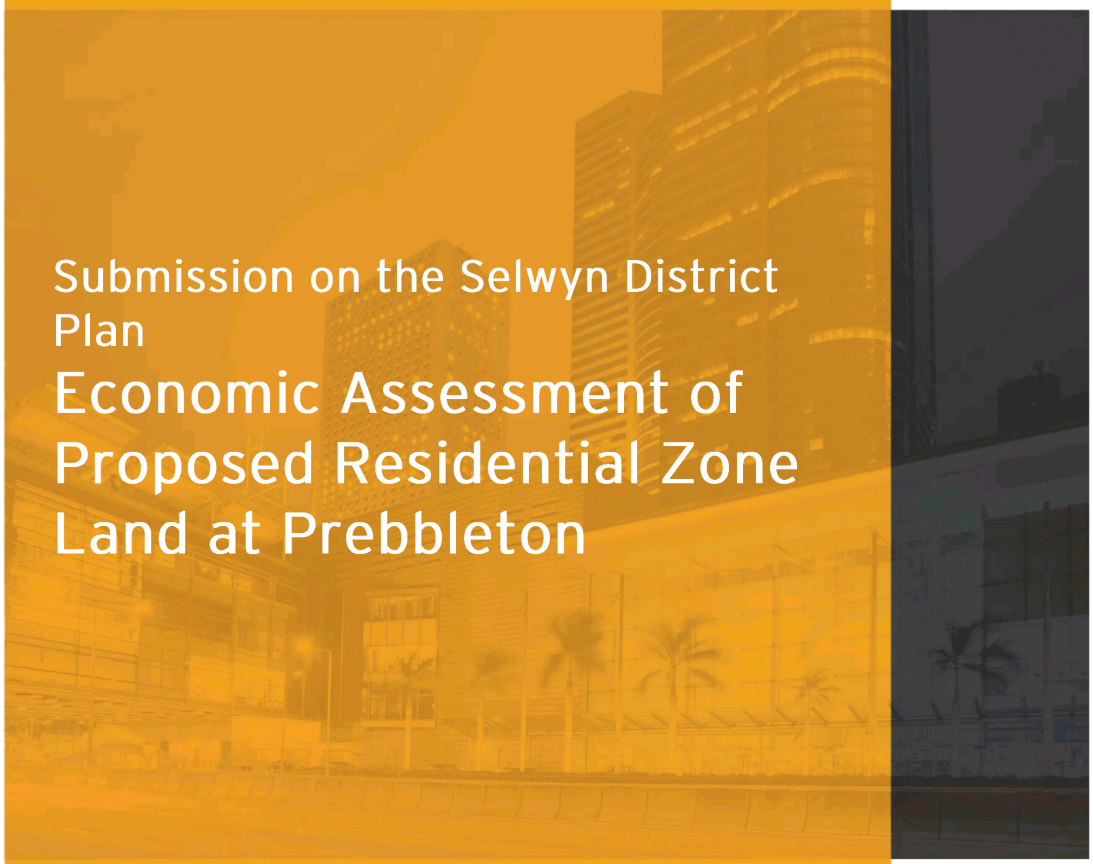
URBAN ECONOMICS

27 November 2018
AUTHOR ADAM THOMPSON
51234.5.05



Submission on the Selwyn District Plan
Economic Assessment of Proposed Residential Zone Land at Prebbleton

PREPARED FOR
Rhodes and Larson

ABOUT US

OUR AREAS OF EXPERTISE

Economic Analysis

Our work aims to bridge the gap between land-use planning and urban economics. Our focus is on the interaction between land markets, land-use regulations, and urban development. We have developed a range of methodologies using a quantitative approach to analyse urban spatial structure and audit land-use regulations.

Property Research

We provide property and retail market research to assist with planning and marketing of new projects. This includes identification of new sites and market areas, assessments of market potential and positioning, and the evaluation of market-feasibility of specific projects.

Development Advisory

We provide development planning and costing advisory services to support small and large-scale developments.

P: 09 963 8776

5b Crummer Road, Ponsonby, Auckland

adam@ue.co.nz

www.ue.co.nz

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1. Key Points

This report provides a preliminary economic assessment of a residential zoning for a group of parcels of land in Prebbleton, referred to as the Rhodes & Larson Group blocks (the "proposal").

The main points to note are:

- This proposal would enable in the order of 750 dwellings, on lots ranging from 300-500m^2 in size.
- This relatively small lot size would enable lot prices of $160,000 - $220,000 and dwelling prices of $320,000 - $440,000.
- At present only 1% of dwellings are priced below $400,000 and only 25% of dwellings are priced below $600,000 in Prebbleton.
- The Prebbleton Structure Plan (2010) estimates demand for an additional 630 dwellings in Prebbleton over the next decade. This estimate is significantly lower than the recent construction trends, which indicate demand for an additional 1,500 dwellings in Prebbleton over the next decade.
- Prebbleton has a large number of small lifestyle blocks on its periphery. These have a higher value than large rural blocks and are more difficult to develop due to price and site aggregation.
- Prebbleton has only two feasible opportunities remaining for new residential development on its periphery, one being the Rhodes and Larson property. It should also be noted that larger properties enable high quality masterplanned developments which tend to have a better design and housing price outcome.
- Prebbleton has commercially feasible capacity, that is practically available over the next decade, of around 10 additional infill dwellings and 90 greenfield dwellings (100 in total). Only 40 of these would be priced below $400,000.
- Given recent demand of 150-200 new dwellings per annum, this indicated supply (of commercially feasible capacity that is practically available over the next decade) will be fully exhausted in less than a year. This is likely to raise significant questions regarding the future efficiency of the Prebbleton housing market.
- In Prebbleton only 1% of dwellings are priced at $400,000 or less. Under the current District Plan provisions, only 7% of dwellings would be priced at $400,000 or less, as at 2028. By contrast, under the proposal, there is potential for a significant 20% of dwellings being priced at $400,000 or less, as at 2028.
- The availability of lower priced housing would have a wide range of social and economic benefits, most notably there would be more diversity in the housing stock, in terms of size

and price, and this would enable more households to meet their housing needs.

- It is worth noting that Lincoln and Rolleston have a higher proportion of housing available in the $400,000 - $600,000 price range, which is more affordable, and also has a notable percentage of housing available in the $400,000 or less price ranges (in the order of 10-15%). The proposal would bring Prebbleton more in line with the housing available in these other two townships. This would have important social and economic benefits, for example an elderly household looking to downsize their house would have little opportunity to do this in Prebbleton.

In respect of the adverse and positive economic effects, the proposal is recommended for approval.

2. The Proposal

This report is in support of a submission on 'Our Space 2018-2048; Greater Christchurch Settlement Update' ('GCSU') seeking Greenfield Priority Area – Residential status for the Rhodes and Larson Group properties at West Prebbleton. There are currently no Greenfield Priority Areas at Prebbleton.

The proposal is to apply the equivalent of the Lincoln Living Z zone to the Rhodes and Larson properties but with greater provision for medium density housing. The LZ zone at Lincoln requires a minimum average lot size of 600m^2, other than in medium density housing areas identified on an Outline Development Plan. For these areas, Medium Density (Comprehensive) development requires a maximum lot size of 350m^2, and Medium Density (Small Lot) development, a minimum lot size of 400m^2 and maximum average of 500m^2.

We understand that the Selwyn District Plan is under review so the current zonings may change. We understand that a Medium Density Residential Zone is proposed around Key Activity Centres and Neighbourhood Centres in various townships, but not at Prebbleton. The majority of residential areas will be zoned General Residential Zone which enables low density suburban residential development.

We propose a Living Z zone which makes greater provision for medium density housing which is 'midway' between comprehensive and small lot medium density i.e. average lot size of 350m^2, with a minimum or 300m^2 and a maximum of 400m^2. Houses in this size range can be 'stand alone' or duplex and single storey. These lot sizes would enable the construction of dwellings in the $350,000 - $400,000 price range, making it attractive to first home buyers, households on low to middle incomes, and empty nesters and retirees that would like to trade down to a smaller more affordable dwelling. By comparison, the majority of dwellings in Prebbleton are priced in the $500,000 - $800,000 price range and cater to wealthier households and households on a higher income.

We suggest an appropriate mix could range between 300m^2 and 500m^2, with the following indicative composition:

300m² lots: 1/3 (250 lots)

400m² lots: 1/3 (250 lots)

500m² lots: 1/3 (250 lots)

3. Existing Land Uses

Prebbleton and its immediate 1-2km rural surrounds is comprised of:

- 30 rural properties comprising 550 hectares (25%)
- 450 lifestyle block properties comprising 1,350 hectares (65%)
- 1500 residential properties comprising 150 hectares (10%)

The main points to note are:

- Prebbleton is therefore dominated by lifestyle blocks, which account for two thirds of all land use.
- There are very few remaining rural properties, in the order of 30.
- The residential area accounts for 150 hectares.

4. Housing Market Profile

Figure 1 shows the residential lot size and price. This has been determined with a regression analysis that achieved an R^2 of 0.45 indicating a strong correlation between lot size and price.

Figure 1 shows the prices of the existing dwellings in Prebbleton. This is illustrated in Figure 2. The main points to note are:

1. Only 1% of dwellings are priced below $400,000.
2. Only 25% of dwellings are priced below $600,000.
3. The majority, three quarters, of dwellings are priced at $600,000 or more.

Figure 1: Prebbleton Residential Lot Size and Price

Price Ranges	Count	Percentage
Under 200k	7	0%
200k-400k	21	1%
400k-600k	467	24%
600k-800k	824	42%
800k-1m	326	17%
1m+	324	16%
Total	**1969**	**100%**

Source: Corelogic, Urban Economics

Figure 2 shows the distribution of dwellings by price. This shows an even distribution of prices across the town, i.e. that there are not notable 'prime' and 'less attractive' localities within the town.

Figure 2: Prebbleton Dwelling Price Map



Source: Selwyn Council, Urban Economics

5. Urban and Rural Lifestyle Housing Demand at Prebbleton

The Prebbleton Structure Plan (dated February 2010 i.e. pre-earthquake) estimates that 630 additional households will reside in Prebbleton over the next decade. This indicates an underlying demand for around 60 new dwellings each year.

Over the past decade Prebbleton has seen strong growth, with around 100 dwellings built annually based on Building Consent data. Over the past five years this has increased markedly to 150-200 dwellings per annum. This indicates that the demand for housing is approximately 2-3 times that estimated in the Prebbleton Structure Plan, of only 60 dwellings per annum.

Based on the recent construction trends, there is estimated demand for an additional 1,500 dwellings at Prebbleton over the next decade.

Figure 3: Prebbleton Residential Building Consents 2008-2018

Year	Number of Dwellings
2008	60
2009	70
2010	40
2011	20
2012	80
2013	180
2014	130
2015	140
2016	180
2017	110
Total	**1,010**

Source: Statistics NZ

6. Prebbleton Development Opportunities & Constraints

Figure 4 shows the land value, on per sqm basis, for all properties in Prebbleton. This is calculated as the total land value divided by the property area in sqms. This is a useful tool for evaluating the redevelopment potential of land, as higher land values are a constraint on development, as they increase the cost for a developer, and often mean that a new development is not commercially feasible.

The main points to note are:

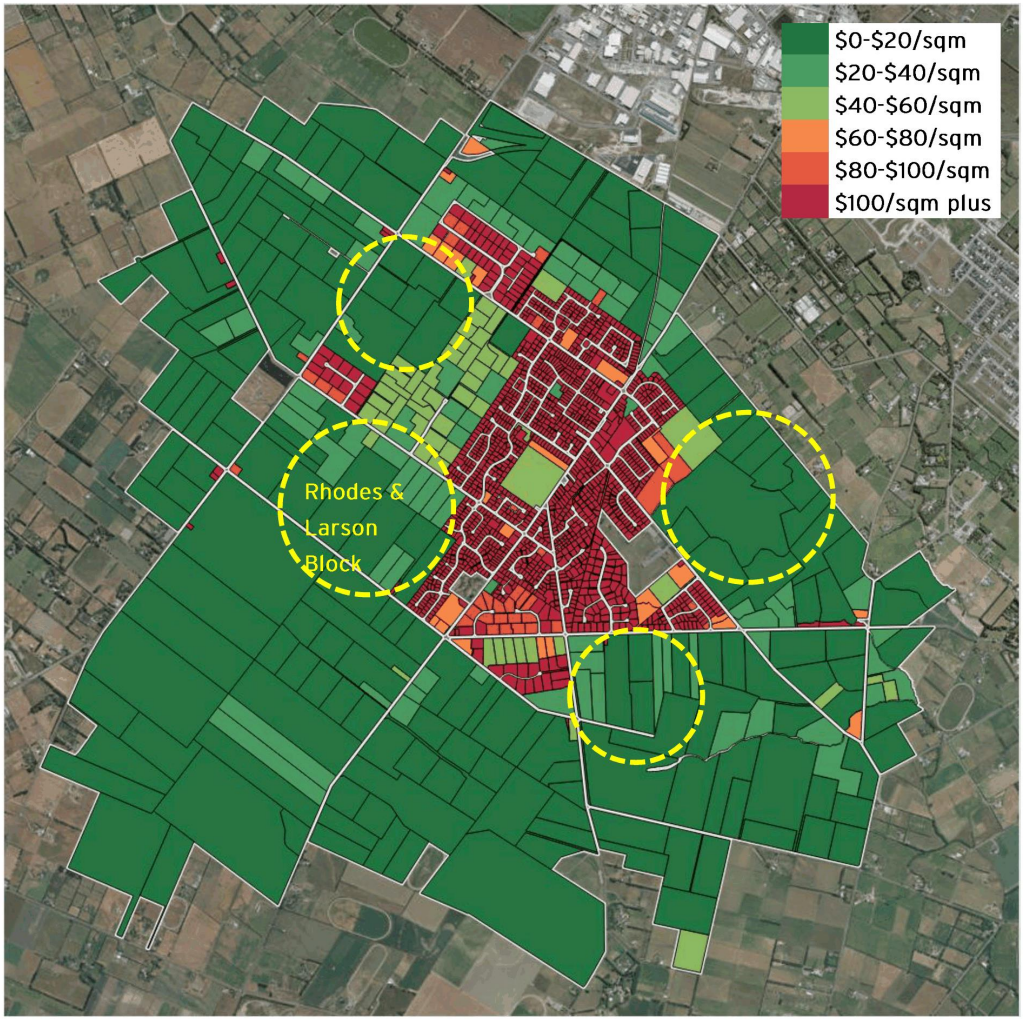
- There are a significant number of lifestyle blocks that surround the main urban area. These

lifestyle blocks[1] generally have a value of $50+ per sqm.

- There are only a small number of locations adjacent to the main urban area that have land values, of less than $50 per sqm, that would enable new urban developments. These are identified in yellow.

It is evident that Prebbleton has very little remaining opportunity for new residential growth that is commercially feasible.

Figure 4: Land Value per Sqm



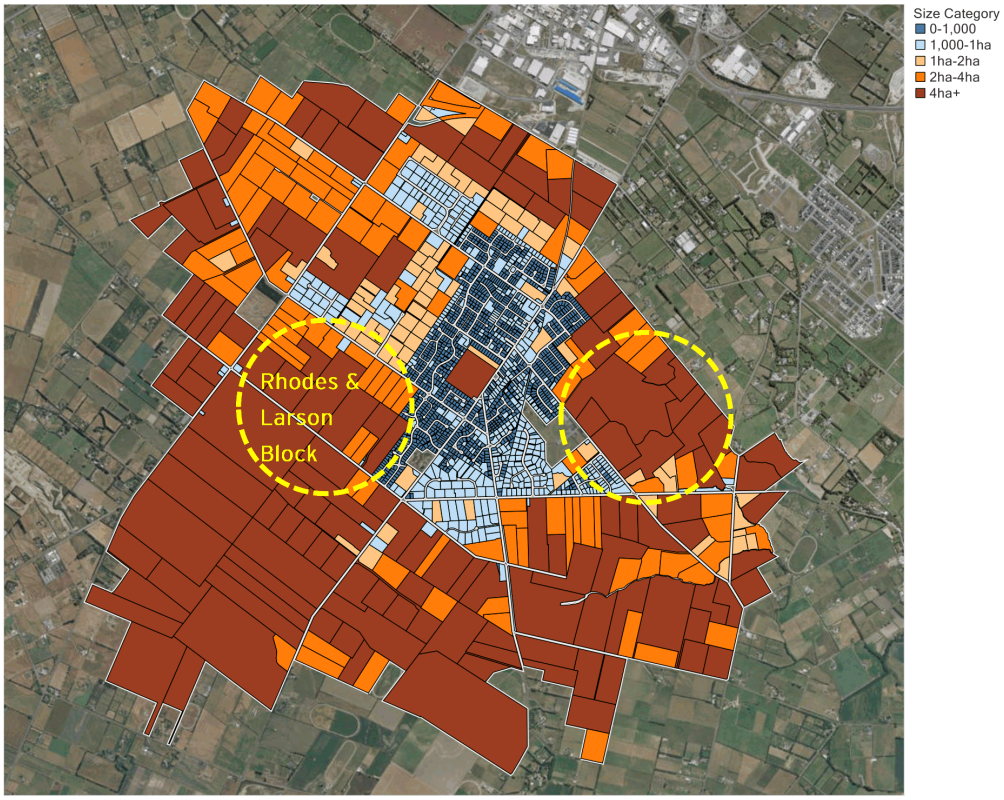
Source: Selwyn District Council, Corelogic, Urban Economics

[1] Properties of 1-10 hectares.

Figure 5 shows the land area of each parcel in Prebbleton. The main points to note here are:

- A large part of the Prebbleton Urban area is bordered by Lifestyle Blocks of 1-2 hectares. This provides a de facto greenbelt for much of the town, as it is practically and commercially difficult to develop these properties into smaller residential properties (unless these blocks have been 'future proofed' on a comprehensive basis for future potential urban development).
- **The areas identified in yellow show that there are only two feasible expansion locations for the town that do not require development to leapfrog an area of lifestyle blocks[2].** These are the most efficient locations for new development as they integrate directly with the existing urban area. The Rhodes & Larson site is one of these locations and based on this preliminary analysis, is one of the two optimal locations for new housing in Prebbleton.

Figure 5: Land Area (Per Property)



[2] There may be opportunities for parcels to be aggregated which may result in a feasible development, however this can often be difficult if land owners are not willing to sell.

Source: Corelogic, Urban Economics

7. Commercially Feasible Infill Capacity

Figure 6 shows the estimated 'plan enabled' and 'commercially feasible' lots and dwellings by lot size and price for Prebbleton. The results are illustrated in Figure 7. The key points to note are:

1. In total, there is potential for 14 commercially feasible infill[3] dwellings in Prebbleton. As some of these properties would not be available for development, as the owners would not sell these properties over the next decade, this would imply that **there is practical potential for around 10 additional infill dwellings over the next decade.**
2. There are a range of lot sizes that are possible under the District Plan, ranging, in broad terms, from 400m^2 to 8,000m^2.
3. These lots would be priced between $190,000 and $590,000.
4. The dwellings that are likely to be built on these lots would result in a property value of $380,000 to $1.18 million. All of the potential infill dwellings however, would be priced between $500,000 to $600,000.

Figure 6: Plan Enabled & Commercially Feasible Infill Lots by Lot Price

Lot Size	Lot Price	Dwelling Price	Feasible Dwellings	Feasible Dwellings %
400	$190,000	$380,000	9	64%
700	$270,000	$540,000	5	36%
800	$290,000	$580,000	0	0%
5000	$530,000	$1,060,000	0	0%
8000	$590,000	$1,180,000	0	0%
Total			**14**	**100%**

Source: Corelogic, Urban Economics

[3] Infill development is development that occurs on lots of 5,000m^2 of less, and greenfield development is development that occurs on lots of 5,000m^2 or greater.

Figure 7: Commercially Feasible Infill Lots by Lot Price



Source: Corelogic Database, Urban Economics

8. Greenfield Land Capacity

Figure 8 shows the estimated greenfield potential dwellings, by lot size and price for Prebbleton. The results are illustrated in Figure 9. The key points to note are:

1. In total, there is potential for 182 greenfield dwellings in Prebbleton. As some of these properties would not be available for development, as the owners would not sell these properties over the next decade, this would imply that **there is practical potential for around 90 additional greenfield dwellings over the next decade.**
2. There are a range of lot sizes that are possible under the District Plan, ranging, in broad terms, from 400m^2 to 8,000m^2.
3. These lots would be priced between $190,000 and $590,000.
4. The dwellings that are likely to be built on these lots would result in a property value of $380,000 to $1.18 million.

Figure 8: Greenfield Land Capacity

Lot Size	Lot Price	Dwelling Price	Feasible Dwellings	Feasible Dwellings %
400	$190,000	$380,000	69	38%
700	$270,000	$540,000	113	62%
800	$290,000	$580,000	0	0%
5000	$530,000	$1,060,000	0	0%
8000	$590,000	$1,180,000	0	0%
Total			182	100%

Source: Corelogic, Urban Economics

Figure 9: Greenfield Land Capacity



Source: Corelogic Database, Urban Economics

9. Development Yield from the Rhodes & Larson Site

The proposal would enable the development of approximately 750 dwellings, on sites of 300-500m^2. Figure 10 shows the estimated price of the proposed dwellings. The main points to note are:

1. The proposal enables a total of 750 lots, ranging in size from 300m^2 - 500m^2.
2. This lower lot size enables lot prices of $160,000, $190,000 and $220,000, and dwelling prices of $320,000, $380,000 and $440,000. There is clear evidence that shows smaller lots have a lower price, and enable lower priced dwellings.
3. A range of lot sizes also enables a range of dwellings types and sizes.

Figure 10: Proposal Dwellings on Rhodes & Larson Site

Lot Size	Lot Count	Lot Price	Dwelling Price
300	250	$160,000	$320,000
400	250	$190,000	$380,000
500	250	$220,000	$440,000

Source: Corelogic, Urban Economics

10. Potential Future Housing at Prebbleton by Price & Type

The following figures examine three future housing scenarios for Prebbleton.

The first is the **Existing Stock** scenario (the status quo). Under this scenario only 1% of dwellings are priced at $400,000 or less.

The second is the **Existing Stock plus Commercially Feasible Capacity** scenario. This is the scenario that would eventuate under the current District Plan provisions, which has some capacity for additional housing development. Under this scenario only 7% of dwellings would be priced at $400,000 or less, as at 2028 (in 2018 prices, i.e. inflation adjusted).

The third is the **Existing Stock plus Commercially Feasible Capacity plus Rhodes & Larson Site** scenario. This is the scenario that would occur is the proposal zone is applied to the subject property. Under this scenario a significant 20% of dwellings would be priced at $400,000 or less, as at 2028. This would have a wide range of social and economic benefits, most notable there would be more diversity in the housing stock, in terms of size and price, and this would enable more households to meet their housing needs.

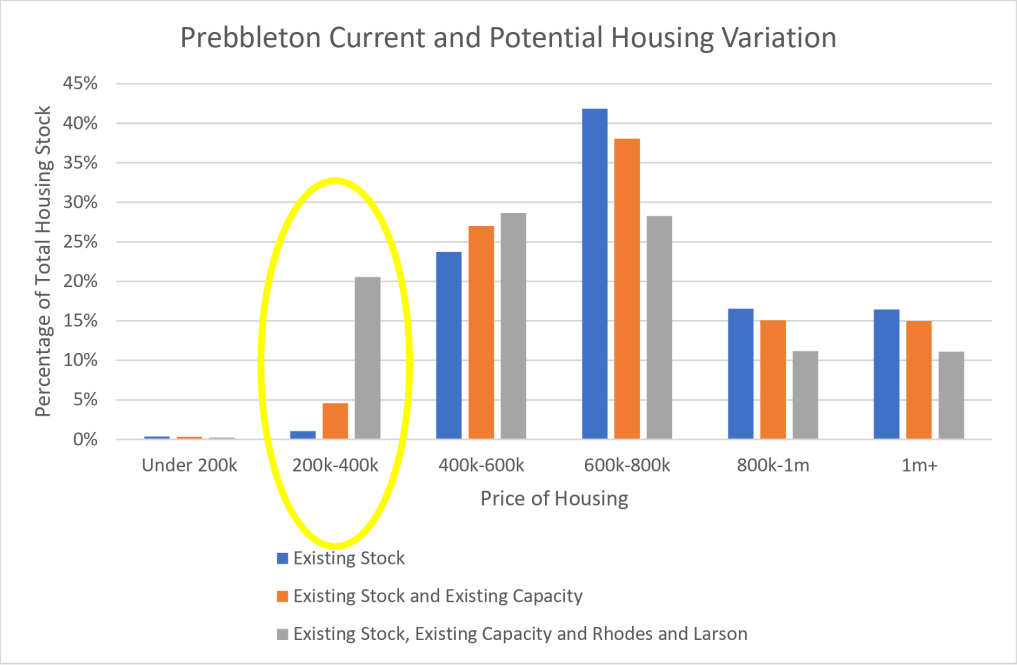
Figure 11: Future Housing Scenarios for Prebbleton

Future Scenario	Total Dwellings	Total Dwellings %
Existing Stock		
Less than $200,000	7	0%
$200,000-$400,000	21	1%
$400,000-$600,000	467	24%
$600,000-$800,000	824	42%
$800,000-$1,000,000	326	17%
$1,000,000 plus	324	16%
Total	**1969**	**100%**
Existing Stock plus Commercially Feasible Capacity		
Less than $200,000	7	0%
$200,000-$400,000	99	5%
$400,000-$600,000	585	27%
$600,000-$800,000	824	38%
$800,000-$1,000,000	326	15%
$1,000,000 plus	324	15%
Total	**2165**	**100%**
Existing Stock plus Commercially Feasible Capacity plus Rhodes & Larson Site		
Less than $200,000	7	0%
$200,000-$400,000	599	21%
$400,000-$600,000	835	29%
$600,000-$800,000	824	28%
$800,000-$1,000,000	326	11%
$1,000,000 plus	324	11%
Total	**2915**	**100%**

Source: Corelogic, Urban Economics

Figure 12 provides a graphical representation of the three scenarios. It is worth noting the significant increase in housing priced at under $400,000 under the proposal, as highlighted in yellow.

Figure 12: Future Housing Scenarios for Prebbleton

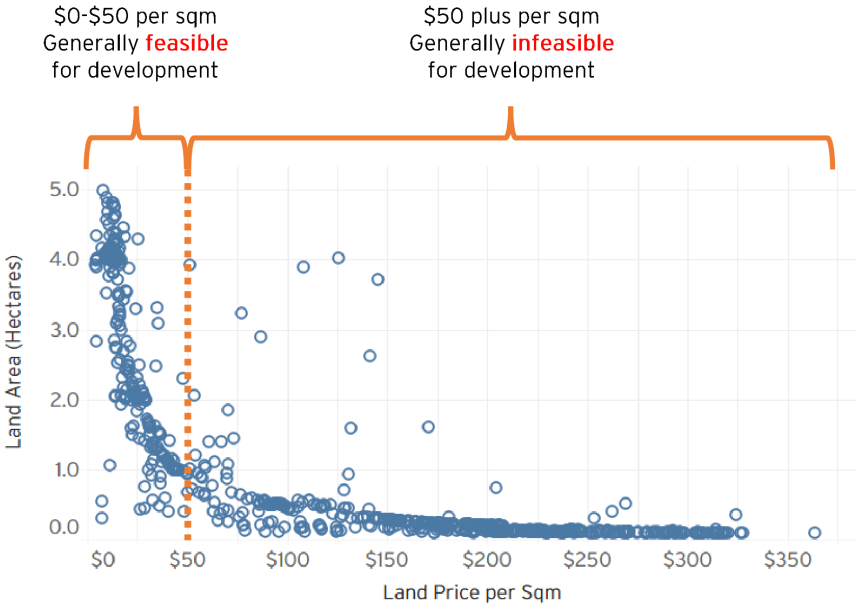


11. Lifestyle Block Redevelopment

The following regression analysis illustrates that in Prebbleton, only sites that are 1-2 hectares or greater in size have commercial potential for new development[4], i.e. lots below 1 hectare tend to be too expensive for redevelopment. This suggests that the majority of Lifestyle Blocks would not be suitable for development.

The present proposal for the Rhodes block, for small Lifestyle Block size sites (it is identified as a preferred rural residential development in the Council's Rural Residential Strategy 2014), would effectively prohibit any future urban development, and would contribute to the de facto greenbelt at Prebbleton. This would remove any future potential to expand the town to the south/west in the future (beyond the Larson Group land). We understand there is a requirement for the Rhodes block to be 'future proofed' for future urban development, but on this basis, future urban development would likely occur in an organic manner 'over time' depending on the aspirations of individual rural residential block holders.

Figure 13: Land Value & Lot Size Correlation



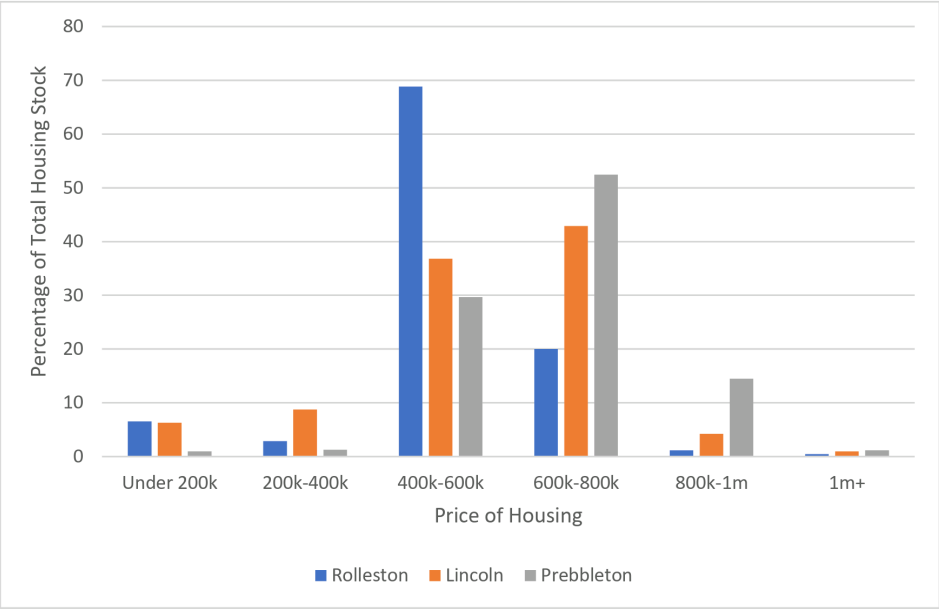
[4] R^2 = 0.833 indicating a strong correlation.

12. Comparison with the Housing at Rolleston and Lincoln

The following figure shows the price of housing in Rolleston and Lincoln and compares it with Prebbleton. The main points to note are:

- Prebbleton (in grey) is dominated by higher priced housing, the $600,000 - $800,000 range, and has practically no housing at $400,000 or less.
- Lincoln and Rolleston have a higher proportion of housing available in the $400,000 - $600,000 price range, which is more affordable, and also has a notable percentage of housing available in the $400,000 or less price ranges (in the order of 10-15%).
- Prebbleton has a much narrower range of house prices when compared to Lincoln and Rolleston. This lack of lower priced housing has significant economic and social implications, particularly in regard to the availability of a range of housing types and the availability of affordable housing, meaning Prebbleton residents are less able to meet their housing needs. For example, an elderly household looking to downsize their house would have little opportunity to do this in Prebbleton.

Figure 14: Rolleston, Lincoln and Prebbleton Current Housing Stock by Price



13. Auckland Infill Terrace Housing Market

It is worth noting that the Auckland housing market has aimed at increased intensification, with the Auckland Unitary Plan ("AUP") allowing infill terrace housing, and in some cases apartments, across many existing suburbs. Under the AUP, the price of new infill housing in existing suburbs has continued to increase, with Council's current estimate that the average price of new housing in the City is $1.5 million. It is worth noting that the majority of terrace housing has occurred in large scale masterplanned greenfield developments on the urban periphery. This is because such developments are able to carefully plan high density housing to achieve well designed urban environments, and more importantly, because large greenfield developers are generally able to access the finance to develop this type of housing more readily than small-medium scale infill developers (e.g. developers building 3-5 infill houses on an existing quarter acre property in a central suburb). The main implication of this for Prebbleton is that for the town to achieve any notable amount of more intensive and lower priced housing, is also likely to require a large masterplanned development, such as that which could be enabled on the Rhodes & Larson site. This is particularly important, because Prebbleton is now of a scale that can support a small supermarket, and one is presently planned, and small self-contained towns of this size should enable a diverse range of housing, in terms of size, type and price.

14. Appendix 1: Lot Size and Lot Value Correlation

The following figure shows the estimated lot price for a range of lot sizes in Prebbleton. This is derived from a regression analysis, which had a r^2 of 80%, indicating a very strong correlation.

Figure 15: Lot Size and Lot Price Correlation for Prebbleton

Lot Size (sqm)	Lot Value	Count	Percentage
300	$160,000	16	1%
400	$190,000	24	2%
500	$220,000	57	4%
600	$250,000	202	14%
700	$270,000	310	22%
800	$290,000	392	28%
900	$300,000	91	7%
1000	$310,000	130	9%
1100	$330,000	44	3%
1200	$340,000	67	5%
1300	$350,000	16	1%
1400	$360,000	8	1%
1500	$370,000	6	0%
1600	$380,000	3	0%
1700	$380,000	7	1%
1800	$390,000	3	0%
1900	$400,000	9	1%
2000	$410,000	9	1%

Source: Corelogic, Urban Economics

	Submission No: 001
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Lloyd
Last name	Bathurst
Email	[redacted]
Street name and number	[redacted]
Suburb	[redacted]
Town/City	Rolleston
Postcode	[redacted]
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I wish to speak at the hearings
Phone number	[redacted]
Preferred location to be heard	Christchurch City,Rolleston
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat agree
Comment	The report (p 37/44) notes "mitigating many of the local effects identified for Option A" which implies problems without identifying them, in Selwyn I see no problems implementing Option A, and prefer option A, particularly for Selwyn District. Elsewhere there are comments about "capacity restraint" but at present Rolleston has capacity for almost 10,000 people in housing areas being developed, I see no capacity restraint. Unfortunately the Natural Hazards plan (p 25/44) does not include liquefaction areas (Christchurch particularly in the East, and Kaiapoi) or areas of higher earthquake risk (Rangiora has a seismic z factor of .33, the remainder has a z factor of .3, lower earthquake risk) If those factors were included it would explain why Rolleston in particular has grown much faster than predicted since the earthquakes, and why there will continue to be much higher demand there than has been allowed for herein.
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Agree
Comment	

Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Agree
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Somewhat agree
Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	P 19/44 notes "These targets will need to be revisited every 3 years"which I agree with, as long as people are allowed to live where they want to live. That means that if one area of growth grows faster than presently planned, then a greater target population should be then given to that area. Not allowing people to live where they want within the area would be detrimental to the area as a whole.
Attachments	

Submission No: 033

Submission Form

Greater Christchurch Partnership
Te Tira Tū Tahi
One Group, Standing Together

HAVE YOUR SAY BY 30 NOVEMBER 2018

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

How to make a submission

Online: Make a submission using the online submission form at www.greaterchristchurch.org.nz/ourspace

Email: ourspace@greaterchristchurch.org.nz

Post: Our Space consultation, Greater Christchurch Partnership, PO Box 73012, Christchurch 8154

Hand deliver: Civic Offices, 53 Hereford Street

SUBMITTER DETAILS

Name: MR COURTNEY INCH

Address: [redacted]

Email: [redacted]

I am completing this submission: ☐ For myself ☑ On behalf of a group or organisation

If you are representing a group or organisation, how many people do you represent? Four

HEARINGS

Hearings are planned for February 2019.

Do you wish to speak to the hearings panel?

☐ Yes, I wish to speak at the hearings ☐ No, I do not wish to speak at the hearings

If you wish to speak at the hearings, please indicate your preferred location to be heard and provide a contact number.

Preferred location: ☑ Christchurch City ☐ Rangiora ☑ Rolleston

Contact number: [redacted]

Page 564

Item 4

Attachment D

Our SPACE Consultation
Greater Christchurch Partnership

29th November 2018

Submission to Settlement Pattern Update

Submitter: Majority Beneficiaries of the Bellgrove Family Trust; Gary Inch, Devin Inch, Sharlene Inch and Courtney Inch.

Submission: **In Support** of Greater Christchurch Settlement Plan and future residential development of eastern Rangiora. Willing to be heard in support of this submission.

As majority beneficiaries of the Bellgrove Family Trust, owner of land identified within the proposed future residential development area in eastern Rangiora (5.3, Figure 15) we support the proposal for the inclusion of this area for future residential development.

Our family has a direct connection since 1920 to the land identified for future development in eastern Rangiora with four generations of Inch family ownership of the farmland and historic homestead "Bellgrove" located at 52 Kippenberger Avenue, Rangiora. Being raised at "Bellgrove" we have long understood that a time would come when farming this land would give way to residential development.

Given the family tenure on this land we have a desire to see it developed in a manner encompassing the vision and principles of our family. We also feel a duty to our father Trevor Inch, as a long serving member of local government and mayor of Waimakariri District for nine years to see the land developed in a way that enhances Rangiora and preserves the cultural value of the historic homestead and surrounds. It was our father's vision that one day the family farm would be developed in line with these values and we wish to support the process that allows this.

The 92 hectares of family land identified for residential development in eastern Rangiora to the north and south of Kippenberger Avenue is ideally located for residential development due to its proximity to central Rangiora. Its location aligns perfectly with the 10 minute neighbourhood concept outlined in the growth strategy (page 30) of the Greater Christchurch Urban Development Strategy Update.

We believe Rangiora's residential offering is different to some other areas in the Greater Christchurch region, with a stronger lifestyle and community component and provides families alternative options. This is only possible with the availability of further residential sections as there are a limited number of residential sections available which will be easily absorbed in the relatively short term

"Bellgrove" is located 1.8km from the Rangiora Town Hall 1.6km from the Rangiora Library, 1.4 km from Rangiora Railway Station and is bounded by Rangiora High School and Rangiora Recreation Centre to the west, Mainpower Oval national cricket and hockey fields to the north and Rangiora Golf Club to the east.

Being currently used for farming there is little restriction on road, walkway or cycle path design and there is title assess to Kippenberger Avenue, Golflinks Road, East Belt and Northbrook Road allowing easy local access to existing roadways and the northern motorway into Christchurch and the airport. The land is bisected by the main arterial road from Rangiora to Woodend and Pegasus and a new

cycleway from Rangiora to Woodend and Woodend Beach. It is in close proximity to Rangiora railway station for easy access to any future rail options.

"Bellgrove" homestead is a fully restored historic category 2 homestead surrounded by numerous large trees which could be made a focal point in any development and is the source of the Cam River which could be developed further to include green spaces, walkways and cycle ways to the nearby town centre, schools and recreational facilities.

The family envisage working with developers willing to create a diversity of housing and supporting amenities which differs to those offered in Christchurch and other regional centres. We think that residential development of "Bellgrove" fits with the projected growth of Rangiora and provides a unique sustainable growth solution proven by the growth in this area that existed prior to the Canterbury earthquakes.

In our opinion residential development of "Bellgrove" balances Rangiora, with much of the available development area being closer in proximity to the centre of Rangiora than many parts of recent western Rangiora development. The Rangiora retail centre has expanded east in recent years creating further imbalance in relation to the pattern of residential expansion. Development of this land also serves to link all parts of Rangiora with the council facilities that border it.

We support this update and the planning process that allows for land identified in eastern Rangiora to be developed in a way that will add enduring value to Rangiora and surrounds and will support the partnerships involved in this process. We are willing to make a verbal submission in support of plans that allow the development of land that includes the land of the Bellgrove Family Trust.

Yours sincerely

Gary Inch
Devin Inch
Sharlene Inch
Courtney Inch

Submission No: 028

SUBMISSION ON OUR SPACE 2018-2048

CONSULTATION DOCUMENT FOR THE REVIEW OF THE GREATER CHRISTCHURCH

SETTLEMENT PATTERN – NOVEMBER 2018

To: Our SPACE Consultation
Greater Christchurch Partnership
PO Box 73012
Christchurch 8154
Email: ourspace@greaterchristchurch.org.nz

Submission by: M. Springer

Hearing of Submissions: The submitter does wish to be heard in support of their submissions.

---

1. **Introduction**

The submitter is the owner of 1.2 ha of land on the north side of Prebbleton fronting Springs Road. The land contains a single dwelling with established planting and is adjoined on the south and east sides by Residential Zoning and activity (Living X) with the rail trail and residential zoning across Springs Road to the West. Part of the site (title) is also within the Prebbleton Preferred Growth Area (Appendix 31 of Selwyn District Plan – Annexure v). The land has been variously inside and outside of the Metropolitan Urban Limits (MUL). When Proposed Plan Change No. 1 to the Regional Policy Statement was prepared and notified the property was severed by the MUL and the Council subsequently adopted this limit in setting the boundary for the Prebbleton Structure Plan which was reflected in Plan Change No. 21 to the Selwyn District Plan – Management of Growth at Prebbleton (Refer Site Plan – Attach 1).

When the decision (version) of Plan Change No. 1 was released, the MUL had moved to the south of the subject property excluding all the property from the MUL. This was not done on the basis of any submission lodged to PC1, a matter which appears to be recognised by the Council when in correspondence (December 2011) it noted (Refer Attach 2):

> *"In investigating her property further as a result of early stages or preparing PC21 (proposed plan change for Prebbleton) and reviewing the new operative Chapter12A, it has come to my attention that the decision version of Change 1, and*

Chapter 12A as a consequence, has moved the MUL to the south of Margaret's property excluding it in its entirety.

I have sought clarification from ECan as to why this was ever formalised as there is no commentary or direction that I am aware of within the decision issued on Change 1. This apparent error has the consequence of excluding Margaret's land in its entirety and making the Structure Plan and the SDP 'Preferred Growth Opti8on' (SDP – Appendix 31) for the township inconsistent with Chapter 12A. The reason I believe it to be an error is that Change 1 MUL adopted the 'preferred Growth Option' for Prebbleton settled by the Court. The notified version of Change 1 reflected this and in doing so incorporated the lower half of Margaret's property. I am investigating a number of options to remedy this issue while I await a response from ECan".

In addition correspondence with the Council (June 2008) indicated that where possible the MUL should follow the property boundaries and that the boundary of the MUL may not be appropriate in servicing the site (Refer Attach 3).

2. General Submission

It is accepted that the Councils have made progress with integrated planning for the utility systems that they are responsible for, and related funding, since the Urban Limit lines were first introduced. The Councils are in the best position to judge whether service network extensions are feasible, in negotiation with landowners and applicants. The development process needs flexibility. The PIB/Urban Limit lines as currently prescribed are likely in some places to inhibit efficient, economic land development, and cannot be justified by a need to protect and manage the coordination of infrastructure with land development. This is the case in respect of the submitters land.

The submitter requests that the plan be amended to increase the amount of readily developable land that can be made available for development and that a move to higher densities of housing be supported and facilitated but not required or directed through statutory plans. This would be achieved by placing the infrastructure limit around the full extent of the submitter's title.

3. Subject Land

The submitter seeks to have the subject land incorporated into an appropriate urban development area and argues that the inclusion of all of the submitters land within an urban category is appropriate and will make a useful contribution to housing opportunity, choice and residential activity in Greater Christchurch and the Selwyn District. In terms of the suitability of the land for the purpose proposed the following is noted;

(1) The land is in large part within the urban environment of Prebbleton and the Preferred Prebbleton Growth Plan.
(2) The land is a small block largely adjoining or facing urban zoning and activity.
(3) The site has no value in terms of making any sustainable contribution to 'rural' or farming activities and is now isolated and constrained by the urban zoning at Prebbleton.
(4) The land can be serviced.
(5) There are no geotechnical constraints to development of the land.
(6) The land adjoins the major road network and a regular public bus service passes the site. The site is also now located within the Springs Road (Prebbleton village centre) 50km speed zone.
(7) The land is within walking distance of the convenience shopping and amenities at Prebbleton (200m).
(8) The land is located within 200m of the primary school at Prebbleton.
(9) That the inclusion of this land for residential use will not impact adversely on the management or staging of development in Prebbleton.
(10) That approximately half of the site was located within the MUL and the boundary of the Prebbleton Structure Plan, but was deleted without explanation or justifying submission. It is contended largely, in accordance with the Council letter (June 2008) that the whole site should be within the appropriate urban zone.

When regard is had to the concept of a 10 minute neighbourhood for the Key Centres (Fig 19 of the Our Space Document) then the subject land satisfies that outcome better than much of the existing urban land at Prebbleton.

The subject land does not represent an isolated or disjointed urban zoning or development opportunity but is located in area that contains urban infrastructure, amenity and services. Development of the land for the purpose sought should be encouraged in order to provide infrastructure efficiency and a compact and sustainable urban area at Prebbleton. It is located closer to the facilities and amenities of Prebbleton than many of the areas identified for residential growth in the town.

The submitter thanks you for your consideration of this submission. The submitter is available to meet with Council Officers at any time.

M Springer
529 Springs Road
Prebbleton
Email: margspringer@hotmail.com

Dated: 29 November 2018



_____

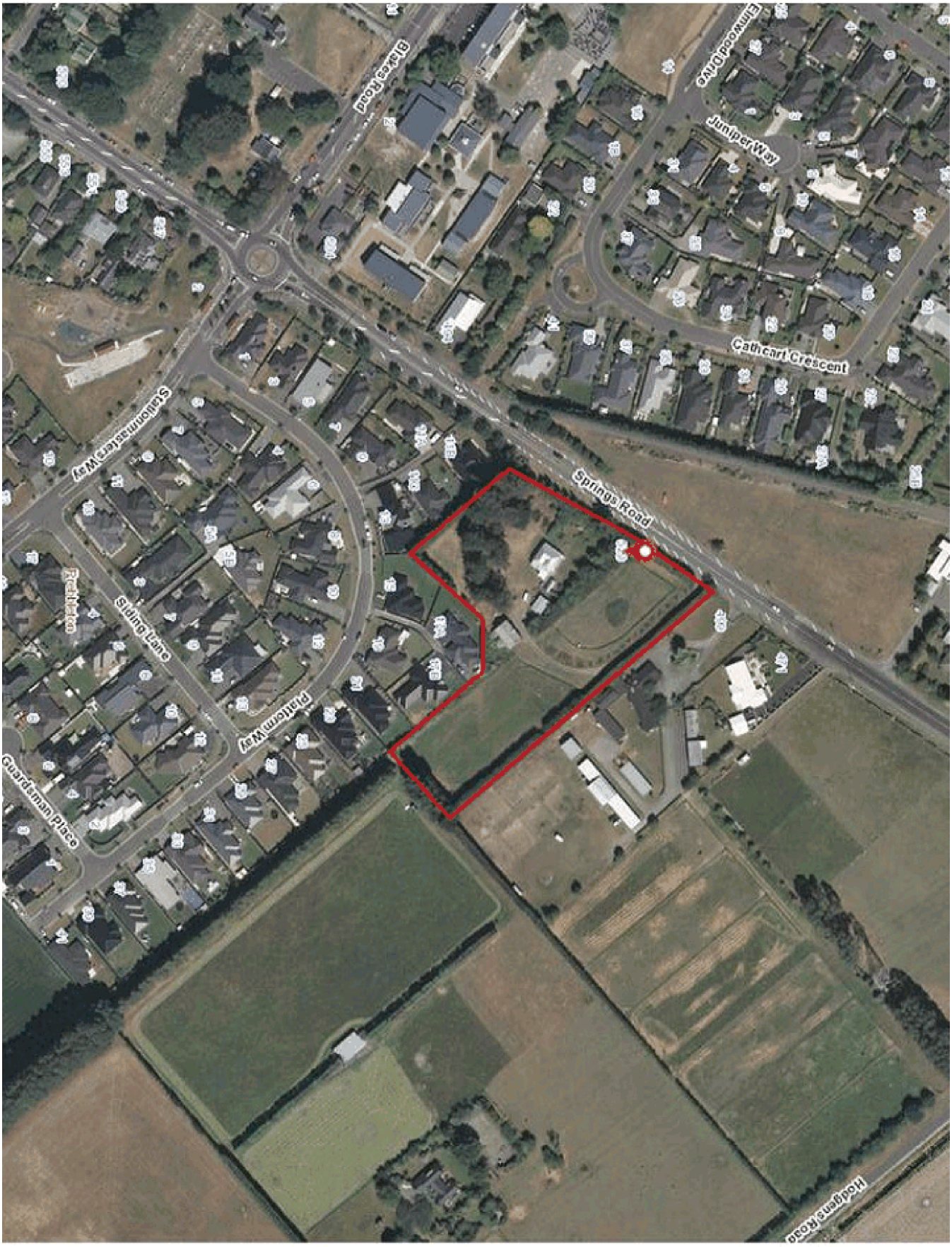
Signature

Attachments:

(i) Aerial photograph
(ii) Correspondence December 2011
(iii) Correspondence June 2008
(iv) Current Zoning Map
(v) Prebbleton Preferred Growth Area Plan

Submission No: 028
Attachment 1

Attachment i



Page 572

Attachment D Item 4

Submission No: 028
Attachment 2

Attachment ii

Mia

From: Craig Friedel <Craig.Friedel@selwyn.govt.nz>
Sent: Friday, 2 December 2011 11:19 a.m.
To: Kalina Rouch (kalina@urbisgroup.co.nz); 'kalina@rgmc.co.nz'
Subject: M Springer - Prebbleton's MUL
Attachments: E31_Prebbleton_Growth.pdf; Map H5 - Notified version.pdf; Map H5 - Decisions version.pdf; RPS Chapter 12A H5.pdf

Hello Kim,

I having spoken to Margaret Springer this morning, who was seeking clarification of the matters to be discussed at the meeting we have scheduled for Wednesday 14th December. The reason for this email is to provide you with a summary of this discussion and the background to the primary issue I was wanting to discuss.

As you will recall, Margaret's property was severed in two by the MUL under Change 1 as notified (Planning Map H5). Council subsequently adopted this MUL in setting the boundary of the Township for the now adopted Prebbleton Structure Plan. Up until recently it was my understanding that Margaret has development rights for the portion contained within the MUL.

In investigating her property further as a result of early stages of preparing PC 21 (proposed plan change for Prebbleton) and reviewing the now operative Chapter 12A, it has come to my attention that the decision version of Change 1, and Chapter 12A as a consequence, has moved the MUL to the south of Margaret's property excluding it in its entirety.

I have sought clarification from ECan as to why this was ever formalised as there is no commentary or direction that I am aware of within the decision issued on Change 1. This apparent error has the consequence of excluding Margaret's land in its entirety and making the Structure Plan and the SDP 'Preferred Growth Option' (SDP - Appendix 31) for the township inconsistent with Chapter 12A. The reason I believe it to be an error is that the Change 1 MUL adopted the 'Preferred Growth Option' for Prebbleton settled by the Court. The notified version of Change 1 reflected this and in doing so incorporated the lower half of Margaret's property. I am investigating a number of options to remedy this issue while I await a response from ECan.

I wanted to meet in person with yourself and Margaret so that she clearly understands the issue and to then work towards refining options moving forward that could potentially be advanced through proposed PC 21. I have **attached** a number of maps and plans to illustrate the history of the MUL in Prebbleton.

I am happy to discuss any queries you may have before the scheduled meeting.

Kind regards

Craig Friedel
Policy Planner
Strategy & Policy Team
Environmental Services
DDI: (03) 347 2827

Selwyn District Council
2 Norman Kirk Drive, Rolleston 7614
Phone: (03) 347-2800 or (03) 318-8338
Fax: (03) 347-2799
Post: PO Box 90, Rolleston 7643, Christchurch
www.selwyn.govt.nz | m.selwyn.govt.nz | www.selwynlibrary.co.nz

Submission No: 028
Attachment 3

Attachment iii

Selwyn DISTRICT COUNCIL

2 NORMAN KIRK DRIVE
PO BOX 90, ROLLESTON 7643
PH: (03) 347 2800 FAX: (03) 347 2799

REF No.....

Margaret Springer
870 Hanmer Road
Brookside
RD 2
LEESTON

16 June 2008

Dear Margaret

I refer to our recent telephone discussions.

As I recall your property in Prebbleton is effectively split by the proposed Metropolitan Urban Limit (MUL) contained in Plan Change 1 (PL1) to the Regional Policy Statement. I understand that you sought advice from Ecan but unfortunately that advice was not forthcoming until after the submission period for this process had closed.

As I indicated to you there are statements in PC1 that indicate that the MUL should, where possible, follow property boundaries. Accordingly, it is not unreasonable to assume that the location of the MUL in respect of your property is an oversight, although I do not have enough information to confirm this.

In the absence of a submission to address this issue [1] I suggest the following course of action:

1. That a copy of this letter is placed on your property file.
2. That a copy of this letter be placed on the Prebbleton future structure plan file.

Theses two actions will allow the following to occur:

1. Any future rezoning proposals concerning your property will be informed by the letter with the view that urban zoning would follow the eastern boundary of your property. Secondly, any search of the property file by prospective purchasers of your property would uncover this letter and perhaps provide the purchaser with a degree of security surrounding the future zoning potential of your land. I should qualify the above statement by adding that a future rezoning of your land to your satisfaction is not guaranteed.

[1] I can confirm that there are no submissions lodged in respect of your property.

2. In the next 12 – 18 months a structure plan is planned for Prebbleton. This structure plan will provide a more detailed "map" for future development within the MUL. This structure plan will set out future road linkages, areas of open space, community and recreational facilities, provision for storm water etc. Notwithstanding this level of detail a structure plan could also propose a new location of the MUL in respect of your property. While the structure plan is not a statutory plan (unlike a District Plan or a Regional Policy Statement), it would be a document that would be referred to in respect of a proposal for rezoning and again would lend weight to the urban boundary following the eastern boundary of your property rather than cutting it in two.

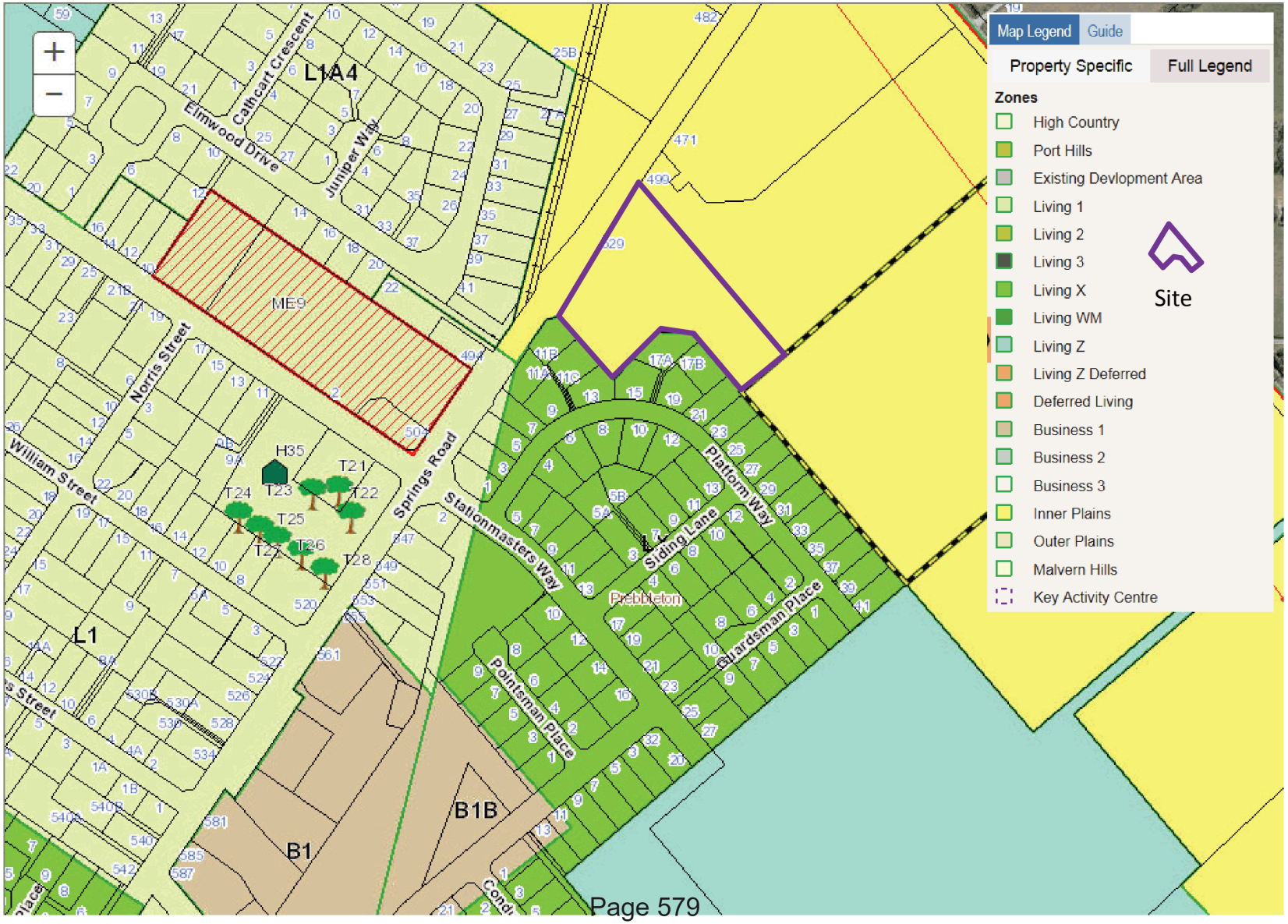
As I discussed with you this appears to be as much as I can do to rectify what appears to be an oversight in the location of the MUL. Again I should reinforce the MUL does not rezone your land but rather provides a strong indication where future rezoning should occur. The advice provided in this letter may make available a means by which a future rezoning of your property would follow cadastral boundaries rather than that currently proposed.

Yours faithfully

Tim Harris
Planning Manager

Submission No: 028
Attachment 4

Attachment iv



Attachment D Item 4

Submission No: 028
Attachment 5

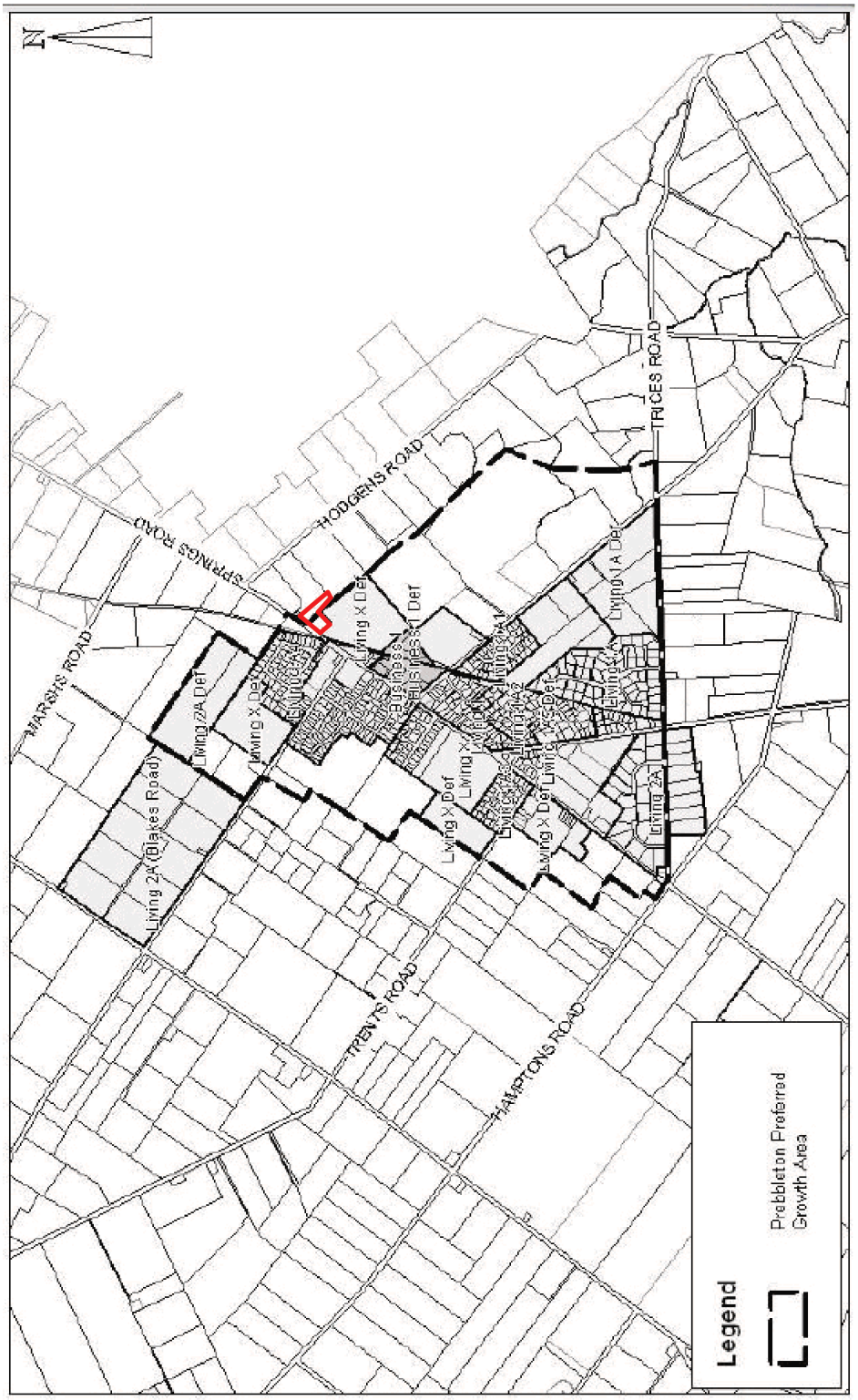
Attachment v

PART E

APPENDIX 31

PREBBLETON PREFERRED GROWTH

Site



Submission No: 091

Landowners ODP 12 Rolleston

c/-Angelene L Holton

5 December 2018

ourspace@greaterchristchurch.org.nz

Attention: Keith Tallentire (Partnership Manager)

Submission

Our Space 2018-2048: Greater Christchurch Settlement Pattern Update

Thank you for our phone call today and please accept this a late submission on the Our Space 2018-2048: Greater Christchurch Settlement Pattern Update, which I hope will be accepted as I have been travelling out of the city.

I would like to be heard in support of this submission if there is an opportunity.

I have been submitting to the Selwyn District Council and various authorities on behalf of the landowners of this ODP12B, Rolleston since 2009. This submission is also on behalf of that group of landowners. The area of ODP12B was approved by the Selwyn District Council to be incorporated into the Selwyn District Plan. I now take this the opportunity to reiterate earlier submissions regarding the proposed rezoning of ODP12b along East Maddisons Road in Rolleston (see Appendix 1 & 3).

Submission in Support of Our Space 2018-2048 in the following aspects:

1. Support a change to the Canterbury Regional Policy Statement to allow Chapter 6 and Map A the flexibility to respond to housing needs in the Rolleston area.
2. Support that additional housing capacity be directed to Rolleston as the key town in the District.
3. Support public transport and roading enhancements in the Selwyn District including improved public transport, completion of the Southern Motorway and development of district CRET's roads.

Previously I have submitted on both the draft Regional Policy Statement and on Plan Change 7 prior to the earthquakes, seeking residential zoning allowing allocation of 200-300 houses for the last remaining 400m of East Maddisons Road (http://www.selwyn.govt.nz/__data/assets/pdf_file/0008/26927/S16-Angelene-Holton.pdf).

I have also submitted on the Rolleston Structure Plan, LURP and Southern Motorway proposals all of which encouraged development of the Rolleston area. Within reason and where there is adjacent infrastructure, land owners like myself wishing to develop their properties should be able to do so. The area referred to by the Council as ODP12B is certainly 'development ready' with the recent installation of sewer and water supply along this section of East Maddisons Road. Development of OPD12 B has been recognised and supported by the Selwyn District Council (See Appendix 2).

The seven landowners of ODP12b also jointly support the inclusion of ODP Area 12B as an extension to the Outline Development Plan for Area ODP12. In 2014, the Council contracted Tonkin & Taylor to undertake Geotechnical and Preliminary Site Investigation work to confirm suitability of the land for development.

Inclusion of area ODP12B in the residential zoning is important as it provides important vehicle, cycle and pedestrian links between East Maddisons Road and Dunns Crossing Road and residential development between the existing residential zone the proposed CRETS road. It will also enhance use of infrastructure given that the land on three sides is also residential.

Whilst we understand the complications related to the boundaries of the Canterbury Regional Policy Statement, we remain dismayed, given the Council's earlier support for this zoning, that nothing has happened nor indeed has the Council signalled that it will proceed with the change it earlier agreed to once the CRPS is reviewed.

We will of course submit when further specific zoning proposals are notified as part of any further review.

Yours sincerely



Angelene Holton

18 May 2015

Minister of Earthquake Recovery
Canterbury Earthquake Recovery
Authority c/- Environment
Canterbury

AMENDMENT TO LAND USE RECOVERY PLAN – MAP1: LAND USE RECOVERY PLAN FOCUS AREA - REINSTATEMENT OF GREENFIELDS ODP 12B ROLLESTON TO SELWYN DISTRICT PLAN – ACTION 18

Dear Minister

As all the landowners of Selwyn District Council ODP Area 12B (Appendix 3) we are urgently seeking the reinstatement of ODP Area 12B into the LURP (Appendix 1 - Map 1) to recognise Selwyn District Council Plan changes. This land was included as Living Z in the SDC following the Minister's notification of the LURP on December 2014. However, this land does not appear in LURP Map 1 for Rolleston, and no explanation has been given as to why it has not been included.

1. Following support of **all** landowners in ODP Area 12B the SDC included this small area as part of the ODP Area 12A land Living Z zone and published it as such in its District Plan following the Ministers notice of the LURP in December 2014. A geotechnical and Preliminary Site Investigation work was also undertaken on this block of land by Tonkin and Taylor. As a result of this notification I and other land owners have now been approached by land agents acting on behalf of interested developers regarding possible sale. We were informed by the SDC planners that this land had been identification of priority areas for development required for the major CRETs road adjacent to Faringdon, primary and secondary road transport and cycleway links. Subsequently the land had been rezoned to Living Z as appears in Appendix 1.
2. I have attached the SDC planning maps which show how this ODP 12A & B was included by SDC (Appendix 1). There has been no explanation given for this removal to the landowners from the SDC or Environment Canterbury officials. We are seeking an urgent amendment to the LURP (Map 1) and SDC (Map 110 – Sheet 1 page 116) to reinstate this ODP12B land as part of ODP12A. It is unacceptable that property owners and the wider public cannot have complete confidence in the Selwyn District Plan (a regulatory documents) as published online and to arbitrarily revert zoning from Living Z a few months later is completely reprehensible.
3. Inclusion of ODP Area 12B in the residential zoning is important as it provides important transport, vehicle, cycle and pedestrian links between East Maddisons Road and Dunns Crossing Road and residential development between the existing residential zone the proposed CRETS road. It will also enhance use of infrastructure given that the land on three sides is also residential. We are now completely dismayed and at loss to understand why this amendment is no longer included in the LURP for the Selwyn District Council. It makes no sense whatsoever to the overall form and function of Rolleston Township, and the interconnectivity of transport, reserves, water and wastewater linkages for ODP 12A to have this ODP12B deliberately removed.
4. Without the CRETS collector, inner primary and secondary roads shown in Map Area ODP 12A & 12B there is a danger that future development will be delayed and ad hoc losing an

important opportunity now to integrate ODP12, with ODP10, PC7, PC8, PC9 and Faringdon, and ultimately with

the new Rolleston High School and Foster Recreational Park. The roundabout intersection at Goulds and East Maddisons Road is now extremely dangerous due to increased traffic flows and the proposed CRETs road is an essential part of connectivity and safety for this area. Without the CRETs road, diversion of East Maddisons Road and the Faringdon subdivision will not be able to be completed safely and the south east cohesion of Rolleston will be entirely lost.

5. The CRETS collector road linking these areas and ODP 12B to Faringdon must be seen as an important part of the LURP and SDC's strategic and RSP planning process. Without it South East residential Rolleston including ODP10 (Goulds Road) and Faringdon will lose all transport and wastewater integration and connection with other rapidly developing sections of Rolleston. This is an important CRETs transport route supporting the Southern Motorway extension as Road of National Significance and will allow eastern Rolleston residential traffic to continue to move smoothly to towards Selwyn Road and beyond as it does now. We believe the inclusion of ODP12B with ODP12 will greatly assist in safe and efficient transport routes for this area connecting them to the wider areas of the upgraded Springston Rolleston and Selwyn Roads. This is especially important given the growth in areas such as Lincoln (Lincoln Hub), Prebbleton and Hornby.
6. It should be remembered that residential rezoning of this land is not new and submissions have been lodged with the SDC since 2008. Under the 2009 Rolleston Structure Plan (RSP 2009) these seven properties sat within SR5 proposed for residential zoned development (stage 2A) from 2017.
7. Inclusion of the land as residential also helps support the government's desire to provide more affordable housing through greater supply of residentially zoned land. Interestingly in the Christchurch Press on Monday 11 May the Real Estate Institute is quoted to saying "Rising land prices have also added to new-home costs. New sections are smaller than five years ago but prices have jumped from $160,000 to $190,000." Reducing the scarcity of land for residential development will provide a platform for more affordable housing. Although much is said about the Auckland housing market there is an opportunity to ensure that the greater Christchurch area does not finish up with the same dilemma.
8. The comment has been made that there is conflict between the planning communities and the Christchurch City Council who wish to limit high growth of areas such as Rolleston to prevent people
moving outside of the CCC boundaries. This is also completely reprehensible, contrary to Government Policy and should not be supported by CERA or central government.
9. Given the SDCs publication of the plan we intend to copy this submission to the Minister of Local Government. Also perhaps a copy to the Minister of Housing. We have been informed that there a no planning instruments available to seek rectification of this reprehensible situation (e.g. a private plan change under the RMA).

We look forward to the reinstatement of ODP 12 in its entirety in the SDC District Plan and

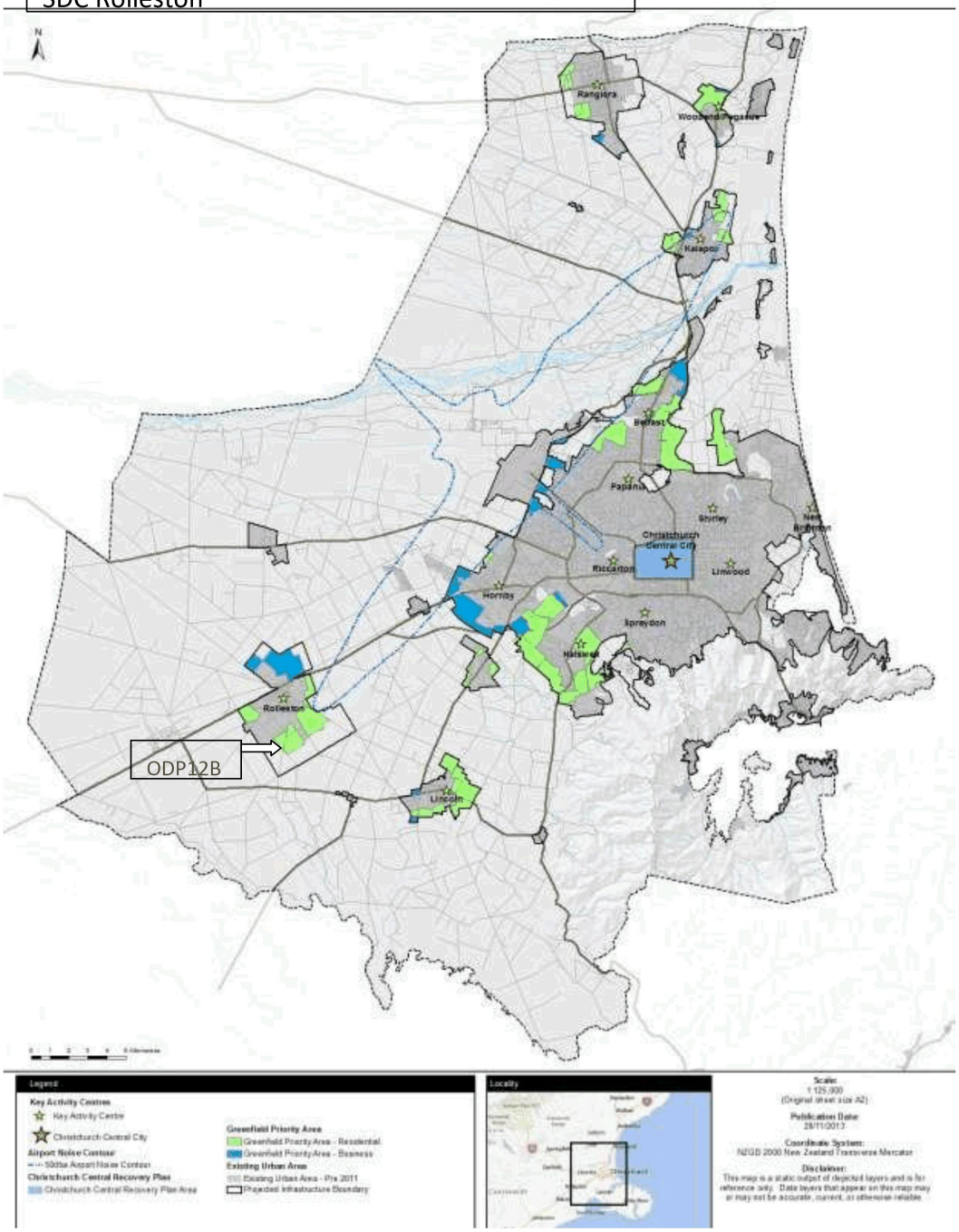
LURP. Yours sincerely



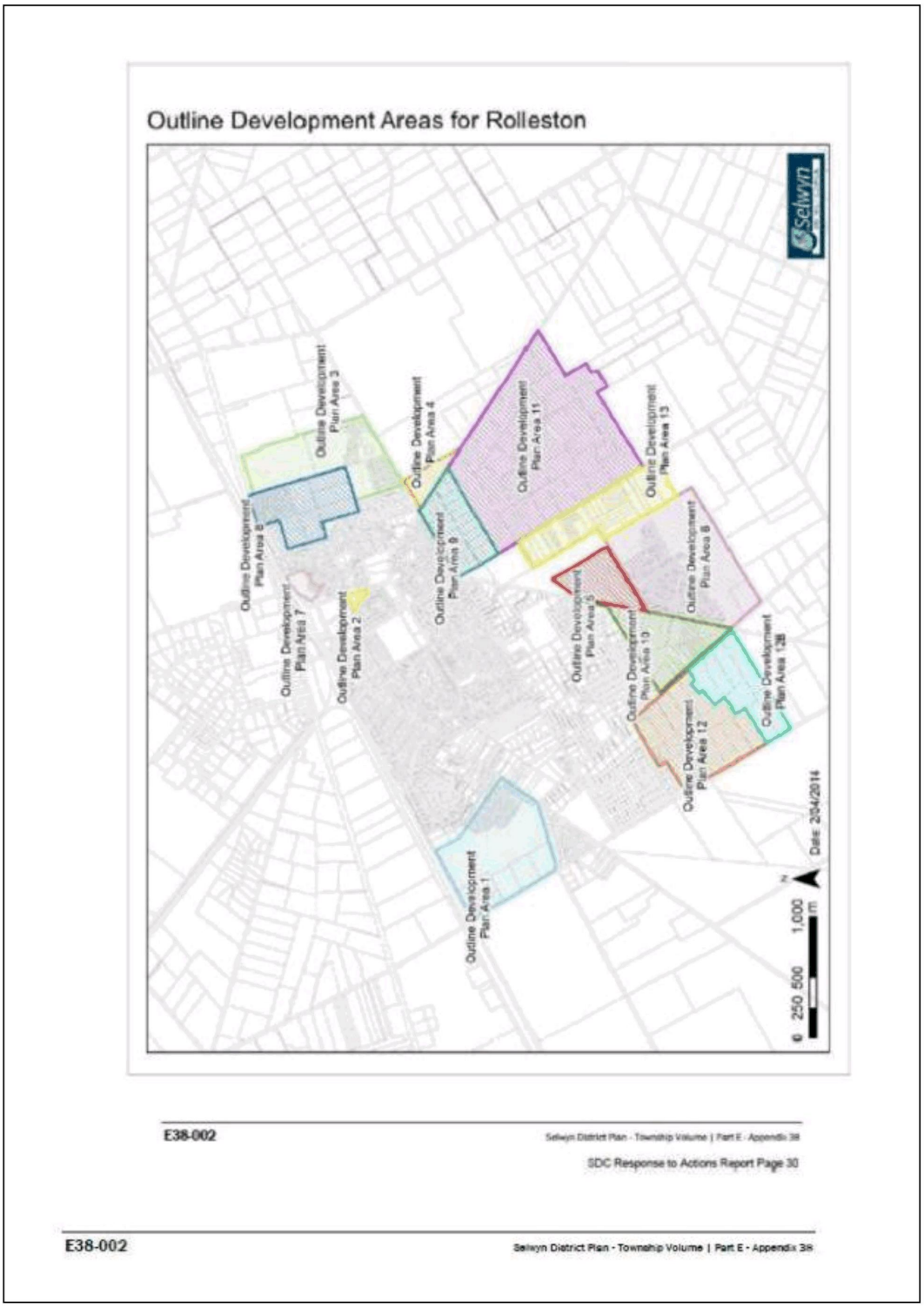
Outline Development Plan 12B Landowners

c/- Angelene Holton
SDC Rolleston

APPENDIX 1 LURP MAP 1 with missing ODP12B –



Appendix 1 – Selwyn District Council District Plan Appendices amended to include Outline Development Plan Area 12 – Including CRETS Road, primary and secondary roading, cycleways, reserves and extent of Living Z zone to provide continuity between Rolleston ODP areas and Faringdon.


Outline Development Areas for Rolleston
Selwyn
Outline Development Plan Area 1
Outline Development Plan Area 2
Outline Development Plan Area 3
Outline Development Plan Area 4
Outline Development Plan Area 5
Outline Development Plan Area 6
Outline Development Plan Area 7
Outline Development Plan Area 8
Outline Development Plan Area 9
Outline Development Plan Area 10
Outline Development Plan Area 11
Outline Development Plan Area 12
Outline Development Plan Area 13
Outline Development Plan Area 12B
Date: 2/04/2014
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E38-002
Selwyn District Plan - Township Volume | Part E - Appendix 38
SDC Response to Actions Report Page 30
E38-002
Selwyn District Plan - Township Volume | Part E - Appendix 38

OUTLINE DEVELOPMENT PLAN AREA 12

INTRODUCTION

This Outline Development Plan (ODP) is for Development Area 12. ODP Area 12 comprises 87ha and is bound by East Maddisons Road to the north-east and Dunns Crossings Road the northwest.

The area is identified in the Land Use Recovery Plan (LURP) as a greenfield priority area.

The ODP embodies a development framework and utilises design concepts that are in accordance with:

– The Land Use Recovery Plan (LURP)

– Policy B4.3.7 and B4.3.77 of the District Plan

– Canterbury Regional Policy Statement

– The Rolleston Structure Plan

– The Greater Christchurch Urban Development Strategy (UDS)

– The Ministry for the Environment's Urban Design Protocol

– 2007 Christchurch, Rolleston and Environs Transportation Study (CRETS)

– 2009 Subdivision Design Guide

A single Overall ODP is accompanied by three more specific plans that reference the Density, Movement Network and Green/Blue Networks.

DENSITY PLAN

The ODP area shall achieve a minimum of 10 household lots per hectare. ODP Area 12 supports a variety of allotment sizes within the Living Z framework to achieve this minimum density requirement. Should this area be developed in stages, confirmation at the time of subdivision of each stage, and an assessment as to how the minimum density of 10hh/ha for the overall ODP can be achieved, will be required.

ODP Area 12 predominantly provides for low density sections, although some medium density housing options have been supported along the Primary and Secondary Roads. Medium Density areas have been identified in accordance with the design principles of Policy B3.4.3. Minor changes to the boundaries of medium density areas will remain in general accordance with the ODP provided such changes meet the criteria below and the Medium Density lots created have a consent notice registered on the title stating that they are subject to the medium density provisions:

- Ability to access future public transport provisions, such as bus routes;
- Access to community and neighbourhood facilities;
- Proximity to Neighbourhood Parks and/or green spaces;

- North-west orientation, where possible, for outdoor areas and access off southern and south-eastern boundaries is preferred;
- Distribution within blocks to achieve a mix of section sizes and housing typologies; and
- To meet the minimum 10hh/ha density requirement and development yield.

Existing dwellings and buildings will have to be taken into account when investigating subdivision layout and design

Lower density allotments with an average lot size of 1000m₂ are necessary on the north-western boundary to integrate the site with the adjoining Living 1B zone to achieve a progressive transition between residential and lower density residential densities. Appropriate interface treatments at the boundary between residential and low density residential activities, and the methods to protect these treatments in the long term, could include fencing and landscaping.

MOVEMENT NETWORK

For the purposes of this ODP, it is anticipated that the built standard for a —Primary Roadll will be the equivalent to the District Plan standards for a Collector Road or Local-Major Road standards, and a —Secondary Roadll will be the equivalent to the District Plan standards for a Local-Major or Local-Intermediate Road. The ODP provides for an integrated transport network incorporating:

- Primary and Secondary Roads linking the East Maddisons Collector Road to the east, the CRETS Collector Road to the south and the Dunns Crossing Collector Road to the west;
- active transport connections at the boundary of the development area from the Dunns Crossing Collector Road to the south-west, the CRETS Collector Road to the south-east and the East Maddisons Collector Road to the north-east to adjacent neighbourhoods that facilitate the use of existing and future public transport options;
- pedestrian and cycle corridors and connections to encourage viable alternatives modes of transport to private motor vehicles.

Roading connections have been designed to achieve permeability, whilst minimising the number of new intersections and maintaining appropriate intersection spacing. The proposed roading hierarchy will deliver an accessible and coherent neighbourhood that provides safe and efficient access to the new development.

A Collector Road, identified as part of the CRETS (2007 Christchurch, Rolleston and Environs Transportation Study) is proposed at the southern boundary of the site and further supports the integration of the site with the wider transport network. This Collector Road spans across several neighbourhoods and ODP areas on the southern boundary of the township. It is significant in supporting an east-west network function and it is part of an expanded ring road system for Rolleston. Although this Collector Road is envisaged to cater for a large proportion of vehicle movements going through ODP Area 12, it is not a high-speed corridor and is intended foremost to provide direct access to adjoining sites. To this end, it is envisaged that the CRETS Collector Road will interact with the adjacent neighbourhoods, rather than creating severance between them. Its streetscape and speed environment is expected to be similar to that of Lowes Road, which serves an important transport function for the northern portion of Rolleston.

Three connections from the internal Primary Roads integrate the transport network for ODP Area 12 with the East Maddisons Collector Road to the north-east, the CRETS Collector Road to the south and the Dunns Crossing Collector Road to the south-west. The Primary Roads provide essential connections to the wider Rolleston transport network, including specifically to the surrounding Collector Roads and integration with ODP Area 10 to the east. The Primary Road

connection to Dunns Crossings Road, which runs through the centre of the site, links to the proposed CRETS Collector Road. Dunns Crossing Road is to be sealed and upgraded as part of the wider development requirements.

The transport network for ODP Area 12 shall integrate into the pedestrian and cycle network established in adjoining neighbourhoods and the wider township. The Primary and Secondary Roads will provide footpaths and cycle routes, including designated cycle lanes where appropriate. Adequate space must be provided within the tertiary road network for cyclists and to facilitate safe and convenient pedestrian movements. Two walking and cycling links that are a minimum width of 6m are proposed between the Secondary Roads in the north-eastern corner of the development block to achieve the necessary level of connectivity through the subdivision and integration with East Maddisons Road.

The proposed north-south and east-west aligned Secondary Road connections perform similar functions to the Primary Roads, providing discernible and easily navigable access arrangements throughout the site as well as good external links and connections to adjoining neighbourhoods. The alignment and position of the intersections associated with the Secondary Roads primarily support the internal roading network and the mixed density residential development sites, catering less to through vehicle traffic.

The remaining internal roading layout must be able to respond to the possibility that this area may be developed progressively over time. Road alignments must be arranged in such a way that long term interconnectivity is achieved once the block is fully developed. An integrated network of tertiary roads must facilitate the internal distribution of traffic, and if necessary, provide additional access to properties. Any tertiary roads are to adopt a narrow carriageway width to encourage slow speeds and to achieve a residential streetscape. It is anticipated that roads with a current speed limit over 70km/h will be reduced to support urban development by delivering a safe and efficient transport network.

GREEN NETWORK

Seven Neighbourhood Parks are required to be established throughout the 87ha development block. The location of these reserves has been determined based on the amount of reserves established in the wider area and to ensure that an open space is provided within 500m walking radius of their homes.

The Neighbourhood Parks will provide passive recreation opportunities and will each be of a size that reflects both the reserve's purpose and the neighbourhood's character. The alignment of these open spaces along primary routes will create a connected open space network. The Foster Recreation Park provides access to active recreation opportunities.

Where possible, Medium Density Housing is located immediately adjacent to Neighbourhood Parks to compensate for the reduced private open space available for each of the individual allotments, In addition, co-locating green space reserves alongside residential housing support passive surveillance and assist in promoting enhanced safety and security for local residents and people using the green space network.

There is an opportunity to integrate the collection, treatment and disposal of stormwater with open space reserves where appropriate. Pedestrian and cycle paths are required to integrate the road network into the green network, to ensure a high level of connectivity is achieved, and to maximise the utility of the public space.

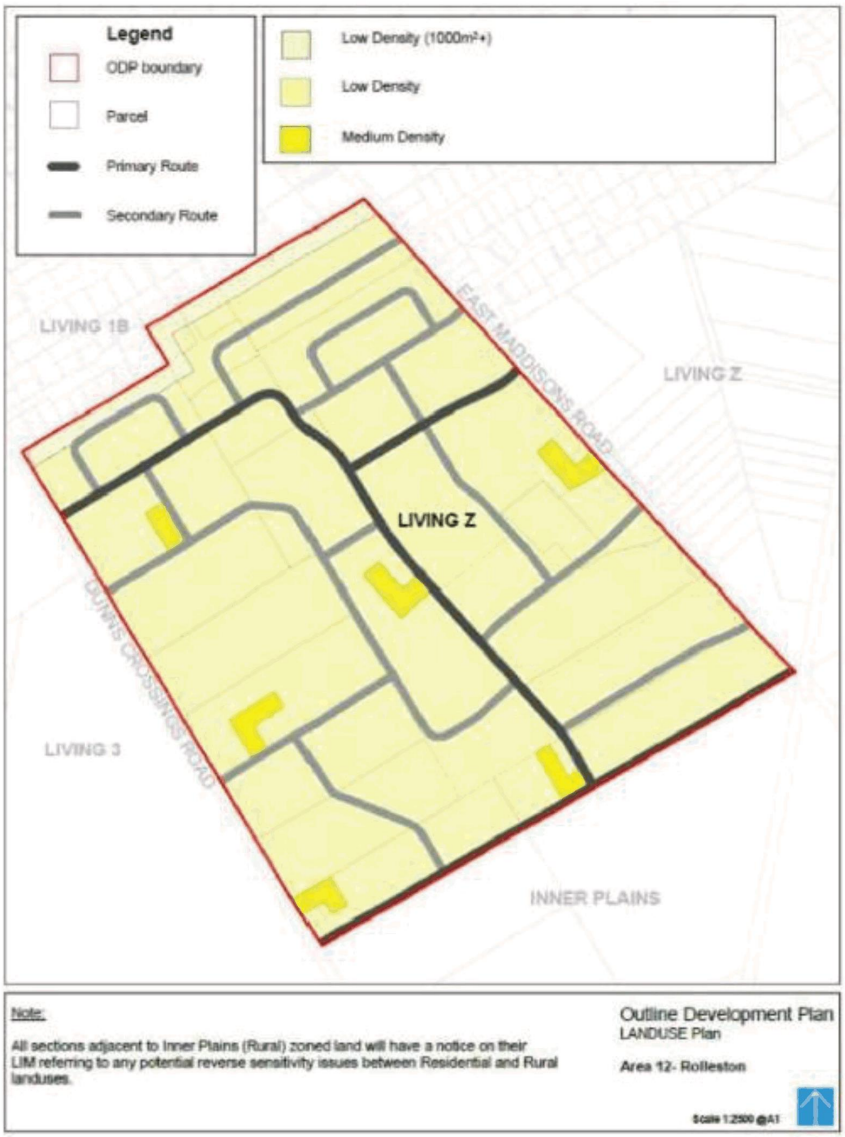
Council's open space requirements cited in the Long Term Plan and Activity Management Plans should be referred to during subdivision design.

BLUE NETWORK

Stormwater -	The underlying soils are relatively free-draining that generally support the discharge of stormwater disposal via infiltration to ground. There are a range of options available for the collection, treatment and disposal of stormwater. Detailed stormwater solutions are to be determined by the developer in collaboration with Council at subdivision stage and in accordance with Environment Canterbury requirements. Systems will be designed to integrate into both the transport and reserve networks where practicable. The public stormwater system will only be required for runoff generated from within the road reserve.
Sewer –	A gravity sewer connection will be required through an extension to the existing sewer network to the boundary of the ODP area. A gravity sewer connection to the new Eastern Selwyn Sewerage Scheme pump station on Selwyn Road will required via a sewer connection through the adjoining Faringdon subdivision.
Water -	The water reticulation will be an extension of the existing Rolleston water supply. If required, an additional bore could be established within the site to assist servicing for the southern development areas in Rolleston in accordance with the upgrades identified for the township.

The provision of infrastructure to service ODP Area 12 shall align with the Council's indicative infrastructure staging plan, unless an alternative arrangement is made by the landowner/developer and approved by Council.


Legend
ODP boundary
Parcel
Primary Route
Secondary Route
Low Density (1000m²+)
Low Density
Medium Density
Pedestrian/Cycleway green link
Neighbourhood Park
Existing water race
LIVING 1B
LIVING Z
LIVING Z
LIVING 3
INNER PLAINS
Note:
All sections adjacent to Inner Plains zoned land will have a notice on their LIM referring to any potential reverse sensitivity issues between Residential and Rural landuses.
Interface treatment includes having larger residential sections along existing Living 1B boundaries.
Outline Development Plan
OVERALL Plan
Area 12- Rolleston


Legend
ODP boundary
Parcel
Primary Route
Secondary Route
Low Density (1000m²+)
Low Density
Medium Density
LIVING 1B
EAST MADDISONS ROAD
LIVING Z
LIVING Z
QUAILS CROSSING ROAD
LIVING 3
INNER PLAINS
Note:
All sections adjacent to Inner Plains (Rural) zoned land will have a notice on their LIM referring to any potential reverse sensitivity issues between Residential and Rural landuses.
Outline Development Plan
LANDUSE Plan
Area 12- Rolleston
Scale 1:2500 @A1


Legend
ODP boundary
Parcel
Primary Route
Secondary Route
Pedestrian/Cycleway
DUNNS CROSSINGS ROAD
CRETS ROAD
Outline Development Plan
TRANSPORT NETWORK Plan
Area 12- Rolleston


Legend
ODP boundary
Parcel
Primary Route
Secondary Route
Green link
Neighbourhood Park
Existing water race
Outline Development Plan
GREEN& BLUE NETWORK Plan
Area 12- Rolleston

Appendix 1 – cont'd

Consultation and landowner signatures and agreement on inclusion of land and transport links in Outline Development Plan Area 12 – Including CRETS Road, primary and secondary roading, cycleways, reserves and extent of Living Z zone to provide continuity between Rolleston ODP areas and Faringdon.

27 March 2014

David Smith
Team Leader Strategy and Policy
Gabi Wolfer
Urban Design planner
Selwyn District Council
P O Box 90
ROLLESTON 7643

ACTION 18 – LAND USE RECOVERY PLAN - Outline Development Plan Area 12b

Dear David Smith and Gabi Wolfer

Thank you very much for your letter dated 17 March 2014 regarding the inclusion of ODP 12b with ODP12a and proposed geotechnical and Preliminary Site Investigation work outlined by the Council. As the seven landowners of ODP12b we jointly support the inclusion of ODP Area 12b as an extension to the Outline Development Plan for Area ODP12 and Action 18 which provides for the identification of priority areas for development and rezoning of the land to Living Z. We agree to the geotechnical investigations proposed by the Council and Preliminary Site Investigations to be undertaken by Tonkin and Taylor. Within the previous Rolleston Structure Plan (RSP 2009) these seven properties sat within SR5 proposed for residential zoned development (stage 2A) from 2017.

We also agree that the Dunns Crossing – Faringdon new collector road and aligned roundabout identified as part of the Christchurch Rolleston & Environs Transport Study (CRETS) is a logical inner boundary for ODP12b. Without the CRETS collector, inner primary and secondary roads shown in Map Area ODP 12a & 12b there is a danger that future development could become much more ad hoc losing an important opportunity now to integrate ODP12a & 12b, with ODP10, PC7, PC8, PC9 and Faringdon, and ultimately with the new Rolleston High School and Foster Recreational Park. Certainly along East Maddisons Road we have already noticed a significant increase in family pedestrian traffic with new neighbourhood connections forming between the new Faringdon and East Maddisons Road communities.

The CRETS collector road linking these areas and ODP 12a & 12b to Faringdon should be seen as an important part of the Council's strategic, RSP and LURP planning process to keep the south east section of Rolleston well integrated and connected. It will become an important alternate transport route supporting the Southern Motorway extension as Road of National Significance and will allow eastern Rolleston residential traffic to continue to move smoothly to towards Selwyn Road and beyond as it does now. We believe the inclusion of ODP12b with ODP12a will greatly assist in safe and efficient transport routes for this area connecting them to the wider areas of the upgraded Springston Rolleston and Selwyn Roads. This is especially important given the growth in areas such as Lincoln (Lincoln Hub), Prebbleton and Hornby.

We appreciate that the final decision on inclusion of ODP12b in the LURP is ultimately the decision of the Minister of Canterbury Earthquake Recovery and we will also be lodging this submission of joint approval with CERA.

In addition to the landowner signatures provided to you on 18 March (attached) the remaining three Dunns Crossing Road landowner signatures are now also provided below.

We look forward to your reply.

Yours sincerely

Angelene HOLTON (03 3477409)
617 East Maddisons Rd

Signed: Angelene Holton

Lot 3 DP 74311 BLK III Leeston, 4.0650 ha

Date: 27 March 2014

MACKIE FAMILY TRUST (for 3/144 Dunns Crossing Rd) (03) 3773956
1095 Dunsandel Hororata Road, R D 2 Leeston

Signed: R J Mackie. E. J. Mackie.

Lot 3 DP 70352 BLK III Leeston SD-Int in R/W Easement DP 72978 Lot 4 DP 70352, 4 ha

Date: 30/03/14

Peter SAVAGE (021 0755397)
130 Dunns Crossing Rd

Signed:

1 DP Lot 70352 BLK III Leeston SD, 4 ha

Date: 28 MAR 14

Lindsay & Judith BLACKMORE (03 3477650)
108 Dunns Crossing Road

Signed: L N Blackmore
J. L. Blackmore

Lot 2 DP 61278 BLK III Leeston SD

Date: 29-3-14
29.3.14

Gabi Wolfer
Urban Designer
Selwyn District Council
ROLLESTON

LAND USE RECOVERY PLAN – L2 OUTLINE DEVELOPMENT PLAN - (OPD12)

Dear Gabi

As landowners of the remaining 400m non-residential frontage of East Maddisons Road (Map 1) we seek to be included with ODP12 (Living Z) and in any discussions the Council enters into on ODP12.

The draft outline plan (L2 ODP) provides significant and logical opportunities for transport, curb and channelling, pedestrian and gravity fed wastewater connectivity for ODP12, ODP10, and the Faringdon Subdivision. It also offers wider community, time saving and safety benefits for PC9, PC7, and PC8 housing developments (including the new primary school) through streamlined primary roads and a major change in the intersection layout at East Maddisons Rd and Goulds Rd. The south-east ODP's and PC areas will benefit from significantly safer transport routes connecting them to the new Rolleston High School, Foster Recreation Park and Selwyn Rolleston Road.

We believe that the inclusion of our land (33.34ha) in ODP12 will assist the Selwyn District Council provide for the future community connectivity of Rolleston and as such we wish to be involved in discussions. It will also show Council's willingness to meet the requirements of LURP Action 48 by providing a supportive regulatory environment for landowners seeking to be involved in the LURP process:

> *Selwyn District Council is directed, pursuant to section 24(1)(c) of the CER Act, to make any changes or variations to objectives, policies and methods in its district plan (in addition to those directed in other actions in this Recovery Plan) that it considers are appropriate to enable and support recovery and rebuilding in accordance with this Recovery Plan. If issues impeding recovery are identified, a request may be made to the Minister for Canterbury Earthquake Recovery to use interventions under the CER Act to make changes to the district plan*

We look forward to you reply.

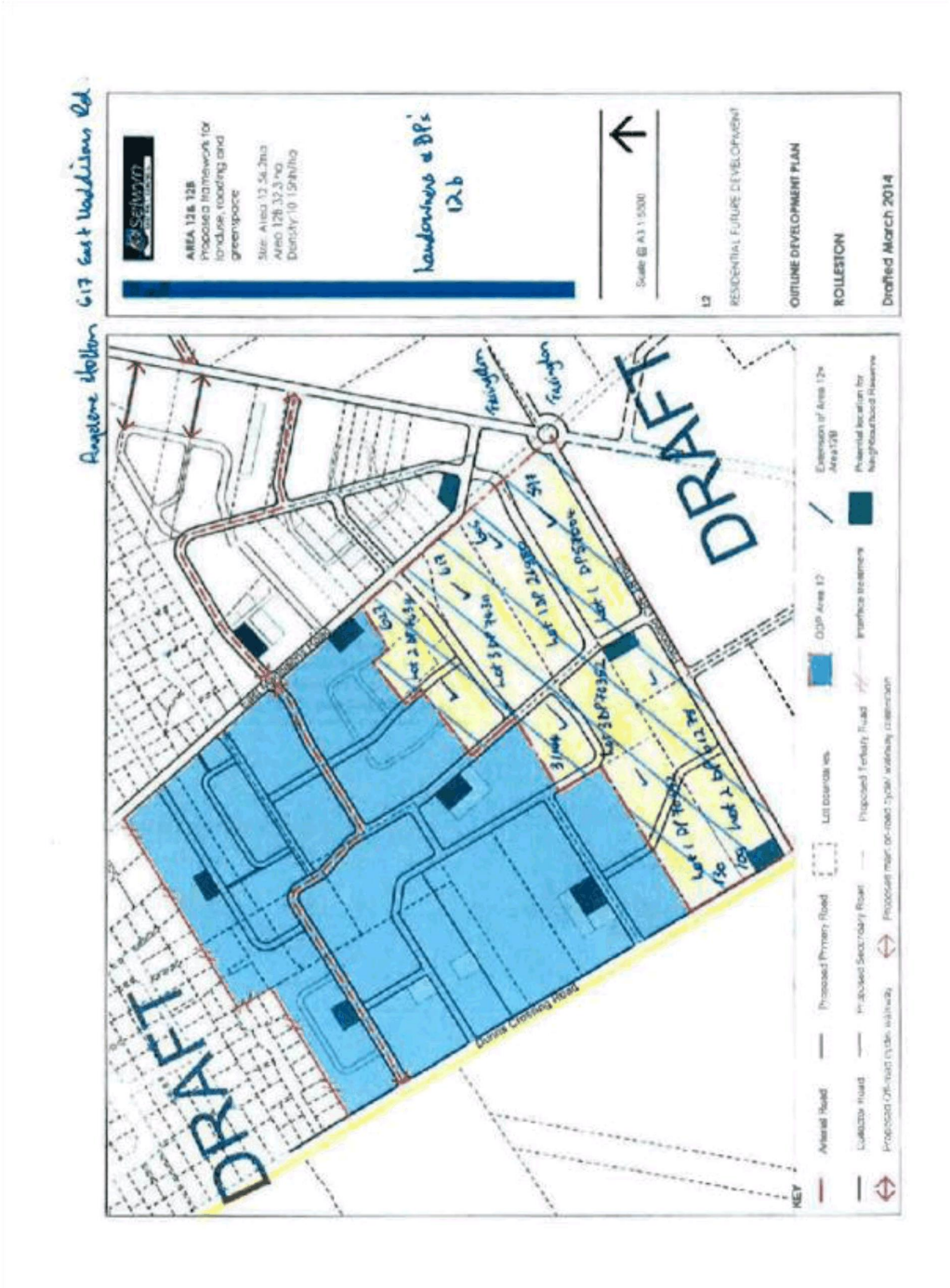
Yours sincerely

Angelene HOLTON
617 East Maddisons Rd
Signed: Angelene Holton
Lot 3 DP 74311 BLK III Leeston, 4.0650 ha
Date: 10 March 2014

Hayley and Mike MOYNIHAN
627 East Maddisons Rd
Signed:
Lot 2 DP 74311 BLK III Leeston, 4.8570 ha
Date: 11/3/14

Louise WILKINSON
605 East Maddisons Rd
Signed: L Wilkinson
Lot 1 DP 26880 BLK III Leeston, 4.0469 ha
Date: 17-03-2014

Malcolm MAIN
597 East Maddisons Rd
Signed: M.R Main
Lot 1 DP 57004 BLK III Leeston, 20.3750 ha
Date: 11/3/14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DRAFT
OUTLINE DEVELOPMENT PLAN
ROLLESTON
Drafted March 2014
RESIDENTIAL FUTURE DEVELOPMENT
KEY

APPENDIX 2 – SDC Support for ODP12B inclusion in Land Use Recover Plan – MAP A

Selwyn DISTRICT COUNCIL

COMMENTS ON LAND USE RECOVERY PLAN REVIEW

To: Land Use Recovery Plan Review
Environment Canterbury
PO Box 345
CHRISTCHURCH 8140
lurp@ecan.govt.nz

From: **SELWYN DISTRICT COUNCIL**

Address for service:
PO Box 90
ROLLESTON 7643
Attention: Jesse Burgess
E: jesse.burgess@selwyn.govt.nz

1. The Selwyn District Council wish to make the following comments on the Land Use Recovery Plan (LURP) Review.
2. These comments relate to Action 18 of the LURP.

Introduction

3. LURP Action 18 directed the Selwyn District Council (SDC) to amend its District Plan to include zoning and outline development plans (ODPs) for six areas around the township of Rolleston. These areas were identified within Chapter 6 of the Regional Policy Statement (RPS) as being suitable for greenfield housing development.
4. The RPS provides a solid policy framework for achieving integrated, connected and attractive living environments across the wider township. However, given this high level framework, the development of the ODPs required further detailed assessment of the resultant residential form and provision of infrastructure.
5. SDC has undertaken an extensive review of infrastructure provision for the new ODP areas in Rolleston, and in particular the provision of wastewater management in accordance with the Council's Long Term Plan. This review has determined that in order for the Council to provide sufficient capacity within its network for ODP Area 12, the sewer main will need to be laid along East Maddisons Road. The reconfiguration of infrastructure has subsequently meant that additional land needs to be included within the Rolleston greenfield urban growth area.

Proposed Amendments

6. SDC therefore seeks to include an additional 31 hectares of land to the greenfield housing development areas, being land bounded by Outline Development Area 12 to the north-west, East Maddison Road to the north-

www.selwyn.govt.nz
Selwyn District Council, 2 Norman Kirk Drive Rolleston /PO Box 90, Rolleston 7643
Tel: 03 347 2800 Fax: 03 347 2799 Email: admin@selwyn.govt.nz

Proposed Action

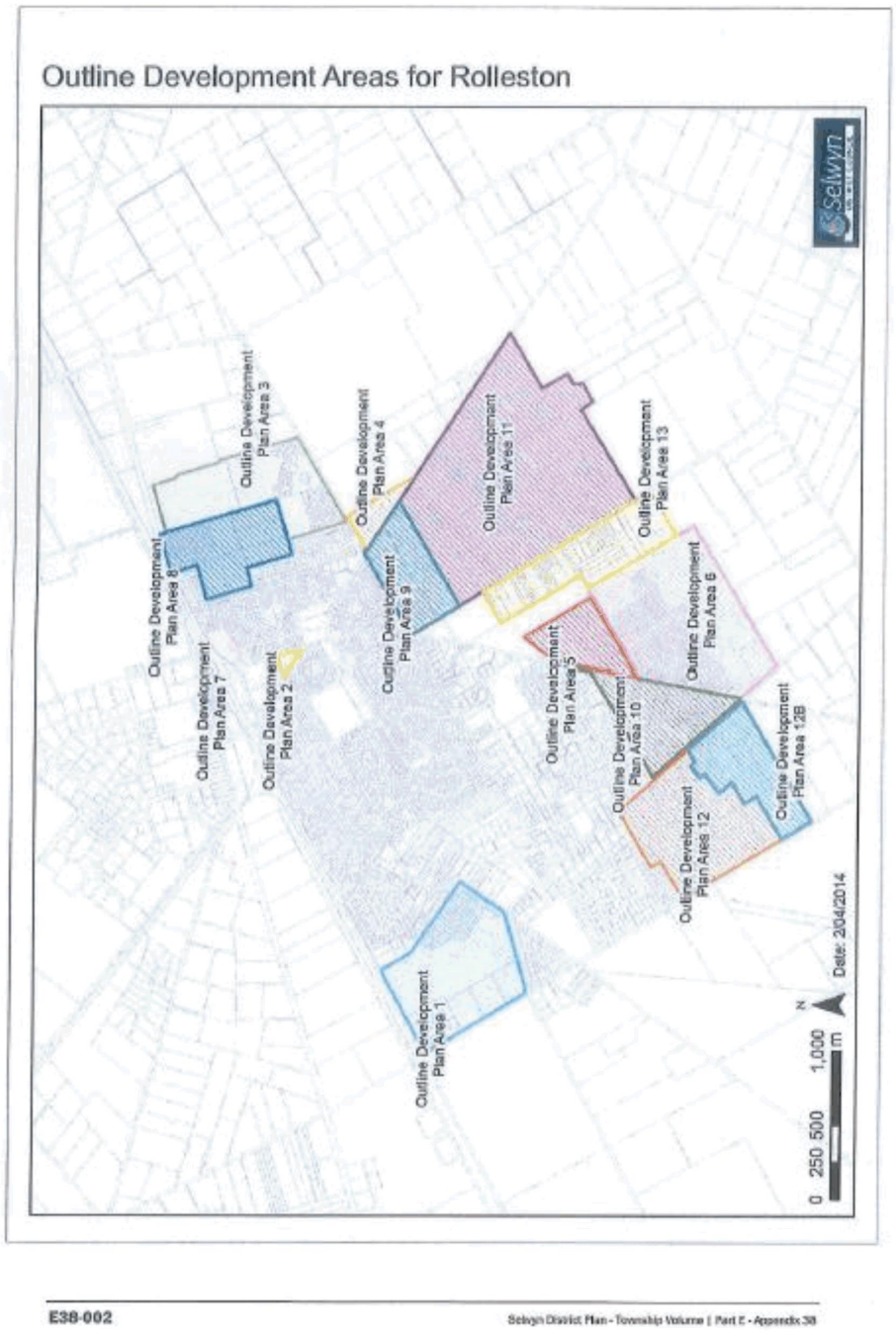
16. SDC proposes that an additional 31 hectares of land, bounded by Dunns Crossing Road, East Maddisons Road and ODP Area 12 is included within the greenfield development areas for Rolleston as ODP Area 12B. The inclusion of this land would require the SDC to amend the District Plan to include zoning and an Outline Development Plan in accordance with Chapter 6 of the RPS to provide for ODP Area 12B.

Conclusion

17. SDC considers that the proposed inclusion of the ODP Area 12B provides for the optimisation of the infrastructure required for the servicing of existing ODP areas and creates an easily definable urban form for the south-western edge of the Rolleston Township. The availability of additional land for greenfield development will also contribute to the supply of dwellings in the Rolleston market, thereby creating additional affordable housing opportunities.

Dated 29 May 2015

David Ward
Chief Executive – Selwyn District Council



E38-002

Selwyn District Plan - Township Volume | Part E - Appendix 38

APPENDIX 3 – LURP Submission July 2013

31 July 2013

Draft Land Use Recovery Plan

Canterbury Earthquake Recovery Authority

Private Bag 4999

Christchurch 8140

Dear Hon Gerry Brownlee

SUBMISSION: LAND USE RECOVERY PLAN FOR GREATER CHRISTCHURCH

I am writing to you to have my property included in the Land Use Recovery Plan (LURP) and Selwyn District Plan. I believe there is very good reason to include my property at 617 East Maddisons Road as part of Outline Development Plan Area 12, and in fact to complete the rezoning of the last 400m of East Maddisons Road between Gould's Road and Lowes Road as residential. It is currently zoned inner plains (see Map 1). I submitted on the LURP in April 2013 and during Plan Change 7. I request inclusion of my property in the LURP. My PC7 submission from 2009 is (http://www.selwyn.govt.nz/__data/assets/pdf_file/0008/26927/S16-Angelene-Holton.pdf).

Details are:

Valuation No. 24055-34600

Location 617 East Maddisons Road

Legal Description LOT 3 DP 74311 BLK III LEESTON SD

New Legal Description, **Certificate of Title** 42D/967

Ward No. 5

Zone 1B

Use 21

Category LI9B

TORAS 111000

Property Area (hectares) 4.0650

Where there is adjacent infrastructure as in the case of my property adjacent to Outline Development Area 12, land owners like myself wishing to develop their properties should be able to

do so. I submit my property (Map 1) should be included within the extent of the LURP Brown and Greenfield Priority Areas for Rolleston (Map 2 – LURP Map A).

Previously Rolleston residents have provided extensive input into the Council approved Rolleston Structure Plan (RSP 2009) which was discarded in preference for discussions between Council and private landowners. I attended several public meetings contributing to that the RSP plan in good faith. My property is at 617 East Maddisons Road and sits between Gould's Road and Lowes Road and under the RSP is within SR5 (MAP 3 & 4). The SR5 area was due for residential development (MAP 3 stage 2A) from 2017 – 2026. In contrast the Greenfield Priority Areas such as ODP 6,9, 11, 13 now identified in LURP Map 1 (e.g. SR7, SR8, SR14) were not scheduled for development 2027-2041 and 2041-2075. I have also been informed by SDC planners that under the LURP there will be no development for my property. This is despite previous consultation under the RSP 2009 and its ***excellent connectivity*** with proposed Greenfields Priority Area directly across the road (ODP 10), existing Zone Z residential (ODP12) at the back boundary and the new Faringdon Subdivision (ODP 6) within 200m at Goulds Road (see Map 2).

The Rolleston Structure Plan (MAP 3 & 4) also included provision of a primary road through the back boundary of my property to unite Dunns Crossing Road with East Maddisons Road. The road would considerably reduce the long distance residents had to travel to either access Lowes Road or Goulds Road thus gaining quicker access to inner Rolleston, Lincoln and Christchurch City via Selwyn Road.

SDC planners indicated that even after 2028 my land would not be needed for development as all the predicted future growth of Rolleston would now be intensified and taken up within existing residential and Greenfield Priority Areas under the LURP. In effect the entire length of East Maddisons Road between Gould's and Lowes Rd will be residential except for 400m of road frontage which will remain inner plains zoning and with no kerb and channelling. The SDC planners at the LURP meeting informed me that a Private Plan Change would be unsuccessful even though my property would soon have excellent connectivity to water and waste infrastructure and was previously indicated for residential development in the Rolleston Structure Plan.

The Council's proposal under the LURP is quite unfair for owners like myself seeking to develop their properties along with the rest of the land owners along on East Maddisons Road. I find it difficult to see how the LURP areas in Rolleston will provide the right drivers to improve housing affordability unless additional land becomes available for development. The SDC is both conservatively estimating the demand for housing in on one hand and restricting the supply of land for development on the

other. It is estimated by landowners on ODP Area 10 that less than 10 of the 22 landowners in this area wish to subdivide their properties. The remainder wish to retain their current lifestyles and will land bank their properties into the future. The SDC planning environment still remains highly restrictive and complex with high development, consenting and compliance costs. While the current SDC proposal may assist the Council to infill existing residential areas over an extended period of time, it is difficult to see how it will improve housing affordability.

I fully support government's moves to increase New Zealand housing affordability. I support reforming the RMA and LGA and suggestions that the government intervene in land allocation processes currently controlled by Councils. I believe that the Councils district and plan change processes are too complex, restrictive and are bureaucratically overburdened contributing to the escalating cost of housing in Christchurch. The current process using Council staff, such as Selwyn District Council, Commissioners or the Environment Court and ODP's is costly and fraught with difficulty for land developers. There is excessive and unnecessary intervention in property development.

I also believe there should be an independent review to determine how Council staff have been able to enter into private agreements resulting in a dramatic change from the Rolleston Structure Plan and agreed planning priorities.

I firmly believe that government should assist Councils to refocus their efforts less on land allocation and more on the providing supporting infrastructure for development for those land owners such as myself wanting to subdivide. For this reason I support a process which is managed independently of Council's. I also believe that there needs to be an urgent overhaul of the RMA and LG Act to refocus Council infrastructure priorities and to accordingly reduce their land allocation powers.

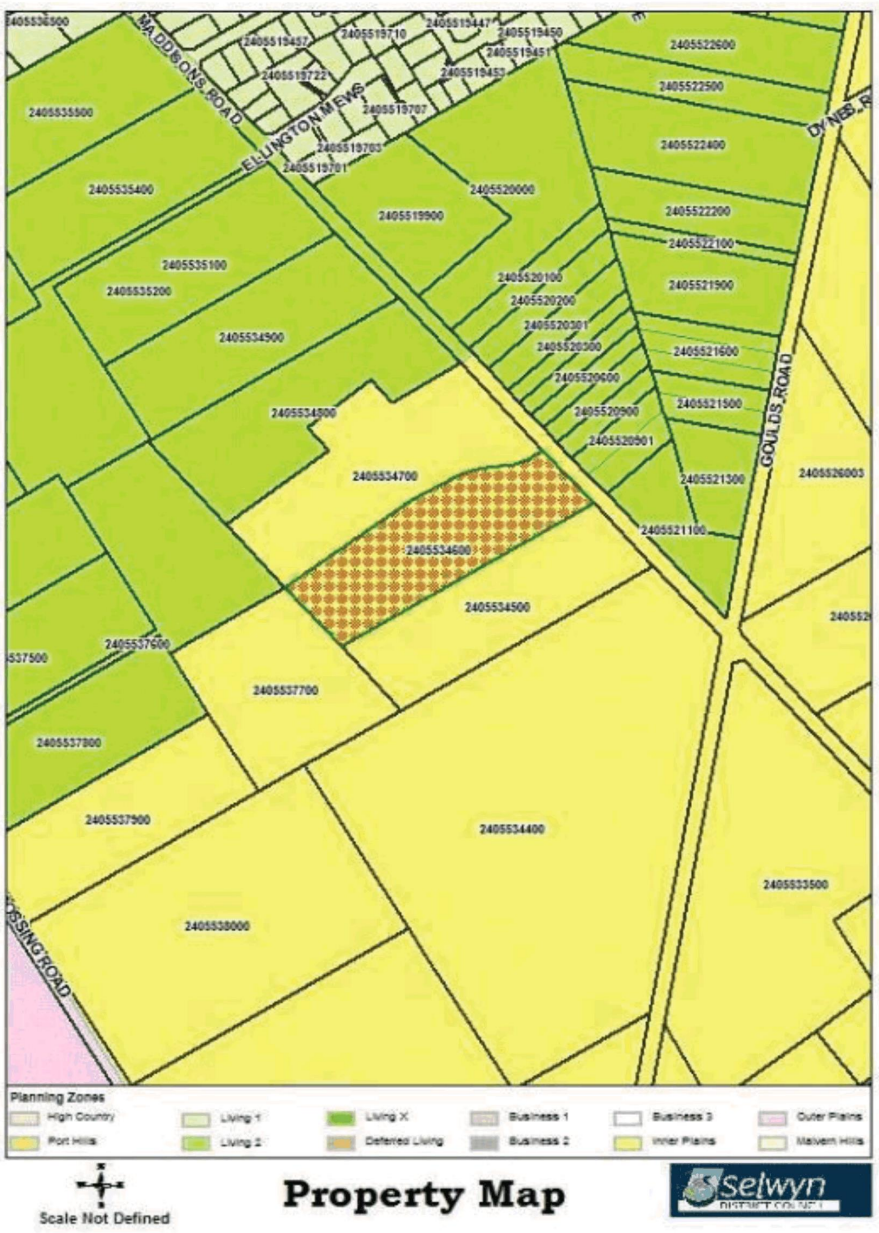
In addition to requesting my property be included in the LURP plan for Rolleston, I also wish to be included in any future consultation on the Land Use Recovery Plan.

Yours sincerely

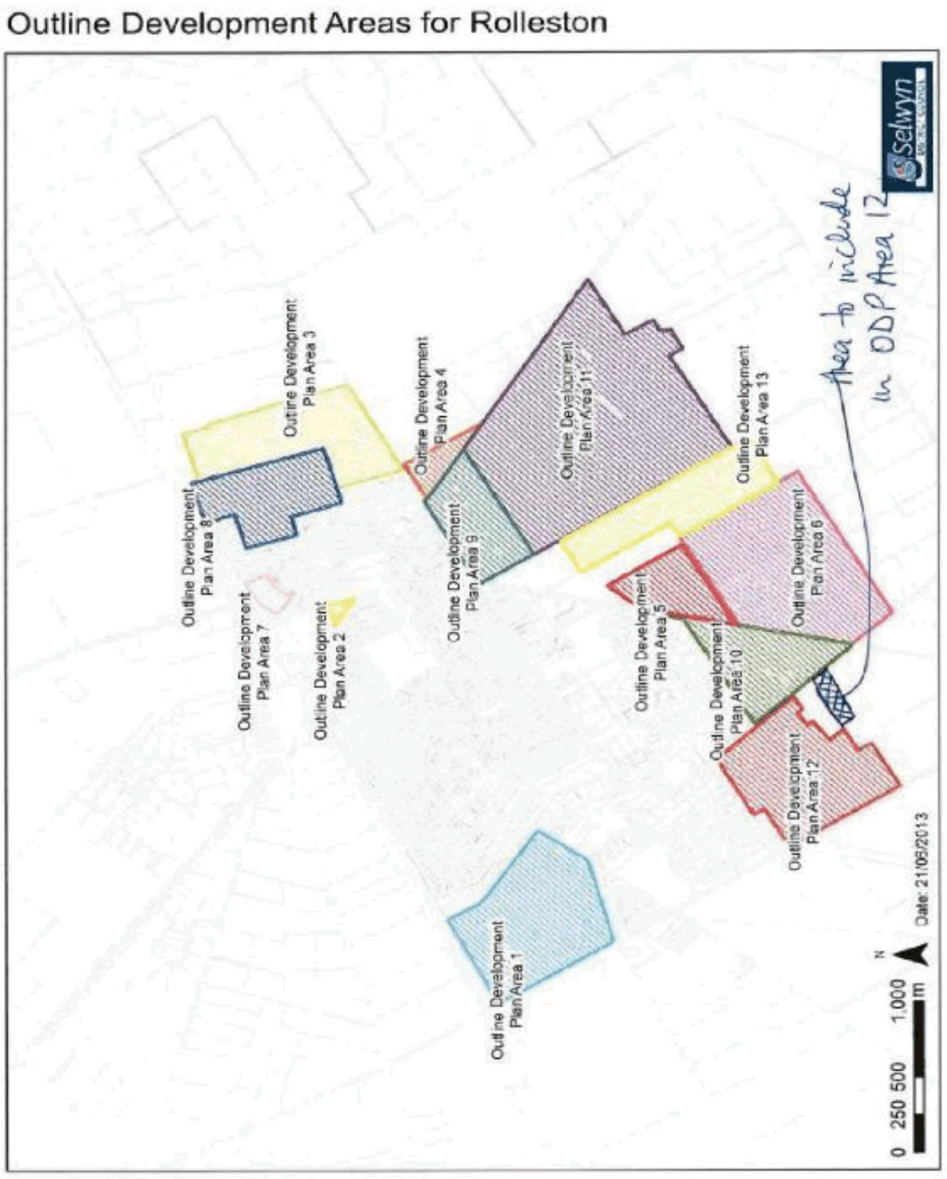


Angelene Holton

Map 1 Property Map



Map 2 Outline Development Plan for Rolleston



Map 3 Position of property within Rolleston Structure Plan

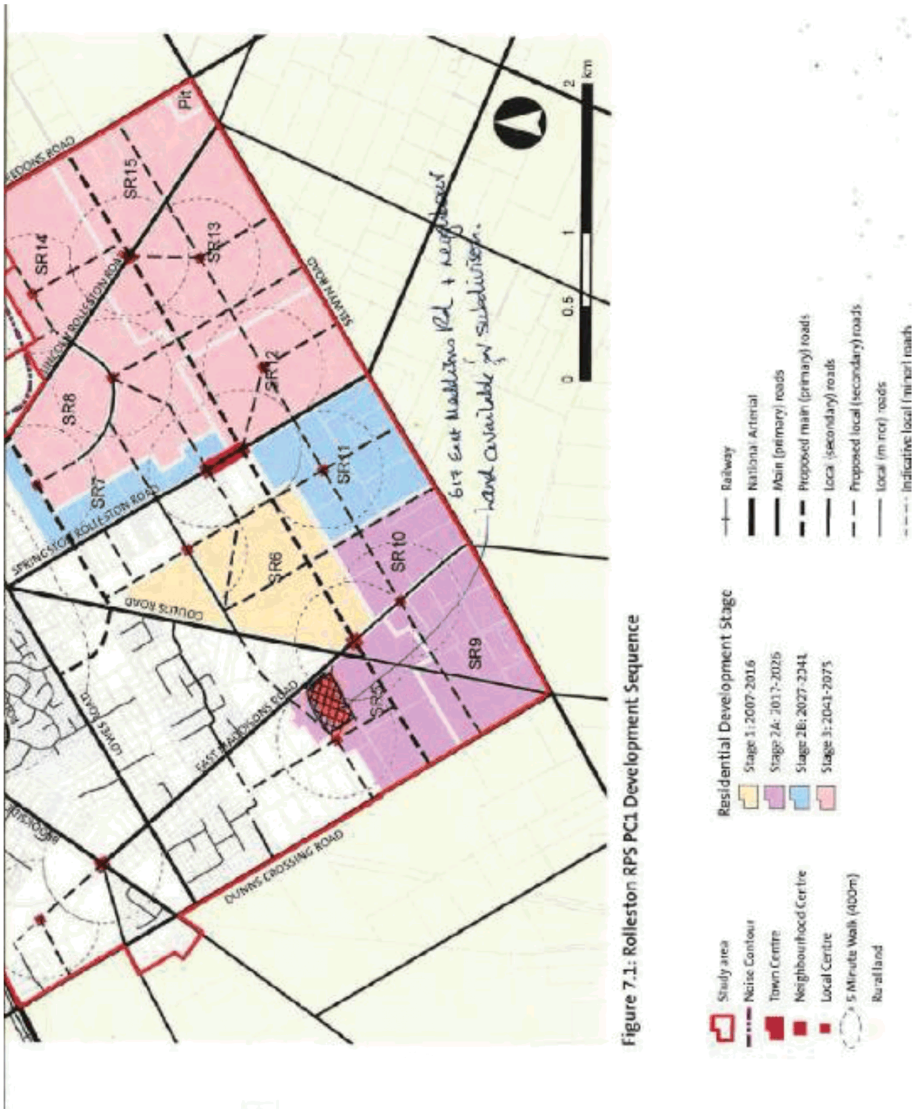
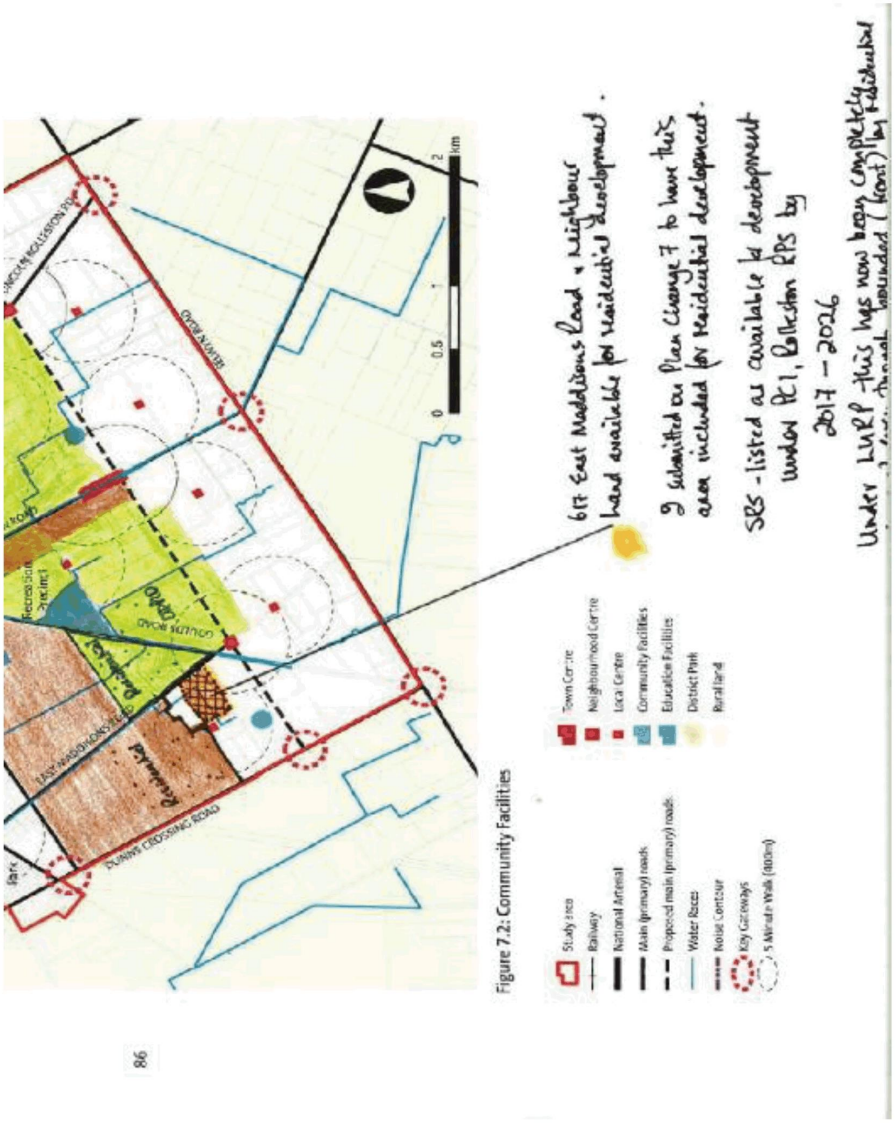


Figure 7.1: Rolleston RPS PC1 Development Sequence

Map 4 Greenfields Priority Area PC7



Our Space 2018-2048 - Submitters Hearing Schedule for FRIDAY 1 March

Please note that there may be some changes to this schedule as commitments change and some unplanned rescheduling may be required. We apologise in advance for any inconvenience this may cause.

Schedule Updated 17 February 2019

Day 5 [Friday 1 March] Christchurch City Council - Committee Room 1			
Time	**Submitter Number**	**Submitter/Presenter**	**On behalf of…**
9.00	#58	Dr Anna Stevenson	Canterbury District Health Board
9.20	#74	David Griffiths	Christchurch City Council
9.40			
10.00	#54	Ngaire Button	Grassmere Residents
AMT [10.20]			
10.40	#73	Jeremy Phillips	Rolleston Industrial Holdings Ltd
11.00	#51	Kim McCracken / Prue Steven	Suburban Estates Ltd, Doncaster Developments Ltd and Sovereign Palms Ltd
11.20			
11.40			
12.00	#82	Helen Broughton	

Submission No: 058

Canterbury
District Health Board
Te Poari Hauora ō Waitaha

Submission on Our Space 2018-2048: Greater Christchurch Settlement Pattern Update

To: Greater Christchurch Partnership
ourspace@greaterchristchurch.org.nz

Submitter: Canterbury District Health Board

Attn: Sandy Brinsdon
Community and Public Health
C/- Canterbury District Health Board
PO Box 1475
Christchurch 8140

Proposal: Greater Christchurch Settlement Pattern Update

SUBMISSION ON OUR SPACE

Details of submitter

1. Canterbury District Health Board (CDHB).

2. The submitter is responsible for promoting the reduction of adverse environmental effects on the health of people and communities and to improve, promote and protect their health pursuant to the New Zealand Public Health and Disability Act 2000 and the Health Act 1956. These statutory obligations are the responsibility of the Ministry of Health and, in the Canterbury District, are carried out under contract by Community and Public Health under Crown funding agreements on behalf of the Canterbury District Health Board.

Details of submission

3. We welcome the opportunity to comment on Our Space 2018-2048. The future health of our populations is not just reliant on hospitals, but on a responsive environment where all sectors work collaboratively.

4. While health care services are an important determinant of health, health is also influenced by a wide range of factors beyond the health sector. Health care services manage disease and trauma and are an important determinant of health outcomes. However health creation and wellbeing (overall quality of life) is influenced by a wide range of factors beyond the health sector.

5. These influences can be described as the conditions in which people are born, grow, live, work and age, and are impacted by environmental, social and behavioural factors. They are often referred to as the 'social determinants of health[1]. The diagram[2] below shows how the various influences on health are complex and interlinked.

6. The most effective way to maximise people's wellbeing is to take these factors into account as early as possible during decision making and strategy development. Initiatives to improve health outcomes and overall quality of life must involve

[1] *Public Health Advisory Committee. 2004. The Health of People and Communities. A Way Forward: Public Policy and the Economic Determinants of Health. Public Health Advisory Committee: Wellington.*
[2] Barton, H and Grant, M. (2006) A health map for the local human habitat. The Journal of the Royal Society for the Promotion of Health 126 (6), pp 252-253. http://www.bne.uwe.ac.uk/who/healthmap/default.asp

organisations and groups beyond the health sector, such as local government if they are to have a reasonable impact[3].

3 McGinni s JM, Williams-Russo P, Knickman JR. 2002. The case for more active policy attention to health promotion. Health Affairs, 21(2): 78 - 93.

General Comments

7. The CDHB has been a partner in the development of this document and has fed into to a number of stages as well as facilitating an Integrated Planning Workshop on the document on 26 November. The comments below are a summary of much of the discussion we have already inputted into and we consider would further improve health outcomes for the community.

Specific comments

Housing Growth

8. Housing growth: We somewhat agree with the proposed approach. We continue to have some concerns about how to ensure any greenfield development enables communities to have easy access to core amenities and nearby public services. This enables the building of communities rather than just homes. We also support any efforts to ensure there are employment opportunities close to where people live. We support the 10 minute community diagram in the document but cannot see where or how it is being specifically identified for implementation.

9. Housing types: We agree with the approach. We fully support a range of housing types and housing being close to existing suburban centres. We would like to see a reflection of the need for other planning documents to take into consideration the wide range of living experiences people will want in the future and also encourage accessible and sustainable options. Housing should be of good quality, affordable, accessible and in a location that builds community. We would also encourage strong incentivising of building using universal design principles to ensure homes are suitable for all ages and stages. There are examples of how other councils have done this with developers, one example we are aware of is a Council in the North Island that allows development on an additional 5% of sections for those who build Lifemark standard houses. We can provide more information if this is helpful.

Business Growth

10. Commercial development framework: We agree with this approach. We support the focus of these around existing centres and encourage this to include a focus on employment opportunities for people who live in the area. We encourage the placement of public services within these commercial developments.

11. Industrial businesses: Agree with this approach here but do not want to encourage any unnecessary greenfields development.

Growth needs

12. Capacity Assessment evidence base: Agree with the assessments. While we believe the assessment is robust we also believe that information on where people want to live, the type of housing they wish to live in, the way they want their neighbourhoods and communities to interact and function needs to be included alongside this analysis. For example links between urban design and transport and health show mutual benefits. Having mechanisms for shared decision making and listening to communities about what they want and need is important to be built in across planning documents at the earliest stage.

Transport and other infrastructure

13. Densities around key centres: Agree with this approach. This is key to the success of Our Space and also needs to include how neighbourhoods are formed and supported to ensure social connectedness and a sense of inclusion. The document can do this by making a clear statement as to the importance of building strong connected neighbourhoods using the 10 minute neighbourhood as a strong example of this. Balancing transport so that multi modal options are possible is important from a rapid transit option through to supporting strong infrastructure for active and public transport that is safe, efficient and accessible for all. Multi modal transport needs to ensure easy connection between key activity centres and the central city. An equity approach might consider ensuring the delivery of active and public transport infrastructure is prioritised in areas where it is currently lacking. Specific populations may require additional resourcing to achieve this such as in the Eastern areas of Christchurch if population demand is not sufficient to make the case for additional infrastructure.

14. Broader infrastructure planning: Agree with this approach. We strongly support this and would encourage the infrastructure planning to be clearly articulated in this document including how other plans or strategies might contribute. Communities have good knowledge themselves about how they use and draw on infrastructure so linking into this knowledge would be one way to integrate this planning. Another option that could be signalled is spaces and places for park and ride options so that these can exist around existing infrastructure.

15. Final comments: Our Space does not deal strongly with natural capacity and resource sustainability. We suggest there could be stronger links to carbon zero plans as one example.

Summary

16. CDHB acknowledges that it has been a partner in developing this document and the comments above are designed to summarise feedback, much of which has already been discussed with the Partnership. Where it is useful and valuable we can provide further evidence to support our points ahead of the hearings.

Conclusion

17. The CDHB does wish to be heard in support of this submission.

18. Thank you for the opportunity to submit on Our space

Person making the submission



Anna Stevenson
Public Health Physician

Date: 30/11/2018

Contact details

Sandy Brinsdon
For and on behalf of
Community and Public Health
C/- Canterbury District Health Board
PO Box 1475
Christchurch 8140

P +64 3 364 1777
F +64 3 379 6488

Sandy.brinsdon@cdhb.health.nz

Submission No: 074

Christchurch City Council

30 November 2018

Our SPACE Consultation
Greater Christchurch Partnership
PO Box 73012
Christchurch 8154

Dear Sir / Madam,

Re: Draft Our Space 2018-2048 Greater Christchurch Settlement Pattern Update

This is a submission on Our Space 2018-2048 Greater Christchurch Settlement Pattern Update ('*Our Space*') on behalf of the staff of the Council, which also reflects the views of the City's Community Boards that have been expressed to staff.

Overview

Christchurch City Council supports *Our Space* being released for public consultation, and the partnership approach taken to develop it. *Our Space* broadly supports the Council's Strategic Priorities of:

- Creating a vibrant, prosperous and sustainable 21st century city;
- Increasing active, public and shared transport opportunities;
- Taking a lead on climate change; and
- Enabling active citizenship and connected communities.
-

The Council supports the collaborative approach that has been taken by the Greater Christchurch Partnership (GCP) and the fusing of the legislative requirements to produce a future development strategy as outlined in the National Policy Statement on Urban Development Capacity (NPS-UDC) with a review of the land use planning framework for Greater Christchurch, which has been previously developed as the Greater Christchurch Urban Development Strategy (UDS).

Why the Council is submitting

As a partner in the GCP Christchurch City Council has worked collaboratively for over a decade on planning and managing urban growth and development in Greater Christchurch. The relationship with our partners has been fundamentally important to the Council's work, and the strength and value of the Partnership has been evident in a period that has witnessed unprecedented change and challenges in the City.

Going forward, the concluding of the City's regeneration and the move towards firmly establishing Christchurch as New Zealand's second city will be achieved through a combination of maintaining the strong relationship with our partners, and ensuring the Council fulfils its core role as enabler of the City's Vision of Christchurch being a City of opportunity for all. The Council believes that the fulfilment of this Vision represents the optimal long-term strategy not only for the City, but also for Greater Christchurch. Achieving this Vision, and the Strategic Priorities which underpin it, thus does require a specific focus on the City, notably the Central City. No successful and sustainable urban area exists without a strong core.

Whilst *Our Space* recognises and supports the focus on the Central City, and the Council acknowledges the support of the GCP in this respect, the Council considers there are opportunities for *Our Space* to go further in its advocacy for the City than it does at present. These views have also been reflected in the Council's

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Christchurch, 8011
PO Box 73010, Christchurch, 8154

consultation with Community Boards across the City. The Council considers that a balanced debate on the content of *Our Space* should give greater consideration to these opportunities.

Most of these views of Council have been expressed to our partners during the preparation of *Our Space*, and in part informed the production of the Greater Christchurch Settlement Pattern Update – Options Assessment Report, a public document which supports *Our Space*. Beyond the Options Assessment Report, the Council still considers that existing and emerging evidence is giving rise to potential options of which *Our Space* can, and should, take account. The Council also notes some matters in the Update that appear contradictory or unclear, and on which clarification needs to be sought.

Thus, to ensure all pertinent matters are made publicly available at this draft Update stage; to ensure the views of Council staff and the Community Boards[1] of Christchurch are aligned in one document for administrative efficiency; and to ensure all matters can be given due consideration by the Hearings Panel to be established and held in early 2019, the Council has lodged this submission.

Matters for Consideration

- **Inconsistencies in the draft Update**
  The Council notes that there is a misalignment between the figures used for housing capacity over the medium term and the need for intervention. This is particularly notable for the Selwyn District Council figures provided in Table 3 (page 13) of *Our Space*. Table 3 indicates sufficient supply over the medium term yet *Our Space* repeatedly refers to a 'potential shortfall in capacity'. From the facts presented in *Our Space* there is no shortfall over the medium term in Selwyn, and thus very little evidence for intervention via the additional zoning of greenfield land;

- **Updating proposed policy interventions to reflect emerging data**
  Through receipt and publication of significant updates to Waimakariri and Selwyn District Council housing sufficiency figures in October 2018 (which will be used to inform subsequent changes to *Our Space*), the GCP has acknowledged the ongoing dynamic nature of evidence base building inherent in the *Our Space* process. Given this approach, the Council notes the most recent consenting data and population estimates suggest an ability for the City to provide for a greater proportion of demand, and thus is seeking for this evidence to form part of the ongoing iterative process. In the medium term (2018-2028) demand will be apportioned between the districts based on the projections, i.e. Option C in *Our Space*. This results in 53% of the new houses in Christchurch City over the next ten years, and the remaining 47% of new houses in the surrounding districts. Beyond 2028 demand is apportioned as per the targets in the UDS that 70% of new households in Greater Christchurch will be in Christchurch City. Current statistics indicate approximately 60% of households are being built in Christchurch City, suggesting that the hybrid approach may be under-estimating the City's ability to meet growth demands;

[1] This staff submission has been prepared without the direct input of Christchurch City Council's elected members, having been authorised through the delegations available to the Council's Chief Executive. Elected members retain the ultimate rights of determination on the Council's decision to adopt or reject *Our Space* after the document has been assessed by the Hearings Panel. Elected members can and have inputted indirectly as members of Community Boards that have provided inputs to this submission. To ensure Council's proposed representative on the Greater Christchurch Partnership's Hearing Panel (Councillor Sara Templeton) has clear separation from the content of this submission for the purposes of transparency, Cllr Templeton has not been involved in any Community Board inputs to this submission.

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- **Sequencing of development**
  The NPS-UDC anticipates that there will be sequencing, with Policy PC13 stating: *The future development strategy shall: a) identify the broad location, timing and sequencing of future development capacity over the long term in future urban environments and intensification opportunities within existing urban environments*. The Council considers Our Space does not fully sequence development to ensure the efficient use of infrastructure. The housing targets in the document give an indication of the amount of additional development in each time period. The purpose of this is stated as: *'…represent the development capacity that each council will seek to enable through their relevant planning processes and mechanisms' (Our Space,* page 12*)*. However these targets are minimums and does not prevent additional development capacity being provided in excess of the targets. If additional development capacity is provided this could have the effect of reapportioning where growth occurs and could potentially mean that demand exceeds the infrastructure capacity that is being planned for, and reduces the efficient use of infrastructure;

- **Intensification in townships and increase densities in greenfield areas and FUDAs**
  The Council's engagement with Community Boards regarding *Our Space* has indicated a broad level of support for intensification of Greater Christchurch's urban areas, noting that greater densities – achieved through seeking a range of housing types around key centres – can increase accessibility to employment and services by walking, cycling and public transport that aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. The city's neighbourhoods are intensifying with some areas exceeding the housing density targets set under the Canterbury Regional Policy Statement. Ensuring quality builds and neighbourhood amenity with this urban change, together with providing better opportunities for community engagement in development processes, is an on-going priority for the Council. Whilst it is the Council's view that matters of building quality and neighbourhood amenity are appropriately dealt with within District Plans, it considers a strong and consistent direction on minimum density yields is required at the regional level and certainly within Greater Christchurch given the close proximity of its urban areas. More specifically, the communities of Christchurch have indicated they can see no clear justification for development in the Districts being set at 10 households per hectare, when nothing more substantive than an administrative boundary dictating a significantly different rate of 15 households per hectare in the City.

  In response to the above, the Council is seeking to ensure the opportunity offered by the NPS-UDC to develop a co-ordinated strategic approach to sub-regional growth is fulfilled. At present the Council holds the view that an over-reliance on subsequent planning mechanisms for achieving objectives would constitute a failure to seize this opportunity. Notably, the Council considers the reliance on local planning instruments (e.g. District Plan Reviews) to achieve matters of a strategic nature (such as intensification targets) is a fundamentally flawed approach. Christchurch City Council has implemented challenging targets for intensification of existing and future growth areas, and is presently working with local communities and the development community to address the matters arising from these processes. The Council considers that, in the interests of sustainable land use and transport planning, and in terms of engaging Greater Christchurch communities in a fair and coherent manner, stronger strategic direction is needed in *Our Space* to catalyse an immediate review of intensification and an increase in densities for greenfield and future urban development areas (FUDAs) in Waimakariri and Selwyn;

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PO Box 73010, Christchurch, 8154

- **Factoring in rural capacity**
  The Council notes there is a risk the housing shortfall figures for Waimakariri and Selwyn may be being artificially inflated because rural demand but not rural supply was included in the sufficiency figures. The Council had sought this be noted in *Our Space*, as it was in earlier iterations, however the consultation draft does not specifically mention this matter. In terms of ensuring maximum accuracy in the housing sufficiency figures the Council considers further investigation is required prior to the progression of a finalised version of *Our Space*;

- **Reviewing business sufficiency**
  The Council notes the business capacity assessment calculations in *Our Space* have not been updated to take account of the agreed use of the 'hybrid' policy intervention, even in its current single option form (hybrid initiated in 2028). The Council considers the draft *Our Space* document does not publically clarify that the projections, whilst unchanged for the first 10 years, are consequently misleading in the longer term (2028-2048). Investigations with independent economic modellers has confirmed that use of the hybrid approach has implications for the validity of the business capacity assessment. As well as for user clarity, for statutory compliance with the NPS-UDC the Council considers it is imperative the business capacity assessment is updated to reflect the hybrid approach (and any other potential variations of the hybrid approach). The Council believes there is little value in producing a 30 year development strategy if consideration beyond year 10 is informed by inadequate evidence;

- **Addressing social and affordable housing**
  The Council acknowledges that *Our Space* provides a good framework for further actions in Figure 13 (page 20), outlining a range of further action plan work-streams related to the delivery of social and affordable housing in Greater Christchurch. The Council considers Our Space is a suitable platform for outlining more detail and potential partner agreement to initiating these actions. Firm commitments to introducing changes to existing planning provisions could be proposed in order to address insufficient capacity at low to middle price points. There are mechanisms Our Space could be more specifically advocating, such as planning zones and rules to encourage smaller lot sizes and/or multi-unit dwellings, including in appropriate greenfield locations, which can support the provision of housing choice and encourage new housing that is more reflective of projected demand.

Summary

The Christchurch City Council supports the general thrust and intent of *Our Space*. The document builds upon the settlement pattern reflected in the UDS, and the Council supports the core principles of *Our Space*, including the agreed objective of ensuring future development occurs within the existing Projected Infrastructure Boundary (PIB). However, the Council does not consider *Our Space* fully achieves its role as a mechanism for strategic co-ordination across the various partners in the GCP, which in turn ensures it does not provide sufficient substantive intent from the Councils partners to achieve the integrated and management urban development patterns outlined in Figure 3 of *Our Space*.

The Council wishes to be heard in support of its submission.

Civic Offices, 53 Hereford Street,
Christchurch, 8011
PO Box 73010, Christchurch, 8154

Yours faithfully



Brendan Anstiss
General Manager Strategy and Transformation
Christchurch City Council

Contact details:

David Griffiths
Head of Planning & Strategic Transport
Christchurch City Council
Civic Offices, 53 Hereford Street, Christchurch
PO Box 73012, Christchurch 8154
Phone: 03 941 8999
Email: david.griffiths@ccc.govt.nz

Submission No: 054		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Ngaire	
Last name	Button	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Christchurch	
Postcode	[redacted]	
I am completing this submission	On behalf of a group or organisation 10	Grassmere Residents Collective voice for the development of the Cranford fringe
Hearings		
Do you wish to speak to the hearings panel?	I wish to speak at the hearings	
Phone number	[redacted]	
Preferred location to be heard	Christchurch City	
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat disagree	
Comment	We should develop land in the City first to create density needed for vibrancy. We should also take care not to build houses on land ideally suited for growing food.	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat agree	
Comment		
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment	Partnership with Government to finance families into homes like the old family benefit capitalization scheme. Housing corporation mortgages at a cheaper rate than banks.	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Agree	
Comment		
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*		
Agree/disagree		
Comment	Not sure at this stage	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely		

changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Somewhat agree
Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat agree
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	We agree but we think that the development contributions policy should be used more extensively to build infrastructure.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	Development contributions are the Councils mechanism to share the burden of infrastructure cost. In the case of the Cranford basin this has not been implemented and we are left unable to develop. It is important to remove barriers to development within the City boundary to allow for maximized use before spreading out further than the current City limit.
Attachments	

Submission No: 073

Submission Form

Greater Christchurch Partnership
Te Tira Tū Tahi
One Group, Standing Together

HAVE YOUR SAY BY 30 NOVEMBER 2018

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

How to make a submission

Online: Make a submission using the online submission form at www.greaterchristchurch.org.nz/ourspace

Email: ourspace@greaterchristchurch.org.nz

Post: Our Space consultation, Greater Christchurch Partnership, PO Box 73012, Christchurch 8154

Hand deliver: Civic Offices, 53 Hereford Street

SUBMITTER DETAILS

Name: Rolleston Industrial Holdings Limited (RIHL)

Address: c/ Novo Group Limited
PO Box 365, CHCH 8013

Email:

I am completing this submission: [ ] For myself [Y] On behalf of a group or organisation

If you are representing a group or organisation, how many people do you represent? 1

HEARINGS

Hearings are planned for February 2019.

Do you wish to speak to the hearings panel?

[Y] Yes, I wish to speak at the hearings [ ] No, I do not wish to speak at the hearings

If you wish to speak at the hearings, please indicate your preferred location to be heard and provide a contact number.

Preferred location: [Y] Christchurch City [ ] Rangiora [ ] Rolleston

Contact number:

QUESTIONS

The questions below may help you structure your submission in relation to the various aspects covered in **Our Space 2018-2048**. Section 5.7 of **Our Space** briefly outlines some alternative options considered when preparing this document. You can make submission points under each question and/or other and more general comments under question 9.

Housing growth

Question 1

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree or disagree with this approach and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

Question 2

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

Question 3

Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home.

What elements should be included in this action plan?

Business growth

Question 4

Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why? What further measures would support such development?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

Question 5

The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses.

Do you agree or disagree this is sufficient and in the right location and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

See question 6 response below

Growth needs

Question 6

The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.

Do you agree or disagree with our evidence base and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☒ Do not agree

RIHL consider that the Capacity Assessment informing the industrial land demand assumptions for Rolleston fails to account for the space intensive and low employee occupancy nature of industrial buildings and activities at I Zone and I Port. Industrial activity at Rolleston includes a high proportion of low-intensity sites/activities that among other things, reflects its servicing of the rural sector and two inland ports. Accordingly, a capacity assessment in this location that accounts for employee numbers and other typical demographic projections does not accurately reflect industrial land capacity.

Transport and other infrastructure

Question 7

Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors.

Do you agree or disagree with this approach and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

Question 8

Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.

Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

Other

Question 9

What other points do you wish to make to inform the final **Our Space 2018-2048: Greater Christchurch Settlement Pattern Update**?

Submissions are public information

We require your contact details as part of your submission — it also means we can keep you updated throughout the project. Your submission, name and contact details are given to decision-makers to help them make their decision.

Submissions, identifying submitter names only, will be made available online. If requested, submissions, names and contact details may be made available to the public, as required by the Local Government Official Information and Meetings Act 1987.

If you consider there are compelling reasons why your name and/or feedback should be kept confidential please outline this in your submission.

Submission No: 051

SUBMISSION ON OUR SPACE 2018-2048

CONSULTATION DOCUMENT FOR THE REVIEW OF THE GREATER CHRISTCHURCH SETTLEMENT PATTERN – NOVEMBER 2018

To:	Our SPACE Consultation Greater Christchurch Partnership PO Box 73012 Christchurch 8154 Email: ourspace@greaterchristchurch.org.nz
Submission by:	Suburban Estates Limited Doncaster Developments Limited Sovereign Palms Ltd
Contact Details:	C/o McCracken and Associates PO Box 2551 Christchurch
Hearing of Submissions:	The submitters do wish to be heard in support of their submissions.

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1. **Introduction**

Suburban Estates Ltd have been in existence since 1957. Our company is one of the leading and oldest land development companies in the Greater Christchurch Area and have developed over 8000 sections in that time. We are currently developing in all 3 districts in and around Christchurch. We believe we develop land in a controlled and responsible manner and do not actively pursue the development of land if it does not fit within the parameters of sound environmental planning.

Suburban Estates Ltd (SEL), Doncaster Development Ltd (DLL) and Sovereign Palms Limited (SPL) support the need for a review of the land use planning framework for Greater Christchurch.

SEL, DDL and SPL have long been important players in the development of land in Greater Christchurch for housing and related land uses. Since the early 1990's the companies have been involved in land development, and they intend continuing this activity in the future. This experience has given them a sound basis for their opinions and land development proposals and underpins this submission. They have specific interests (and development proposals) for residential development at both Rangiora and Kaiapoi and in the case of SEL in Christchurch and Prebbleton.

This submission is in two parts. Firstly a general submission on some aspects of the proposed Update that in the view of the submitters will work against the ability of the Councils to produce a future development strategy which will deliver sufficient, feasible development capacity to support future housing and business growth. Secondly site specific submissions in relation to land at north-west Rangiora, north-east Kaiapoi and south-west Prebbleton (Refer Appendices attached).

2. General

2.1 National Policy Statement on Urban Development Capacity

PC13 of the National Policy Statement requires that a future development strategy be prepared to identify the broad location, timing and sequencing of future development capacity over the long term in future urban environments and intensification opportunities within existing urban environments (at para a).

The Update is not an RMA document, and is not required to be prepared in accordance with its provisions (in terms of its content and matters to be considered). It will nevertheless guide future changes to the CRPS and ultimately the district plans for each of Waimakariri, Selwyn District and the City Council. In that context, the RMA requires that relevant provisions of a National Policy Statement "be given effect to" by those RMA instruments. Accordingly, the Update should provide a framework within which the NPSUDC can be "given effect to". An approach to the provision of development capacity that is not consistent with PC13 (and which is arguably contrary to it) will not facilitate that outcome.

Current market demand reveals a clear preference for development within adjoining Selwyn and Waimakariri Districts. This is due to a number of actions likely to continue during the medium term, if not longer. The lifestyle preferences within the districts in comparison to urban living (particularly within the Central City) are quite distinct. The NPSUDC requires that the Councils provide for feasible development in locations where people want to live, and does not support the directive approach evident in the 'allocation' of households; in fact, that approach is inconsistent with PC13, if not contrary to it.

The targets for housing development capacity between Waimakariri, Selwyn and the City over the medium term (2018-2028) is said to be based upon a transitional approach to a change in the market and peoples preferences toward Central City and Suburban Centre locations within the Christchurch City. However, if the market response is slower than anticipated by this apportionment, there will be insufficient supply of developable land within the districts to meet the market demand.

The NPSUDC does not support the directive or coercive approach to the provision of feasible development capacity evident in the Update, which otherwise acknowledges the "slightly lower" share of growth within the City than envisaged initially by the UDS, with a higher share in the districts. The Update also acknowledges that this is due to market preferences. It is risky to take the approach that limiting opportunities within the districts will be met by opportunities within the Central City. The Councils' reliance upon a change in market behaviour within the medium term comes with some considerable risk that the NPSUDC policies will not be given effect to.

2.2 Projected Infrastructure Boundary or Urban Limits

The submitters oppose cadastrally defined, property boundary specific Proposed Infrastructure Boundary/Urban Limit lines, in a regional level strategy and in the Canterbury Regional Policy Statement, which are used to define areas which will be available for housing and other urban development. This method is in conflict with the NPS-UDC, referred to in paragraph 2.4 of the Update, which requires the "future development strategy" to identify the broad location, timing and sequencing of future development capacity in new urban environments and intensification opportunities within existing urban environments.

These PIB/UL lines have an inappropriate level of precision in a regional strategy providing an overview of future development within Greater Christchurch. The lines are both unnecessary and unhelpful. They add an inflexible additional layer to the consenting process faced by potential land developers. Land development involves multiple consent processes and layers of site investigations involving many different agencies and circumstances that are often unpredictable and subject to change. Urban Limit lines, defined at a regional level, may be unhelpful in the negotiations between developers, Councils and service supply authorities, and in achieving well managed and integrated urban growth.

In addition, the three Councils have made great progress with integrated planning for the utility systems that they are responsible for, and related funding, since the first Urban Limit lines were introduced into the Regional Planning Scheme several decades ago. The Councils are in the best position to judge whether service network extensions are feasible and desirable, in negotiation with developers and applicants. The development process needs flexibility. The process of three-yearly reviews followed by a change to the CRPS is the opposite of flexibility. The PIB/Urban Limit lines as currently prescribed are likely in some places to inhibit efficient, economic land development, and cannot be justified by a need to protect and manage the coordination of infrastructure with land development.

The Submitters ask that the Proposed Infrastructure Boundary/Urban Limit lines be removed from the Update, and from the CRPS and other planning documents.

2.3 Housing Targets and Higher Residential Density

The submitters believe that the approach adopted in preparing the Update is over directive. There is too much reliance on hoping for a future change in consumer preference to higher density housing and the redevelopment of existing urban sites rather than planning to meet the preferences of the housing market. The Update acknowledges (Section 3, Sufficiency and Sections 5 and 6) a likely housing capacity shortfall, at least in parts of Greater Christchurch. Given the reliance on a shift to higher densities it is difficult to see the Update being able to meet the requirements

of the NPS-UDC. ("Demonstrating that there will be sufficient, feasible development capacity over the medium and long term." See section 2.4).

In this context, of probable insufficiency of supply of developable land and a household allocation model based on uncertain predictions, the inclusion of minimum targets for housing development capacity for each council, and a reliance on a move to higher density housing (which probably won't eventuate), the application of "targets" is likely to significantly under provide the development capacity that will be required.

Not all currently zoned land which CCC are relying on to be developed, will be developed. Zoned land only gets developed if a land owner does not want it to remain in its current use. Many people chose not to sell their land to developers. Also, several areas of CCC existing zoned land (including some in Redwood & Halswell) will remain undeveloped because they are TC3 and as such cannot be developed without very expensive (and usually uneconomic) geotechnical remediation.

The concept of "targets" assumes that strategic growth management is an allocative process for sharing out the predicted future households. That is the wrong approach; the goal should be to ensure adequate provision is made in all parts of the housing market. The Update should respond to the demand for housing, not try to direct it. Residential land development is a complex and dynamic process. The housing market and buyer preferences are hard to predict and slow to change and Statutory Plan provisions that attempt to force a move to higher densities of housing are likely to be resisted, or developments that would otherwise proceed may not eventuate.

SEL and other developers including Mike Greer Ltd are currently experiencing resistance to the CCC requirement of a minimum 15 lots per hectare in greenfield subdivisions. SEL predicted this at the UDS hearings but no one listened. Developers have since then embraced the 15/ha rule (because they had to) and it is apparent that many of the outcomes are poor with houses too close together. CCC seem to be unaware that many people are moving to Selwyn and Waimakairiri Districts to be away from the minimum requirement of 15/ha.

The submitters ask that the Update be amended to increase the amount of readily developable land that can be made available for development, that deferred status or staging be removed from land identified for development; and that a move to higher densities of housing be supported and facilitated but not required or directed through statutory plans. They also ask that the CRPS be changed as a matter of urgency to give effect to these requests, that the predictions and assumptions about urban growth be reviewed over the next three years, and that the patterns of development and numbers of lots created be monitored so that a future review can be soundly based.

3. Site Specific Submissions

3.1 Arlington Park Development Northwest Rangiora

Doncaster Developments are the owner of approximately 7.8 hectares of land situated at the northern end of Lehmans Road on the north-west edge of Rangiora (Refer Appendix 4). The land is on the east side of Lehmans Road, south of the Rangiora racecourse and north-west of a line of electricity transmission lines. The land is zoned for rural-residential development at a permitted density of approximately one house per 5000 square metres (Res 4A zone in the Waimakariri District Plan). It is also subject to the north-west Rangiora Outline Development Plan (District Planning Map 155). Doncaster Developments are also the developer of some of the adjacent residential land in north-west Rangiora, which includes an area of medium density and townhouse development, preschool, church and a small shopping centre.

Since early 2013 Doncaster Developments have developed a proposal to develop the subject land for housing. The development would include a mix of housing styles and densities and the development would be controlled and coordinated under an Outline Development Plan. This proposed development has been unable to proceed because the land is outside the Urban Limits set out in Map A of the CRPS. The submitters believe that the position of the Urban Limit line, excluding this land is an historical anomaly because of the rural-residential zoning and the related CRPS policies on rural-residential. However in all other respects the land is conveniently located and well suited for residential development. This submission is that the Urban Limit line is in the wrong place. This is supported by the following factors:

- The land is physically well situated to develop for housing and can be serviced. Road locations, siting limitations and servicing are provided for in the Outline Development Plan. There are no unusual infrastructure issues.

- The land is close to amenities (preschool, church) and the new shopping centre (Sandown/Huntingdon), and its development would complement recent residential developments on adjacent properties and road and reserve connections.

- The land is within 200m of the proposed public transport stop/route (Huntingdon Drive),

- The land is already zoned for low density residential development (Residential 4A),

- The land is suitable for housing and can accommodate between 120-140 residential units.

- Within the Rangiora context the land represents one of the few areas where ground conditions are geotechnically good, the land links with or is close to the popular west Rangiora growth area and can deliver home and section packages at reasonable cost.

The submitters ask that the Update be amended to include this property within the Proposed Infrastructure Boundary/Urban Limit line, (if those provisions remain) and that Map A of the CRPS be amended accordingly.

3.2 Northeast Kaiapoi

Sovereign Palms Limited have an interest in a block of land comprising approximately 26ha on the north-east edge of Kaiapoi (refer Appendix 2 and 3, yellow shaded area). It adjoins residential land recently developed by SEL. The land is within the Proposed Infrastructure Boundary/Urban Limit line but is shown as Future Development Area in Figure 16 of the Update. It is understood that the development of this land is required to be deferred to a later stage of development. SEL seeks the support of the Councils to bring forward the development date for this land so that sections can be made available to the Kaiapoi market in an economic and planned sequence to follow the developments already completed in the area.

The land is physically well suited for residential development, services connections and road links are available from the Sovereign Lakes subdivision adjoining and the land is not affected by the air noise contour. As the immediately adjacent final stage for Sovereign Lakes has only just completed, there seems little point delaying the next stage any longer. Any delays would create construction disturbance to the new home owners in that last stage of Sovereign Lakes. The public interst would not be served by delaying the start of this next stage of development.

SEL has closely monitored sales of sections in Sovereign Palms and Sovereign Lakes at this north end of Kaiapoi. They have found that purchasers prefer this location and relatively large sections. Purchasers have told SEL that they do not want to be close to a large amount of 500m^2 or smaller sections. SEL also think that purchasers at Sovereign Palms prefer there to Pegasus or Woodend because those towns are just a little further away from Christchurch. Kaiapoi is great community with great facilities, and there is a great community feel about it internally within the subdivision. SEL have the ability to develop at least a further 150 lots on this land, immediately to the east of Sovereign Lakes (see attached plans).

The submitters ask that the Update be amended to show the land at north-east Kaiapoi now shown as "Future Development Area" in figure 16 be changed to

"Greenfield Priority Areas – Residential"; and that the CRPS be changed so that Map A is also changed, to the same effect.

3.3 Southwest Prebbleton

SEL have developed 200 lots in Sterling Park, Prebbleton. They are currently completing stage 10 (21 lots) and then that will be all that is available in the current Living Z zone. There is potential for growth to the west, infrastructure is not difficult, road accesses from Sterling Park were required by SDC to be created and ground conditions are gravels (TC1) which are not that good for farming. Selwyn District Council have considered this land but never told us "why not". See attached Appendix 5 which shows an area in red of approximately 35 hectares. The western half of this area could be "deferred" in accordance with demand.

Thank you for your consideration of these submissions. SEL, DDL and SPL would be prepared to join with other submitters who have similar concerns, and would be prepared to meet with Council Officers to discuss possible outcomes should that be useful in resolving these matters.

Yours sincerely,

K P McCracken
Director

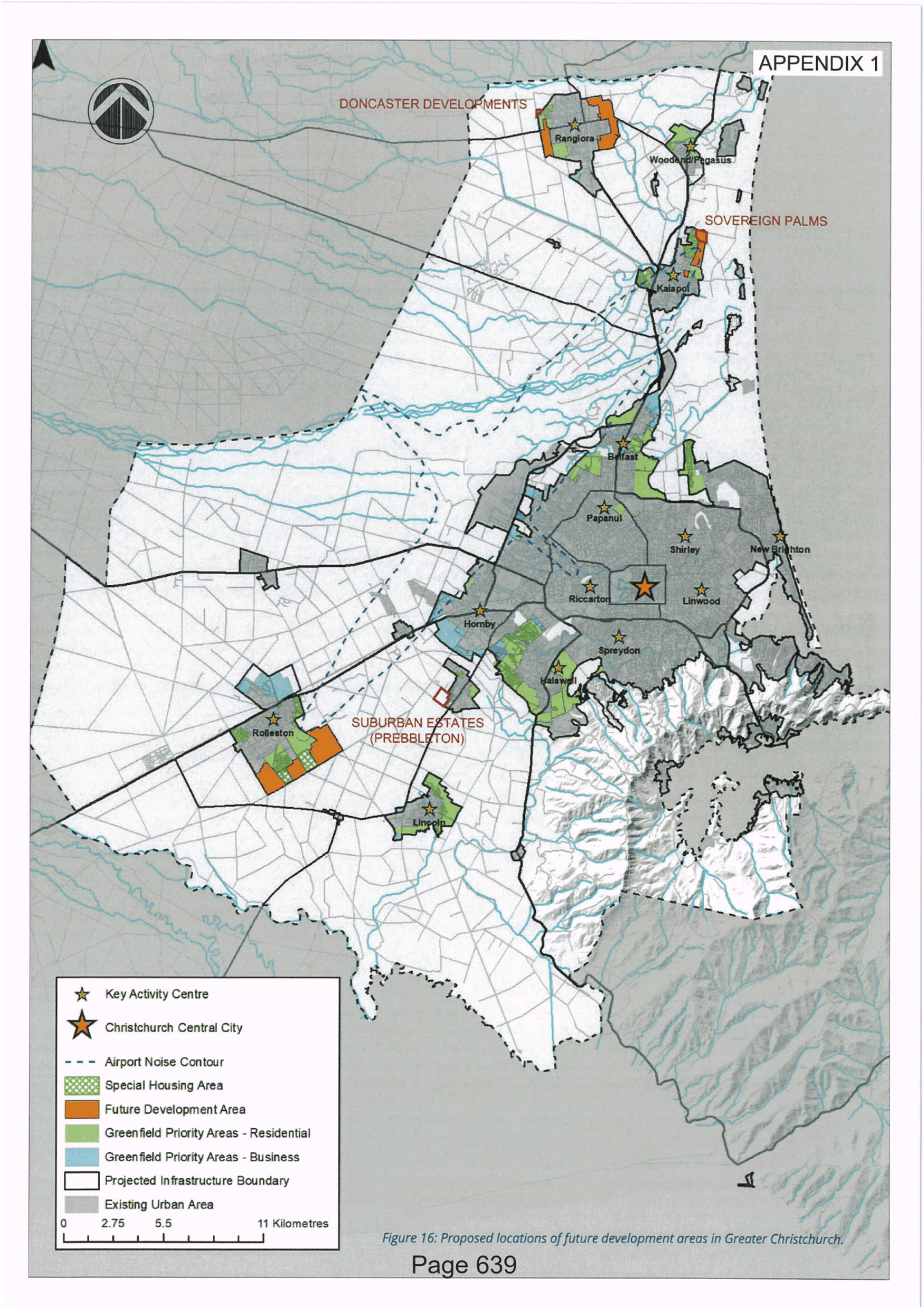
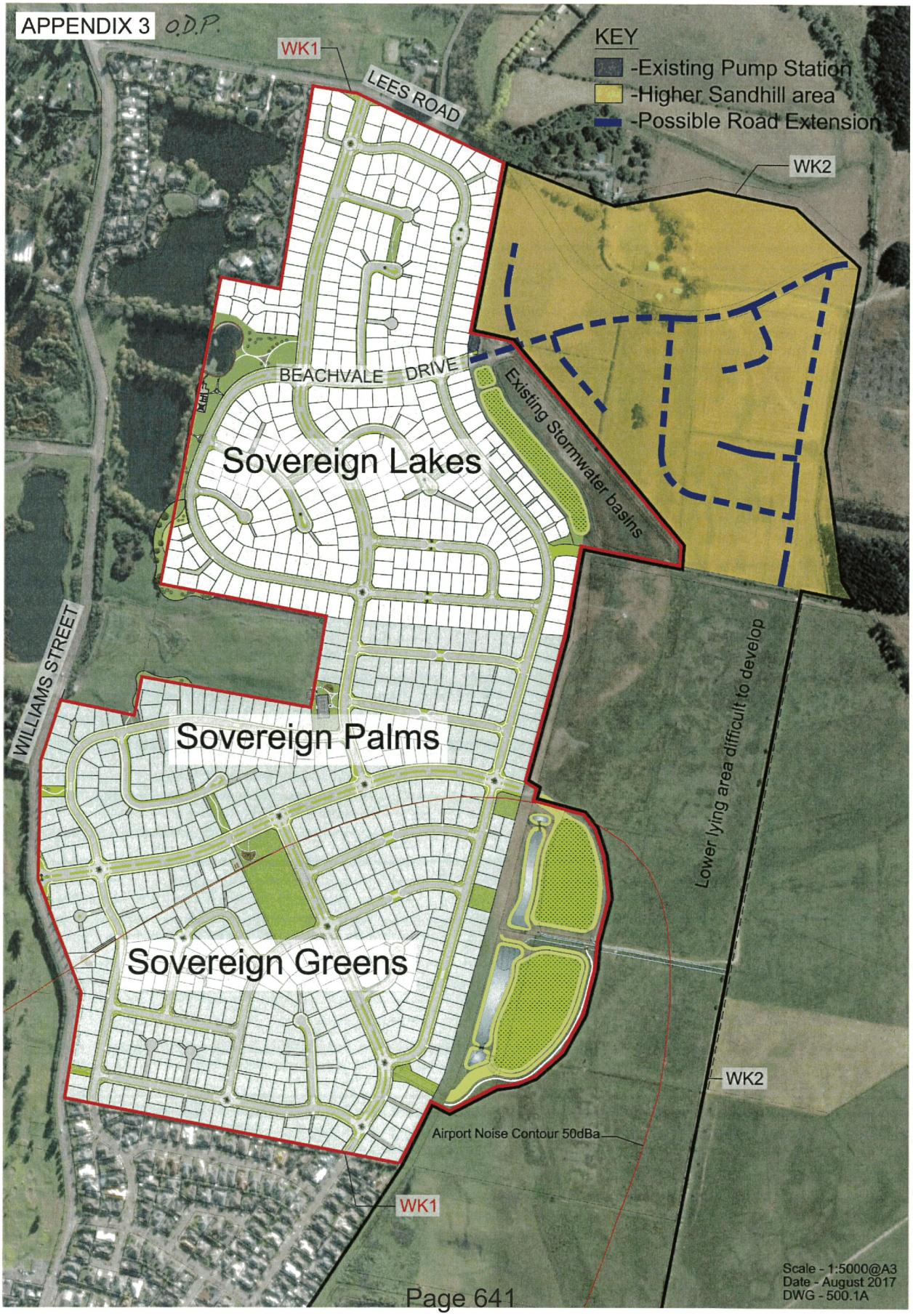
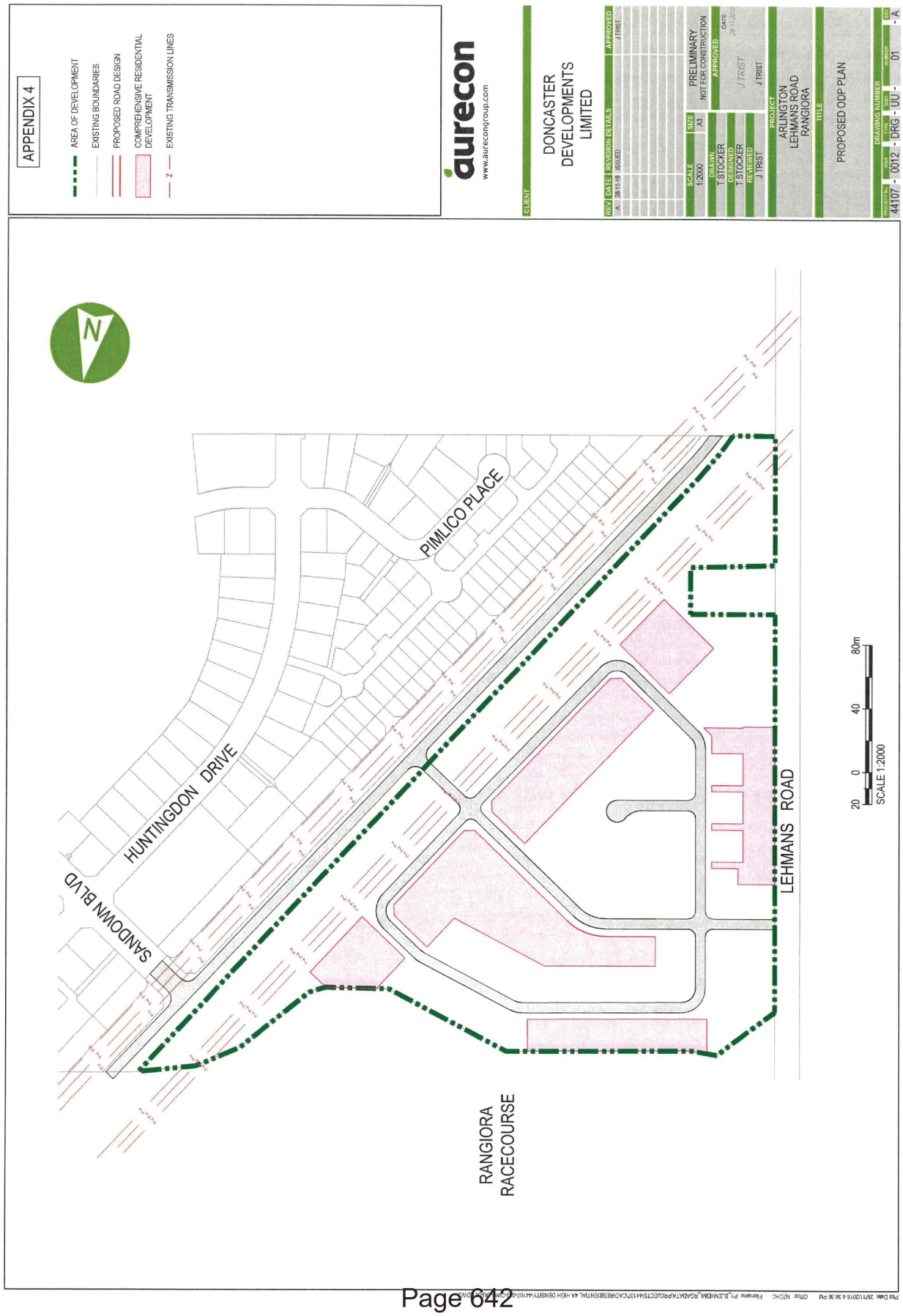


Figure 16: Proposed locations of future development areas in Greater Christchurch.

Page 639

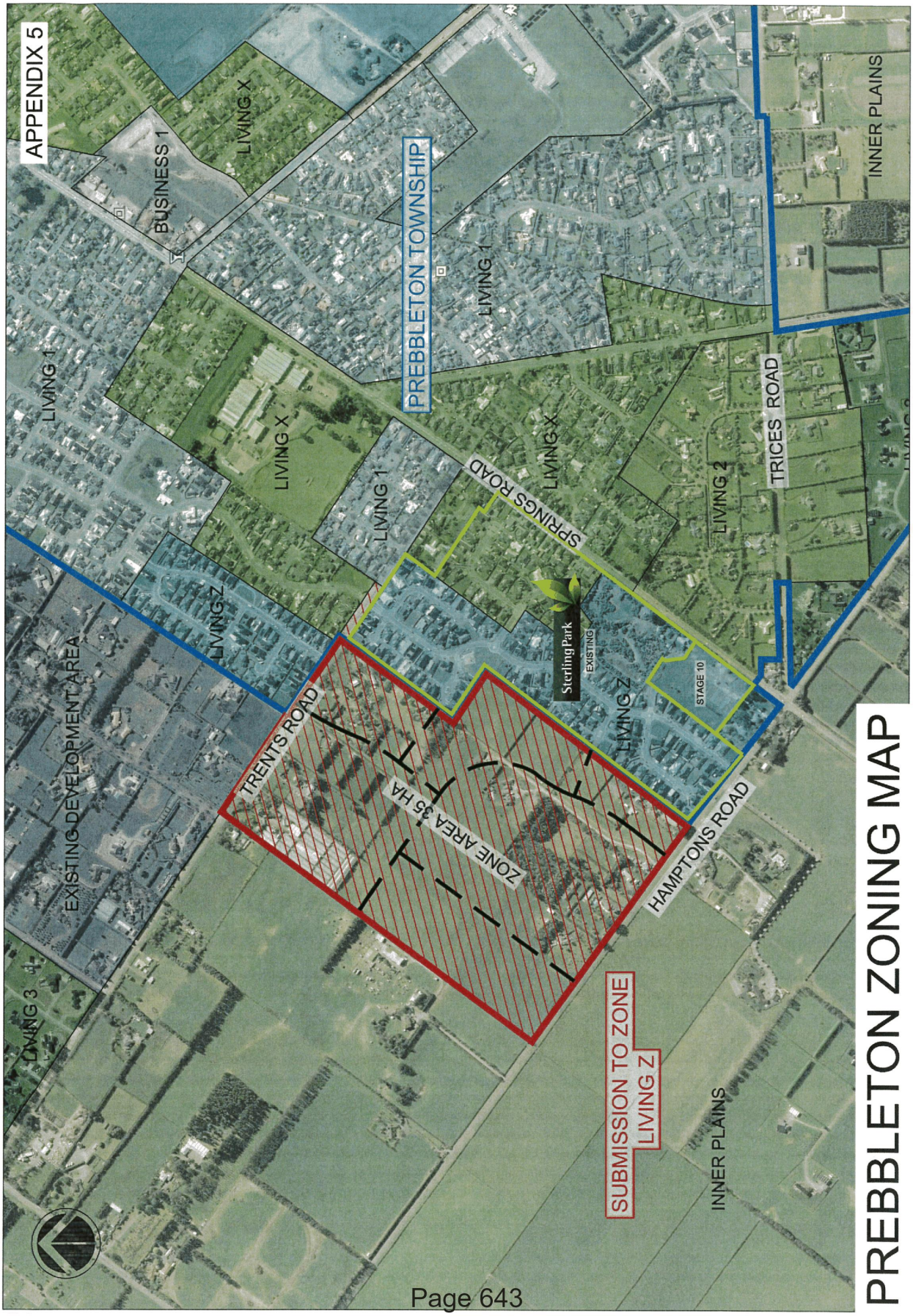

APPENDIX 2
1
Wakeman Block
SOVEREIGN Palms
Ryan Block
50 dBA
Kaiapoi


APPENDIX 3
O.D.P.
KEY
-Existing Pump Station
-Higher Sandhill area
-Possible Road Extension
WK1
LEES ROAD
WK2
BEACHVALE DRIVE
Existing Stormwater basins
Sovereign Lakes
WILLIAMS STREET
Sovereign Palms
Lower lying area difficult to develop
Sovereign Greens
WK2
Airport Noise Contour 50dBa
WK1
Scale - 1:5000@A3
Date - August 2017
DWG - 500.1A



Attachment E Item 4

Attachment E Item 4



Submission No: 082

I wish to make the following comments. Please note I have indicated concerns and would like to speak to the hearing.
At the hearing I hope to have more specific information and figures.

I am making this submission as an individual. However I was a Christchurch City Councillor from 2001 -2013, the Council appointee on the Greater Christchurch Urban Development group until 2010 and am currently Deputy Chairperson of the Halswell,Hornby,Riccarton Community Board. In addition in the post Eathquake Council I went on a study tour to Melbourne to look at how Melbourne had developed its city. The Halswell,Hornby,Riccarton Board has the experience of rapid planned growth in Halswell and intensification In Riccarton.

1. I am concerned we are embarking on this path when the same issues were before the Independent Hearings Panel in 2015. Many hours were spent before the panel and in mediation and local communities should not be having to embark on this process so soon after the Hearings Panel met and decided the Christchurch District Plan. The Hearings Panel looked at growth projections and the current need for housing In Christchurch. There were differing views - a planning consultant for CERA was pushing for further land to be made available , while I and others had figures showing the housing market had reached an equilibrium.

2. Growth projections more than ten years out are merely projections. I note you have adopted the medium growth projections. However It could be that the lower growth projection is the more accurate. I suggest figures for both the medium growth and low growth be used.

3. In the table on Page 11 , the authors project that in 2048 , 71% of housing demand in the city will be met by private rentals. This ownership rate falls far below current trends. While home ownership rates are declining , it does not seem realistic to see private rentals at 71% of the market in Christchurch,particularly as Selwyn and Waimakairiri have ownership rates of 33% and 36 % respectively.One cannot predict the actions of future governments- some of whom will intervene in the market to ensure home ownership remains a cornerstone of NZ society. Our current government is intervening strongly.

4. There seems to be sufficient housing allocation for Christchurch City. Yet the front page of The Press on Saturday November 24 had the headline "Housing Shortage Predicted for the City" . Yet In Table 3 on Page 13 It indicates the Christchurch Housing Target is 55,950 while the capacity is 59,950. Therefore major urban planning changes for Christchurch need not occur. As a Councillor in the immediate post earthquake Christchurch we opened up land at the request of Central Government to ensure there was sufficient room for the future. It is important that if there is no predicted housing shortage for Christchurch City it is made very clear in the fufuture documents.

5. It is important to recognise that intensification in Christchurch has lead to poor outcomes and pressured living. The area intensified for some years is the southern side of Riccarton Road- now medium density. This means that older single homes on one section are demolished , creating 4 new apartments. This area is no longer inhabited by families. In each apartment there can be 4 young people and potentially 4 cars. If we take for example there are three cars for each four bedroomed unit, there are 12 cars from one section. This creates parking difficulties ,young people not parking close to their apartment with increased safety issues ,parking on berms,destroying green spaces and difficult congested driving conditions in narrow streets. There is also a high turnover of residents.
The residents in this area experience pressure every day.
Residents from other areas [Richmond,Linwood Phillipstown }recently presented before Council as they are just starting to experience this intensity of living.

5 The central city is seen and should be the place for intensification. Allowing intensification in the suburbs cuts against Counci's wish for people to inhabit the central city and potentially undermines the concept of a central city and viability of central city retailers.This is an issue for Christchurch City, but I ask you to indicate there needs to be be no further intensification in suburban Christchurch beyond what is currently permitted.

6 If intensification is further considered there must be an understanding that any area that the Hearings Panel judged to be inappropriate for medioum density should retain suburban density. Many residents have spent hours preparing submissions before the Independent Hearings Panel to retain suburban density , which the Hearings Panel mandated in the

Christchurch District Plan; they should not be forced to go through this again. Two examples were the areas around Condell Avenue and Riccarton House and Bush to Matai Street.

7 Research undertaken by University Canterbury indicates young couples with children prefer a house with some land and are purchasing on the outskirts of Christchurch or growing towns such as Rolleston. Currently young couples with children do not want the intensified housing we have seen in Riccarton. { I hope to provide this research at the Hearing.]

8. Christchurch is not Auckland { 1.6 million} nor Melbourne { 4.8 million} nor London {8.1 million} or Paris[12.7 million] .It appears we are being pressurised into a different form of urban living by pressures appearing in other cities. Christchurch does not have the pressures of these larger cities and one of its advantages is that it is liveable ,attractive and easy to move around. I could also add affordable.
Please do impose a model from overseas or Auckland pressures on Christchurch City.

9 Areas deemed medium density cannot be changed , but put please do not create any more areas of this nature. Areas naturally intensify through old homes being removed and two to three townhouses going up where there was one house.
If medium density is to be continued it must be a different form of medium density with allowance for parking and more courtyard space and plantings.

In conclusion there is sufficient land in Christchurch City for the long term with low to medium growth. There is no need to focus on further medium density areas and efforts should be made in the new District Plan to make medium density areas more liveable.
Those residential areas that have maintained their suburban density rating through the Independent Hearings Panel should not be reconsidered.

Helen Broughton
Tel
Email

Our Space 2018-2048 – Greater Christchurch Settlement Pattern Update

Schedule of Submitters who Withdrew From Being Heard

Submitter Number	Submitter	On behalf of…
027	Victoria Foxton	
031	McCracken and Associates	Car Distribution Group
057	Tessa Kain	B. Welsh, S. McArthur, T. Kain
064	Tony Simons	Riccarton Bush Kilmarnock Residents Association
075	Morgan Fallowfield	Ministry of Education
076	Jeremy Phillips	Carter Group
083	Tayla Reece	Youth Voice Canterbury
084	Richard Graham	
092	Emily McDonald	John Law

Submission No: 027	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Victoria
Last name	Foxton
Email	[redacted]
Street name and number	[redacted]
Suburb	[redacted]
Town/City	Christchurch
Postcode	[redacted]
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I wish to speak at the hearings
Phone number	[redacted]
Preferred location to be heard	Please note that I am unavailable from 22.02.2019 Christchurch City
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree

Comment	It is interesting that two of the fastest growing areas in NZ are Selwyn and Waimakariri. The CCC have unfortunately used the Resort Consent Act to stifle easy and cost effective development within the city boundaries. There is plenty of safe Greenfields space within 7-8kms of the central City. The loss of rates for the CCC has been enormous already with people moving out of the CCC area. It is already apparent the areas that are being encouraged for redevelopment are already looking like slum areas with the small houses and small blocks. The traffic to these areas is diabolical at critical times of the day. There are still good 'rural' blocks within Ch-Ch central with good transport systems and future bikeways planned right on the doorstep. Unfortunately, and questionably, CCC have placed the urban boundary right around two blocks we own in the middle of the city area at 195 Port Hills Road and 125 Scruttons Road, which CCC have, on record, tried to buy on several occasions. Both blocks of and are surrounded by CCC land. Please see the attached submission.
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree
Comment	I find it incredibly disturbing to find in last weekends 'The Press' that Real Estate Agents are advertising the fact that CCC are 'gifting' up to $25,000K of the people of Christchurch's money to anyone that purchases an apartment in the CIty. This is an appalling abuse of our rates. The CCC has had the opportunity to create some terrific opportunity's for Residential Mixed density zoning and also Mixed Residential / Business Density zoning within the Christchurch City area. Major international studies have shown sprawling cities to be much higher on a quality of life index.
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	Is it the responsibility of the ratepayer of Ch-Ch to provide and fund social and affordable housing? Is this a financial success for the CCC? We pay for social housing through our taxes, so this is a double hit. It is proven through other Councils that these are not a successful investment. Making more land available will ensure land prices come down anyway.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Somewhat disagree
Comment	I think that it is important the CCC is open-minded with new commercial development within suburbs. It was well noted in the times of the Earthquakes that these suburban communities needed more commercial activity within themselves. Not everyone wants to shop in a Mall or the City, especially those that were in these places during the Earthquakes. They are not a joy to be in and are not community-minded in the slightest. It is important that suburban communities are allowed to grow and be allowed to develop as a community centre for the people of that area.
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	

Agree/disagree	Do not agree
Comment	Why not make more land available instead of having just enough? As a Policy this has failed dismally in the past. This does not seem to be sensible forward thinking and could be detrimental to future growth.
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Do not agree
Comment	Is Statistics NZ asking the right questions of what people are wanting or are the peoples answers being dictated to by the constraints put on them by previous poor planning?
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree
Comment	It appears that the promotion of greater densities around malls and other key centres is already leading to higher crime and slum-like living on top of each other. Not all of the population want a unit or a tiny section without a backyard or garden. I am pleased to see that action is taking to provide rapid transport along transport corridors.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Neither agree nor disagree
Comment	We have been at 125 Scruttons Road, 8kms from the city, for 27 years and still do not have sewerage, no curb and channelling or street lighting. Wouldn't it be nice if the CCC looked after their ratepayers first?
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	It is noted in the attached submission that an agreement between the planners for CRL and CCC that 195 Port Hills Road is generally well located for urban activities and importantly that rezoning of this site has merit. Therefore, we do not understand why the urban boundary was placed on the only block of land on Port Hills Road - the main road between Lyttelton and the City which is surrounded by commercial and housing blocks? Is it because CCC have tried to buy this and the land at 125 Scruttons Road several times to no avail?
Attachments **1004.residential-Closing-Legal-Submissions-16-9-15**	

Submission No: 027
Attachment 1

BEFORE THE INDEPENDENT HEARINGS PANEL

UNDER	the Resource Management Act 1991 and the Canterbury Earthquake (Christchurch Replacement District Plan) Order 2014
AND	
IN THE MATTER	of the Proposed Christchurch Replacement District Plan
SUBMITTER	Castle Rock Limited
	(Submitter 2168 & 2169)

CLOSING LEGAL SUBMISSIONS ON BEHALF OF CASTLE ROCK LIMITED

16 SEPTEMBER 2015

ANDERSON LLOYD
LAWYERS
CHRISTCHURCH

Solicitor: J M Crawford
(jen.crawford@andersonlloyd.co.nz)

Anderson Lloyd House,
Level 3, 70 Gloucester Street,
PO Box 13831,
CHRISTCHURCH 8141
DX WX10009
Tel 03 379 0037
Fax 03 379 0039

JMC-902049-4-63-V1

May it please the Panel:

1. **INTRODUCTION**

1.1 These closing submissions are made on behalf of Castle Rock Limited (Submitter 2168 and 2169) (**CRL**) in relation to Stage 2 proposals for the Commercial/Industrial and Residential Chapters of the Proposed Christchurch Replacement District Plan (**the Replacement Plan**).

2. **SITE-SPECIFIC REZONING REQUESTS**

195 Port Hills Road

2.1 There is agreement between the planners for CRL and Council that the area is generally well located for urban activities and, importantly, that rezoning of this site has merit under the Act.[1]

2.2 Mr Head's evidence was unchallenged. In his opinion, rezoning of the site achieves a greater degree of compatibility with adjacent land use patterns and the change of topography west of the site provides an ideal urban change point.[2] In other words, the site is well positioned and achieves a firm urban edge to this part of the City.

2.3 Ms Oliver helpfully confirmed that she has no concerns with the Outline Development Plan.[3] Ms Oliver conceded that details as to density mix can readily be sorted out at the subdivision consent stage[4]; and that it is good planning to provide the potential future roading connections. Mr Wright undertook a broad desktop study exercise in relation to a number of site-specific rezoning requests. In relation to 195 Port Hills Road, he agreed that any geotechnical issues can be overcome through specific engineering design and simply noted that part of the site falls within the broader coastal hazard mapping area.[5]

2.4 On its merits, this site is uncontentious and would appear to be suitable for rezoning. Residual issues related to coastal hazard mapping will be

[1] Transcript, page 159, lines 9-19.
[2] Transcript, page 528, lines 41-44.
[3] Transcript, page 161, lines 18-25.
[4] Transcript, page 160, lines 12-14.
[5] Transcript, page 120, lines 30-37.

addressed in Stage 3, but in my submission this does not represent a fundamental impediment to the rezoning of 195 Port Hills Road.

2.5 The only issue vexing the Council is the higher order policy, which I will turn to shortly.

123 Scruttons Road

2.6 This site has been the subject of considerable technical attention by the Council. However, the issue of concern appears to primarily relate to the filling of the site which is lawful and entirely compliant. A rule is also proposed as part of the site-specific rezoning request that would prevent development of the site until filling is completed. Mr Wright acknowledged that the ground level of a site plays a role in determining the risk of coastal inundation or erosion.[6] Mr Norton also accepts that on-site mitigation for water quality and quantity can be evaluated at the development stage and is technically feasible.[7] Remaining technical aspects will be addressed further in Stage 3.

2.7 Mr Milne accepted that, if the site is developed under the proposed zone, the anticipated volume of traffic will be well within that expected for a local road and that the wider transport network can readily accommodate the additional traffic safely and efficiently.[8] The myopic focus by Mr Milne on the exact distance to the nearest bus route or design of the internal roading network are not, in my submission, fundamental impediments in traffic terms that would in themselves necessarily preclude rezoning of the site. For completeness, I note that Mr Head's unchallenged opinion is that rezoning of the site would not erode Christchurch's urban interface.[9]

2.8 Again, the Council maintains the position that the higher order policy effectively precludes rezoning of the site at 123 Scruttons Road.

[6] Transcript, page 122, lines 9-13.
[7] Transcript, page 90, lines 22-31.
[8] Transcript, page 104, lines 12-22.
[9] Transcript, page 529, lines 14-15.

3. STATUTORY CONSIDERATIONS – HIGHER ORDER MATTERS

3.1 It is the Council's submission that there is no ambiguity in terms of the reference to Map A, and therefore, there is no need to place an artificial gloss on the relevant objective and policy as currently included in the Canterbury Regional Policy Statement (**CRPS**).

3.2 It is acknowledged that regional policies can, and sometimes do, contain mandatory directives to territorial authorities. However, in this case, serious questions must be asked whether an apparently prescriptive policy is directly binding on the Council in circumstances where the current mapping has not been subject to the rigour of the First Schedule process.

Requirement to "give effect" to CRPS

3.3 "Give effect to" simply means "implement". On the face of it, this is a strong directive that creates a firm obligation.[10] However, the implementation of such a directive will be affected by what it relates to and, I submit, the context in which the underlying policy was developed.

3.4 Under normal circumstances, the requirement to give effect to a policy which is framed in a specific and unqualified way does appear to leave little in the way of discretion. However, Map A and the associated regional policy were not imposed under normal circumstances. The policy framework arose out of an exceptional post-earthquake environment. It was imposed and amendments made under Ministerial direction, with existing appeal rights extinguished. As such, the current policy has not been subject to the First Schedule process and the rigour that would normally be applied to higher order policy documents. It cannot therefore be assumed that the policy in fact achieves Part 2 of the Act. This is an entirely different factual situation to that faced by the Supreme Court in *King Salmon*.

3.5 This, in my submission, raises a genuine issue of procedural fairness for submitters such as Castle Rock Limited who had been active participants in PC1 until such time as their rights were effectively taken

[10] *Environmental Defence Society Inc v New Zealand King Salmon Co Ltd* (2014) 17 ELRNZ 442.

away. We are now left with the situation of a territorial authority agreeing on the merits with certain site-specific rezoning requests, but claiming that "its hands are tied" as a result of a higher order policy that was never properly tested under normal RMA processes and is now subject to a comprehensive review. This cannot be good planning for the City.

3.6 I submit that this Panel must surely have the discretion to give effect to the higher order policy document (read as a whole) in a way that achieves sustainable management, without feeling completely bound by the relatively prescriptive wording of a policy within that document in circumstances where the mapping is, quite frankly, suspect and is now under review. Sustainable management of urban growth and related higher policy imperatives of urban consolidation and intensification can still be achieved while enabling site-specific rezoning of land on the periphery of the City in appropriate areas.

3.7 What the decision of the Supreme Court in *King Salmon* does highlight is the need for regulatory authorities to be very careful with mapping, taking a robust approach with clear methodology that is justified in terms of section 32.

3.8 Given that Map A in its current form was not subject to an extensive RMA process, can it be safely assumed that this aspect of the CRPS in fact deemed to be achieving Part 2? If there is any doubt about this, then in my submission it is open to the Panel to turn to Part 2 in order to make decisions on site-specific rezoning requests under the Replacement Plan.

Meaning of "avoid"

3.9 In my submission, it may be appropriate to go beyond the ordinary and plain meaning of this term given the context in which Map A was developed.

3.10 The Environment Court has expressed the view in the context of a regional policy statement that the word "avoid" does not mean

"prohibit".[11] In other words, it is not a given that an avoidance-style policy should be interpreted as imposing a blanket prohibition on development in affected areas. We also need to remember that the Supreme Court in *King Salmon* was applying a particular set of facts to the NZCPS.

Cumulative effect and precedent – relevant considerations, or not?

3.11 The question has been asked whether cumulative effect is a relevant consideration. Ms Scott acknowledged during closing that the Council's evidence has not specifically addressed this issue as part of Stage 2. In my submission, there is no empirical evidence to suggest that the scale of the rezoning requests in Stage 2 would give rise to a material cumulative effect.

3.12 We are not talking about tens of thousands of new homes. Rather, based on a brief review of the site-specific rezoning requests, this generally involves very minor boundary anomalies or small scale proposals that are located for the most part in areas of the City where there is demonstrable need and where there are currently no identified greenfield priority areas. In my submission, it is not necessary to impose a prohibition if rezoning of a site would have a minor effect and can be achieved in a way that still implements the overall intent of the CRPS.[12]

3.13 The Council also says there is no evidence from submitters addressing the precedent issue of allowing site-specific specific rezoning requests. The concern seems to be that this might undermine the entire strategic direction of the Replacement Plan. In my submission, it is questionable whether the issue of precedent arises in these proceedings. This is not a resource consent hearing. It is about the bigger picture of how we enable Christchurch to recover and lay an appropriate foundation for future sustainable management of the City.

[11] *Man O'War Station v Auckland Council* [2013] NZEnvC 233 at [48].

[12] *Cook Adam v QLDC* [2014] NZEnvC 117 (applying *King Salmon*).

3.14 The Council is urging the Panel not to entertain special cases on the merits because of a possible precedent risk that would be created. The Council's position, put simply, appears to be that the integrity of the urban limits must be maintained at all costs even where it is accepted that site-specific rezoning requests have merit and in fact achieve the purpose of the Act.

3.15 This is like circling the wagons with blindfolds on and shooting blindly at anyone who approaches over the horizon, be they friend or foe, in order to "hold the line". Such an approach fails to properly achieve the sustainable management of natural and physical resources and it certainly does not represent good planning for the future of this city.

3.16 The Map A policy issue has been elevated by the Council to a blanket prohibition. With respect, this is compounded by the fact that Strategic Objective 3.3.7 in its current form essentially replicates the wording of the relevant policy contained in the Canterbury Regional Policy Statement. Set out below is a possible way forward for consideration by the Panel.

4. A POSSIBLE WAY FORWARD

4.1 As a starting point, it is respectfully submitted that it may be appropriate for the Panel to reflect on the wording of Strategic Objective 3.3.7, given the Land Use Recovery Plan (and CRPS) is up for review and now that you have the benefit of detailed evidence supporting site-specific rezoning requests.

4.2 It is noted that the Panel, in delivering the Strategic Directions decision at an early stage, intended to keep under continuing review the question of whether any aspect should be revisited in light of later stages of your inquiry into the Replacement Plan.[13] In my submission, this is clearly a situation where it is appropriate to review Strategic Objective 3.3.7. As I noted during the hearing, this would avoid the Panel inadvertently falling into the same trap of applying highly prescriptive policy wording that may well be found to be redundant in a matter of months.

[13] Strategic Directions Decision, para [316].

4.3 Ms Aston has considered this from a planning perspective and suggested wording is included as **Attachment A**. The proposed amendments include policy criteria that are intended to provide greater clarity on implementing the intent of the CRPS, thus "giving effect to" the higher order policy document. As signalled during the hearing, Ms Aston is available to work constructively with Ms Oliver over the final wording. For completeness, I submit that the Panel has the jurisdiction to make these amendments based on its earlier decision on Strategic Directions but also as a result of submissions that included, as relief sought, consequential amendments to the Replacement Plan.

4.4 For the reasons outlined above, I submit that the Panel does have the ability to entertain site-specific rezoning requests by exercising its discretion to give effect to the overall intent of the CRPS rather than focussing on one policy.

4.5 However, in the event that the Panel determines that it does not have any discretion to rezone any sites that lie outside Map A, I submit that it would nonetheless be of value to both submitters and the Council alike for a merit-based decision to be made by the Panel in relation to each site-specific rezoning request. This then becomes a question of timing. There may be an opportunity to consider the merits further once the LURP review is completed or, if not, then a merits-based decision would at least provide the factual foundation to enable rezoning of sites to take place at a future date where appropriate.

Date: 16 September 2015



J M Crawford
Counsel for Castle Rock Limited

JMC-902049-4-63-V1

Attachment A – Proposed Amendments to Replacement Plan Objective 3.3.7

3.3.7 Objective – Urban growth, form and design

A well integrated pattern of development and infrastructure, a consolidated urban form and a high quality urban environment that…

(c) Provides for urban activities only:

(i) within existing **developed or zoned** urban areas; and

(ii) on greenfield land contained with an Outline Development Plan area included in this Plan; and

(iii) on greenfield land contiguous with areas covered by (i) or (ii) above where:-

- the area of greenfield land and/or number of additional households to be accommodated is relatively small (generally around 15 ha or less, or less than 150 households); and/or
- the greenfield land will provide replacement housing or business land within or close to (generally within 5km of) a community where properties have been 'red zoned' due to damage sustained in the Canterbury 2010 and 2011 earthquakes; and
- the urban activity will not compromise long term planning for strategic, network or social infrastructure; and
- urban development of the land will consolidate urban form and create a logical and defensible urban boundary; and
- the area to be rezoned will not compromise achievement of the intensification targets specified in the Canterbury Regional Policy Statement; and
- the alternative of a rural zoning is not an efficient and effective use of the land resource; and
- is consistent with other Replacement District Plan objectives and policies.
- ~~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~~

(d) Increases the housing intensification opportunities in the urban area to meet the intensification targets specified in the Canterbury Regional Policy Statement Chapter 6, Objective 6.2.2 in particular…

(iv) **On greenfield land provided for under Policy 3.3.7 (c) (ii) and (iii) as specified above.** ~~In those parts of the Residential Greenfield Priority Areas identified on Map A, Chapter 6 of the Canterbury Regional Policy Statement.~~

JMC-902049-4-63-V1

Submission No: 031

SUBMISSION ON OUR SPACE 2018-2048

CONSULTATION DOCUMENT FOR THE REVIEW OF THE GREATER CHRISTCHURCH

SETTLEMENT PATTERN – NOVEMBER 2018

To: Our SPACE Consultation
Greater Christchurch Partnership
PO Box 73012
Christchurch 8154
Email: ourspace@greaterchristchurch.org.nz

Submission by: Car Distribution Group Limited

Mike Tibbs

Contact Details: C/o McCracken and Associates
PO Box 2551
Christchurch
Email: office@rgmc.co.nz

Hearing of Submissions: The submitter does wish to be heard in support of the submission.

---

1. **Introduction**

   The submitter owns the land subject of the submission and is seeking to use the land for urban business proposes.

2. **General Submission**

   It is accepted that the Councils have made progress with integrated planning for the utility systems that they are responsible for, and related funding, since the Urban Limit lines were first introduced. The Councils are in the best position to judge whether service network extensions are feasible, in negotiation with landowners and applicants

3. **Subject Land**

   The subject land has been identified (see plan attached) as Future Greenfield Priority Area, - Business in the Our Space Consultation Document. This is fully supported by the land owner for the following reasons:

(i) that the land has not been used for rural-farming purposes since 1960,
(ii) From 1960-1990 the land was quarried,
(iii) Since 2009 a number of consents have been granted to provide for quarry filling,
(iv) that in 2018 consent was granted to use 11ha of the site for a business activity,
(v) The site has been considered as appropriate for industrial/business zoning given its proximity to the business zoning and airport activities north of SH1 (NW Area Review),
(vi) There are no geological or ground contamination reasons which would preclude the activity, but the ground conditions may preclude the majority of permitted rural or residential activities,
(vii) The land (zoning) has already changed from what was a rural zone to the rural-urban fringe zoning and in recognition of its location and function within the City urban area, and
(viii) The land is located as a small pocket of Priority Business Activity (coloured blue) on Map A of Chapter 6 of the RPS, and

Thank you for your consideration of this submission. As such the landowner supports the identification for Future Greenfield Priority Area – Business and is available to meet with Council Officers if that is of any value.

Yours sincerely,



K P McCracken
Director

811006_CDG_ Our SPACE Consultation_Nov 2018_FINAL

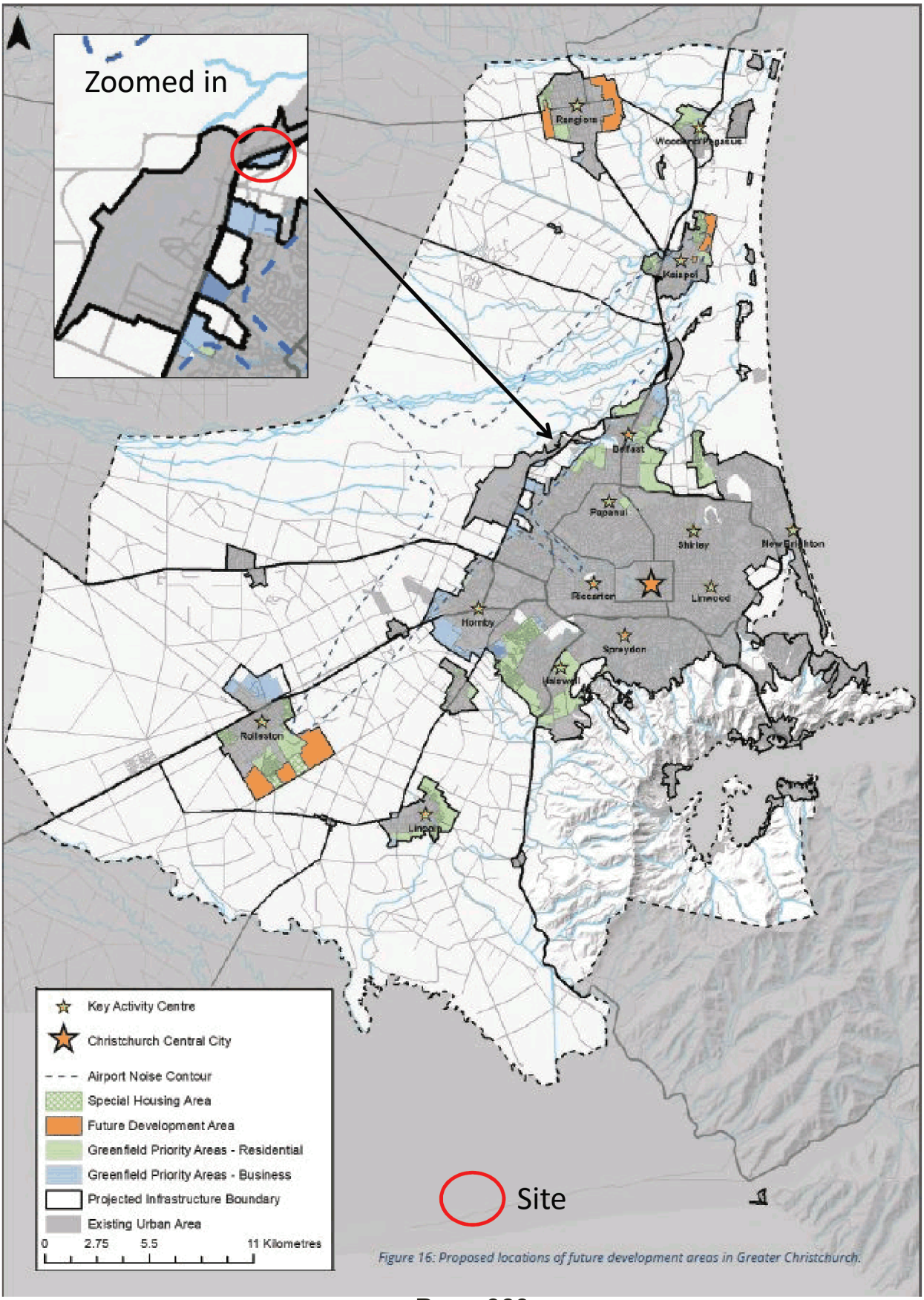


Figure 16: Proposed locations of future development areas in Greater Christchurch.

Submission No: 057

SUBMISSION ON OUR SPACE 2018-2048

CONSULTATION DOCUMENT FOR THE REVIEW OF THE GREATER CHRISTCHURCH

SETTLEMENT PATTERN – NOVEMBER 2018

To: Our SPACE Consultation
Greater Christchurch Partnership
PO Box 73012
Christchurch 8154
Email: ourspace@greaterchristchurch.org.nz

Submission by: B. Welsh – 50 Johns Road
S. McArthur – 54 Johns Road
T. Kain – 52 Johns Road

Contact Details: C/o T. Kain

Hearing of Submissions: The submitters do wish to be heard in support of their submission.

---

1. **Background**

The three Councils have made great progress with integrated planning for the utility systems that they are responsible for, and related funding, since the first Urban Limit lines were introduced into the Regional Planning Scheme several decades ago. The Councils are in the best position to judge whether service network extensions are feasible and desirable, in negotiation with developers and applicants. The development process needs flexibility. The PIB/Urban Limit lines as currently prescribed are likely in some places to inhibit efficient and economic land development. The submitters have been involved in the development and rezoning process at Belfast for the last 25 years. They are also in consultation with the developer of the adjoining Belfast land.

The Submitters ask that the Proposed Infrastructure Boundary/Urban Limit lines be amended as attached.

2. **Land**

The submitters land makes up the western end of the Rural-Urban Fringe Zone at N.W Belfast with Residential New Neighbourhood zoning on both the east and north boundaries. It also

intersects the north-east corner of NW Belfast Outline Development Plan and adjoins with the proposed development program at N.W. Belfast.

The subject land is easily integrated with the adjoining NW Belfast Outline Development Plan and better relates to the development outcome for the NW Belfast area than the Rural-Urban Fringe zone.

Significant changes are now underway at NW Belfast reflecting the higher density residential outcomes sought for the area, the proposed new shopping centre and the new (additional) primary school. . The submitters believe that the position of the Urban Infrastructure line, excluding this land is inefficient and does not deliver a residential outcome appropriate to the developing community at Belfast. However in all other respects the land is conveniently located and well suited for residential development. This submission is that the Urban Limit line is in the wrong place. This is supported by the following factors:

- The land is physically well situated to be developed for housing and can be serviced. There are no unusual infrastructure issues.
- The land is close to amenities (proposed new primary school, churches and the proposed new shopping centre) and its development would complement the proposed residential development on the adjacent properties and the road and reserve connections.
- The land is within 200m of the proposed public transport stop/route Main North Road,
- The land is suitable for housing,
- The land is a small bock largely adjoining or facing urban development
- The land can be serviced,
- There are no geotechnical constraints to development of the land,
- The site will eventually link via Belfast Road to the interchange of the Northern Motorway/Belfast Road off-ramps, and
- That the inclusion fo the land within the infrastructure boundary will not adversely impact development at Belfast, rather it will consolidate Residential activity.

When regard is had to the concept of a 10 minute neighbourhood for the Key Centres (Fig 19 of the Our Space Document) then the subject land satisfy that outcome better than much of the existing urban land at Belfast.

The subject land does not represent an isolated or disjointed urban zoning or development opportunity but is located in area that contains urban infrastructure, amenity and services.

Development of the land for the purpose sought should be encouraged in order to provide infrastructure efficiency and a compact and sustainable urban area at Belfast. It will be located closer to the facilities and amenities of Belfast than many of the areas identified for residential growth in the area.

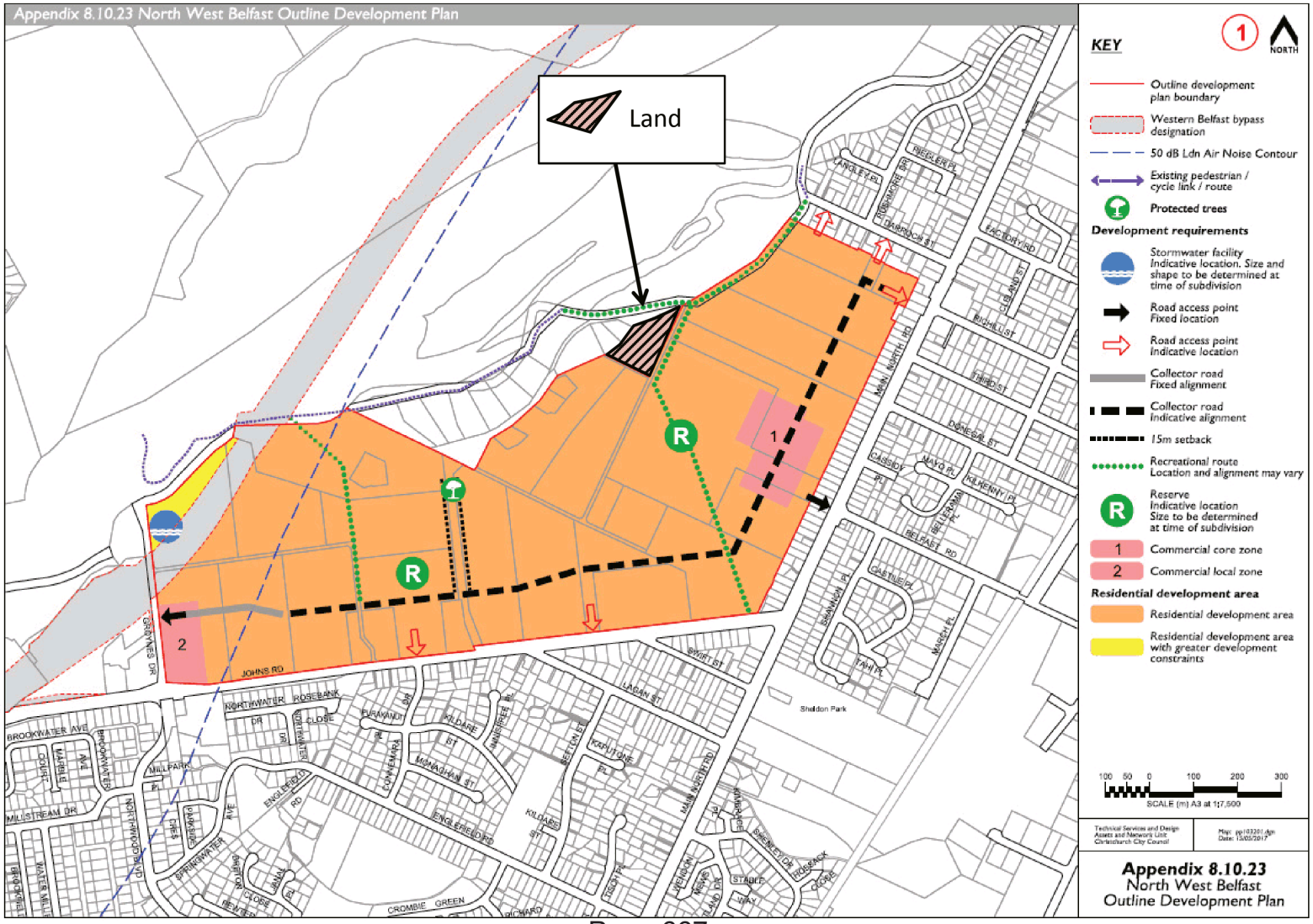
The submitter thanks you for your consideration of this submission. The submitter is available to meet with Council Officers at any time.

Yours sincerely,



K P McCracken
Director

Submission No: 057
Attachment 1



Page 667

Item 4
Attachment F

Submission No: 057
Attachment 2

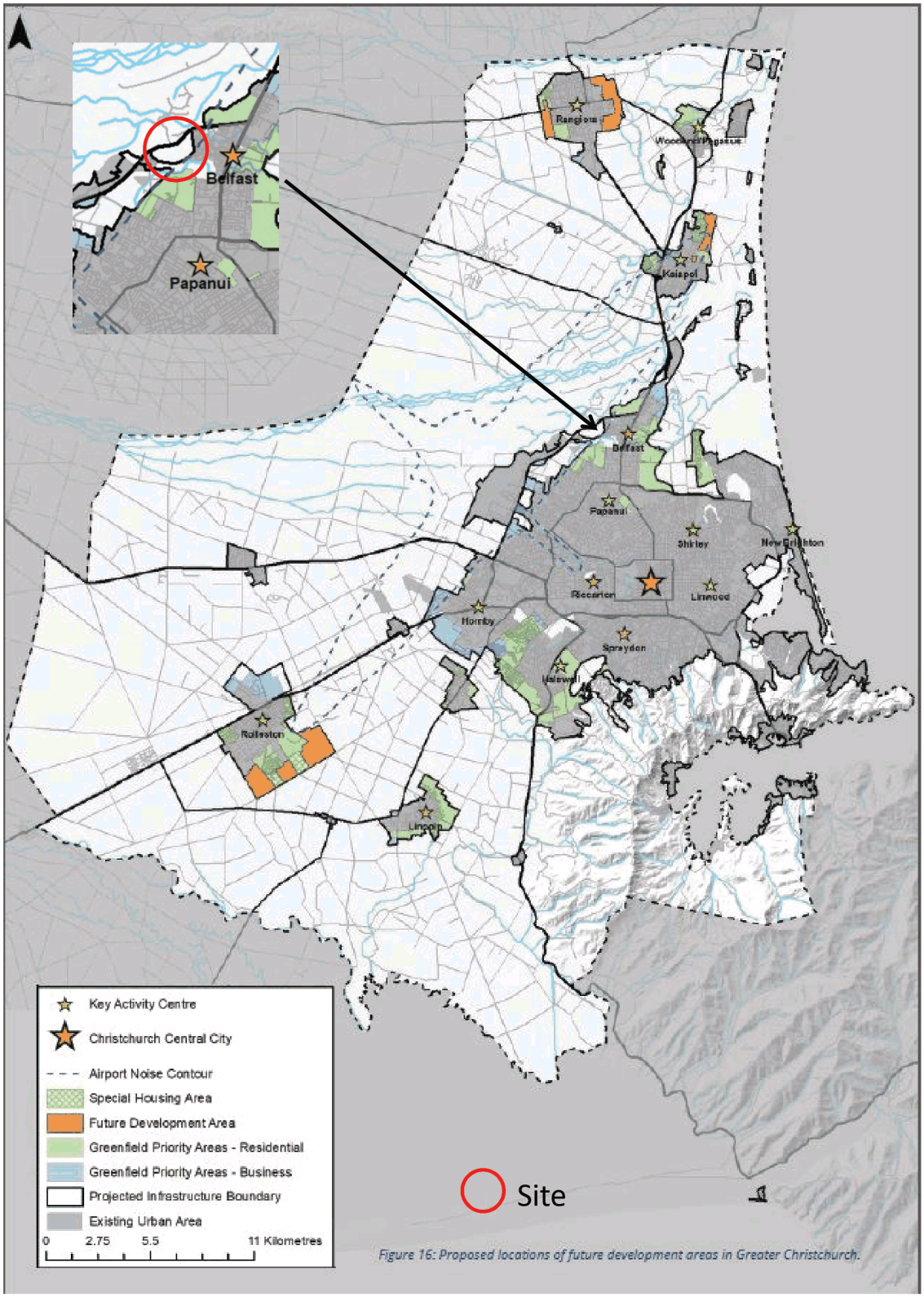


Figure 16: Proposed locations of future development areas in Greater Christchurch.

Submission No: 064		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Tony	
Last name	Simons	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Christchurch	
Postcode	[redacted]	
I am completing this submission	On behalf of a group or organisation How many people represent: 100+	Riccarton Bush Kilmarnock Residents Role within organisation: Association Chair
Hearings		
Do you wish to speak to the hearings panel?	I wish to speak at the hearings	
Phone number	[redacted]	
Preferred location to be heard	Christchurch City	
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat agree	
Comment	It would not be in the interests of the people of Canterbury, now and in the future, to lose too much green-space in these areas. The predictions out to 2048 are on shaky ground anyway (extrapolation beyond data sets cannot be relied on) thus we suspect there will be significant capacity. Current housing development is already providing a surplus of accommodation.	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Neither agree nor disagree	
Comment	This process has been underway for several years now with the natural intensification of areas. In our own area (north of Riccarton Road to Matai Street) there has been a range of intensification with townhouses, small unit complexes (for older residents etc) established. The area going north from Bealey Ave has seen a proliferation of apartments as has the area south from Riccarton Road to Blenheim Road. Unfortunately, a big problem is ridiculous planning allowing no provision for on-site parking. Parking is a shambles in areas such as these.	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment	Affordable housing requires affordable land. Investigate different models as suggested but avoid creating large medium density communities. They are most likely to turn into social ghettos.	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Agree	

Comment	
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Agree
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Somewhat disagree
Comment	The plan relies heavily on current data and projecting from current data into the future, This extrapolates beyond data sets and is a known risky, even dangerous, approach. In saying that it is recognised that current demographic data does provide a basis for extending predictions into the future. However, we would suggest while 2030 might be reasonable, relying on predictions up to 2048 certainly is not. Also, economic and similar models are just models and have a history of not being particularly reliable. We would have thought a solid short to medium term programme out to 2030 would go a long way to future-proofing life in Canterbury.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat disagree
Comment	The disagreement here is around the entrenched ideology of the planners regarding the theory of Key Activity centres and greater living densities around them. The residents our Association represents came out in large numbers to object to similar proposals for forced medium density. We fought hard to retain the residential zoning for the area through the Independent Hearings Panel processes and would argue our position has been proven right. This entrenched one-size-fits-all planning ideology has been subjected to substantial research and criticism (Monash University and the University of Canterbury). It has failed in places in Melbourne and Sydney and succeeded in others. It is a particularly good concept for developments on large pristine areas. However, in long established areas such as that our Association represents, there is little spare land and an acceptable level of intensification, in keeping with the vitality and attractiveness of the area, has already been taking place over years. Each area needs to be considered separately in keeping with the local amenity. Those younger residents who have made their home in the area would not like to see the dogmatism inherent in this statement raise the spectre of having the high intensity policy raised again. Regarding transport, trying to emulate the European cities or Melbourne where public transport is well integrated will be very difficult. We have relatively poor public transport networks and it will be difficult and expensive, to superimpose a comprehensive new system on an established area with little room to manoeuvre. Yes, it would be great to have various forms of public transport that will cater for the requirements of the population but at present it is good for only a low proportion of the population. Trying to wean people out of cars on to public transport will be difficult. The proposals we have read do not adequately address that challenge. Drive around the city and note all the parked cars on the streets. CBD fringe commuter parking (e.g. the roads through Hagley Park) on residential streets is compounded by the fact increasing housing density has not required adequate off-street parking. Many people indulge in activities not serviced by public transport and while it might be handy to live close to so-called Key Activity Centres try, carrying shopping or the weekly groceries on foot or on a bus. We will still be reliant on cars.

Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	However, we believe the emphasis should be primarily on these issues. Ratepayers should expect this to be done as a priority. This does not appear to be the case at present where money is diverted to non-essential projects.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	We recognise the need for a plan to take the city into the future. We note the lack of questions relating to health and safety. The parking issue has been highlighted but not adequately under health and safety concerns. Residential streets packed with parked vehicles are not healthy or safe for residents or those wishing to use the streets. For example, narrow residential streets are being reduced to single lane, inviting accidents. People should be able to walk safely, maybe with their dog. Children should be safe. People being discouraged from walking the streets. Decisions like allowing fast electric scooters on footpaths do nothing to enhance health and safety. Current policies have meant the elderly struggle to walk around and are unable to receive visitors. Shops are going out of business because customers cannot find car parks nearby. Face it, we aren't going to eliminate the car in the short to medium term if at all. Electric vehicles will come but these still need parking and pose their own problems with silent running and charging points required. The plan should look at how to deal with all the issues of health, safety, amenity and wellbeing in a far more pragmatic and realistic way which includes less theorising and more examination of reality in order to address the issues and realise ideals for the future. In conclusion, we feel we have been inundated recently with CCC proposal after proposal for consultation, most of them quite complex. As ordinary members of the public, we wonder if this avalanche of process is helpful. It seems designed to disincentivise meaningful consultation in favour of ticking boxes by the planners so they can continue to move their agendas forward.
Attachments	

Submission No: 075

30 November 2018

Our Space Consultation
Greater Christchurch Partnership,
PO Box 73012,
Christchurch 8154.

Proposed Our Space 2018-2048 Greater Christchurch Settlement Pattern Update- Ministry of Education Submission

The Ministry of Education ('the Ministry') welcomes the opportunity to provide feedback on the Our Space 2018-2048 Greater Christchurch Settlement Pattern Update (Our Space).

Background:

Education contributes to New Zealand's social, cultural, economic and environmental wellbeing. It builds a future workforce that can participate in new and emerging jobs. It contributes to people's health and wellbeing and wellbeing outcomes, cultural identity and positive participation in society.

The Ministry is the Government's lead advisor on the New Zealand education system, shaping direction for education agencies and providers and contributing to the Government's goals for education. The Ministry has responsibility for all education property owned by the Crown. This involves managing the existing property portfolio, upgrading and improving the portfolio, purchasing and constructing the new property to meet increased demand, identifying and disposing of surplus State school sector property and managing teacher and caretaker housing.

The Ministry is therefore a considerable stakeholder in terms of activities that may impact on existing and future educational facilities and assets in the Greater Christchurch area.

The Proposed Our Space 2018-2048 Greater Christchurch Settlement Pattern Update in relation to the Ministry's interests:

Our Space is a review of the land use planning framework for Greater Christchurch. It outlines the Greater Christchurch Partnership's proposed settlement pattern and strategic planning framework to meet land use and infrastructure needs over the medium (next 10 years) and long term (10 to 30 years) periods. The population in Greater Christchurch is projected to grow to about 640,000 by 2048, being 150,000 more residents than in 2018. This population growth translates to about 74,000 new households in Greater Christchurch by 2048 with 54% of this growth in Christchurch City, 28% in Selwyn and 18% in Waimakariri.

The Submission

Overall, the Ministry supports the proposed strategy and the inclusion and consideration of social infrastructure such as schools. In particular, the Ministry submits on the following:

(i) Early Engagement

The Ministry notes that provision for new growth is generally to be accommodated by new greenfield areas in Rolleston, Rangiora and Kaiapoi and intensification in Christchurch City.

While the Ministry has been planning on the basis that these areas would be developed over time, it encourages Councils to continue to undertake early engagement with the Ministry when implementing these areas for development. The Ministry is comfortable with its planning for schools in the proposed greenfield areas, but notes that there is some uncertainty of the urban form and location of the intensification in the City and its implications for schools. Early engagement between the parties particularly where the urban form is uncertain, will enable a co-ordinated approach in which the Ministry

can be proactive in ensuring that schools are available and have capacity to respond to growth. Overall, the Ministry sees close collaboration with the Greater Christchurch Partnership as being crucial to the timely and effective provision of schools within the Greater Christchurch area to facilitate appropriate education opportunities.

(ii) Consolidated Growth and a "10-minute Neighbourhood"

The Ministry supports the concept of a 10-minute neighbourhood for key centres (although it appears Figure 19 is not referred to in the text and there is limited commentary on the 10-minute neighbourhood) and its implications for integrated transport including, walking, cycling and public transport. The Ministry looks forward to working with Councils in further implementing this concept.

(iii) Shared use of Facilities

While not explicitly referred to in the Our Space document the Ministry supports and encourages investigating opportunities for sharing recreation and community facilities with Councils, in particularly in the interests of minimising duplication particularly in areas of limited space and where there are high costs. Some facilities are shared at present by the Ministry and Councils and there is likely to be further scope for these arrangements, including in those areas of intensification. These types of flexible uses and agreements assist in enabling accessible and quality facilities and activities for use by the students and community. It is also likely to assist in meeting the concept of a 10-minute neighbourhood.

Should you wish to discuss any aspect of this feedback please do not hesitate to contact the undersigned as consultant to the Ministry.



Morgan Fallowfield
Planner (Beca, Ltd)

P: 03 367 2494
E: morgan.fallowfield@beca.com

Submission No: 076

Submission Form

Greater Christchurch Partnership
Te Tira Tū Tahi
One Group, Standing Together

HAVE YOUR SAY BY 30 NOVEMBER 2018

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

How to make a submission

Online: Make a submission using the online submission form at www.greaterchristchurch.org.nz/ourspace

Email: ourspace@greaterchristchurch.org.nz

Post: Our Space consultation, Greater Christchurch Partnership, PO Box 73012, Christchurch 8154

Hand deliver: Civic Offices, 53 Hereford Street

SUBMITTER DETAILS

Name: Carter Group Limited

Address: c/- Novo Group Limited
PO Box 365, Christchurch 8013

Email:

I am completing this submission: [ ] For myself [Y] On behalf of a group or organisation

If you are representing a group or organisation, how many people do you represent? 1

HEARINGS

Hearings are planned for February 2019.

Do you wish to speak to the hearings panel?

[Y] Yes, I wish to speak at the hearings [ ] No, I do not wish to speak at the hearings

If you wish to speak at the hearings, please indicate your preferred location to be heard and provide a contact number.

Preferred location: [Y] Christchurch City [ ] Rangiora [ ] Rolleston

Contact number:

QUESTIONS

The questions below may help you structure your submission in relation to the various aspects covered in **Our Space 2018-2048**. Section 5.7 of **Our Space** briefly outlines some alternative options considered when preparing this document. You can make submission points under each question and/or other and more general comments under question 9.

Housing growth

Question 1

Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree or disagree with this approach and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☑ Somewhat disagree ☐ Do not agree

To the extent that additional capacity is provided for greenfield (rather than infill) housing growth, consideration should be given to growth adjacent to existing urban land at Kainga, noting its proximity to Christchurch City and Kaiapoi and its suitability for development in terms of infrastructure availability, among other things. The rationale for further residential development at Kainga was advanced in submissions and evidence for PC1 to the RPS (refer to the highllghted attachments) and this rationale remains relevant.

Question 2

Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why?

☐ Agree ☑ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

To the extent that the framework/approach is generally agreed with, this supports some further growth at Kainga.

Question 3

Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home.

What elements should be included in this action plan?

-

Business growth

Question 4

Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why? What further measures would support such development?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

-

Question 5

The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses.

Do you agree or disagree this is sufficient and in the right location and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

-

Growth needs

Question 6

The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.

Do you agree or disagree with our evidence base and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

Transport and other infrastructure

Question 7

Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors.

Do you agree or disagree with this approach and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

Question 8

Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.

Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

As noted above, Kainga is well serviced with infrastrcture and should be considered accordingly.

Other

Question 9

What other points do you wish to make to inform the final **Our Space 2018-2048: Greater Christchurch Settlement Pattern Update**?

Submissions are public information

We require your contact details as part of your submission — it also means we can keep you updated throughout the project. Your submission, name and contact details are given to decision-makers to help them make their decision.

Submissions, identifying submitter names only, will be made available online. If requested, submissions, names and contact details may be made available to the public, as required by the Local Government Official Information and Meetings Act 1987.

If you consider there are compelling reasons why your name and/or feedback should be kept confidential please outline this in your submission.

cavell leitch law

Cavell Leitch Pringle and Boyle
Level 15, Clarendon Tower
Cnr Oxford Terrace & Worcester Street
PO Box 799 Christchurch 8140
Telephone (03) 379 9940
Fax (03) 379 2408
www.cavell.co.nz

14 May 2009

Canterbury Regional Council
PO Box 345
CHRISTCHURCH 8140

by email: donald.fraser@ecan.govt.nz
by email: RPSPC1@ecan.govt.nz

PC1 - OAKVALE FARM LIMITED, MAURICE CENTRE LIMITED, AND AVONHEAD MALL LIMITED

Please find **enclosed** the Synopsis of Legal Submissions for these submitters. Their submissions have been set down for hearing on Wednesday, 20 May 2009.

Mr Tim Carter (a director of the submitter companies) and Mr Justin Prain will be lodging brief supplementary evidence tomorrow.

Yours faithfully
CAVELL LEITCH PRINGLE & BOYLE

Per:

AIDAN PREBBLE
Partner
Email: aidan.prebble@cavell.co.nz
Direct Dial: (03) 364 6336

Encl

AJP-135346-13-25-V1
GC01

BEFORE THE	Canterbury Regional Council
IN THE MATTER OF	the Resource Management Act
AND	
IN THE MATTER OF	Proposed Change No. 1 to the Canterbury Regional Policy Statement Chapter 12A (Development of Greater Christchurch) including Variations 1, 2, 3 and 4.

SYNOPSIS OF LEGAL SUBMISSIONS FOR OAKVALE FARM LIMITED, MAURICE CENTRE LIMITED, AND AVONHEAD MALL LIMITED ("THE CARTER GROUP")

Introduction

1. The purpose of this synopsis is to set out the main elements of the submissions of the Carter Group on PC1.

2. In summary, the Carter Group:

   2.1. Supports the objectives in PC1;

   2.2. Generally supports the identification of urban limits but requests identification of land at Kainga;

   2.3. Challenges the sequencing for some growth areas in Table 2;

   2.4. Challenges the failure to identify its centres at Ferrymead and Avonhead as key activity areas ("KACs"); and

   2.5. Seeks greater recognition for comprehensive developments in Policy 2 for intensification areas. In particular, it seeks recognition of the comprehensive development of the Intensification Area at Avon Loop.

Legal Framework

3. The Carter Group generally accepts the summary of the legal framework in the Officer Reports. This framework will be well known to the Panel with the key aspects being the Regional Council's functions in section 30, the requirements for an RPS in sections 59 to 62, and the purpose and principles of the Act in Part 2.

4. To this it should be added that the Panel's considerations are guided by the requirements in section 32 involving the requirement for a further evaluation under subsection (2) to be made against the threshold tests in subsection (3) and in the context of the matters to take into account in subsection (4) (including benefits and costs).

5. Given its general agreement with the objectives in PC1, the Carter Groups case is therefore directed at the second threshold test and whether the policies and methods are the most appropriate means to achieve the objectives and, through them, the purpose of the Act. It is now well established that the "most appropriate" test in section 32(3) is indistinguishable from "better".[1]

Issues

6. The main issues for the Carter Group are:

   6.1. Whether the sequencing within Identified Urban Limits in Policy 6 and Table 2 is the most appropriate method in terms of land at South Halswell (CSW4), Sparks Road (C3W3), and Upper Styx (CN3);

   6.2. Whether the Urban Limits on Map 1 go far enough in terms of the Kainga area;

   6.3. Whether the KACs identified in Policy 5 are the most appropriate;

   6.4. Whether Policies 2 and 7 are the most appropriate to the extent that they seek the protection of historic heritage features; and

[1] See *Bates v Selwyn District Council*, Decision C7/06.

6.5. Whether Policy 2 "Intensification" should be amended to encourage comprehensive development of intensification areas where possible.

Summary of Carter Group Case

7. As noted, the starting point is that the Carter Group agrees with the notified objectives and the overall thrust of the notified policy framework.

Sequencing

8. The Carter Group has land holdings in South Halswell (CSW4), Sparks Road (C3W3), and Upper Styx (CN3).

9. The evidence of Mr Hall (servicing), Mr McGregor (traffic), and Mr Philips (planning) is that any servicing constraints for these areas can be resolved and the sequencing in Table 2 should be brought forward from 2017-26, to 2007-16.

10. Mr Carter gives evidence on the costs of the sequencing periods in Table 2 which currently delays development in these areas to the 2017-26 period.

Urban Limits - Map 1 - Kainga

11. The Carter Group owns land at Kainga. Its evidence is that this is readily serviceable and better located than some other land areas identified within the urban limits. It says a change to Map 1 to include Kainga will better achieve Policy 2 and the objectives.

Key activity centres

12. KACs are identified in Policy 5 and Map 1. They exclude existing commercial centres owned by the Carter Group at Ferrymead and Avonhead.

13. Its evidence is that these centres meet the criteria for a KAC. Changes to PC1 to identify them as KACs will better achieve Policy 5 and the objectives and will better reflect the existing distribution and network of existing suburban and district centres in Christchurch.

Heritage protection

14. Heritage protection is referred to in Policies 2(e) and 7.[2]

15. Section 61(2) provides that the Council shall have regard to any "relevant entry in the Historic Places Register". However, the Regional Council's functions in respect of management of land use in section 30(1)(b) is:

> "…the preparation of objectives and policies in relation to any actual or potential effects of the use, development, or protection of land which are of regional significance."
>
> (My underlining)

16. Policies 2(e) and 7 are not adequately qualified as to heritage protection. This is not such an issue with Policy 2(e) which does little more than restate a statutory obligation to be exercised on the merits. However, to the extent that a regional policy statement or plan contains policies that are directive about the protection of historic heritage features, it is submitted that this must be limited to the protection of historic heritage features of regional significance. Policy 7 should be amended to reflect this.

Policy 2 - Comprehensive developments

17. The Carter Group supports Policy 2 for intensification. It owns a large area of land in Avon Loop which is identified on Map 1 as Intensification Area - Central City/L4.

18. Achieving the intensification of urban development in central Christchurch remains a major issue in terms of both the increase in density of inner city living areas and the quality of design of new developments. Mr Carter and Mr Prain will speak to this issue.

19. The Carter Group seeks an amendment to Policy 2 to encourage comprehensive development as a means of achieving quality inner city redevelopment.

Aidan Prebble
20 May 2009

[2] 7th Bullet point.

SYNOPSIS OF EVIDENCE OF TIMOTHY MAURICE PHILIP CARTER ON BEHALF OF:
OAKVALE FARM LIMITED,
MAURICE R CARTER LIMITED,
AVONHEAD MALL LIMITED

My name is Tim Carter and I am an employee of Carter Group Ltd who has made submissions to this Regional Policy Statement Plan Change 1 process under the subsidiaries of Oakvale Farm Ltd, Maurice R Carter Ltd and Avonhead Mall Ltd.

My responsibilities at Carter Group include all the Resource Management matters associated with our various landholdings.

Carter Group is a large privately owned company that was established by Maurice Carter (the Founder) in 1946 and is still wholly owned by the Carter Family.

Carter Group's core business is land and property ownership in the City of Christchurch and the Canterbury region where the majority of its assets are located.

Through our involvement over the last 6 decades in land development, housing construction and property investment the company has built up an extensive understanding of Town Planning matters and processes in Christchurch and Canterbury Region. As a company we have been strongly involved in the City Plan review process particularly focusing on urban growth and commercial distribution. Our submissions on the 1995 City Plan Review process were wider than just our commercial interests in that we submitted on matters that had no pecuniary benefit to us. We have a strong affinity with Christchurch and the Canterbury region and value how the area is developed. More recently we have also been involved in the South West Area Plan, the Urban Development Strategy and now the Regional Policy Statement Plan Change 1 (PC1).

Summary of Carter Group's Concerns

As a company we are generally supportive of the thrust of PC1 and the policy framework. We are particularly supportive of more urban consolidation and the policies managing growth over the next 10-

20 years. The company however has some concerns which relate to how PC1 is to be implemented at a policy level, particularly in terms of:

1. **South Halswell** – Carter Group purchased land under the subsidiary of Oakvale Farm Ltd bounding Glovers Road and Kennedy's Bush Road back in 2003, as this area had been rezoned Special Purpose (South Halswell) zone. This zone contemplates further residential development subject to the resolution of various matters which are in the control of the combined landowners and do not require specific funding from the Council. I emphasise that servicing matters were never identified as constraints to urban development at the rezoning of this Special Purpose Zone.

   This land has clearly been forgotten about. Firstly, South West Halswell has been identified as an urban growth area but it has not been notated as a particular growth area on Map H6 and correspondingly is not listed anywhere in Table 2. It has also been forgotten that this land was rezoned for residential development in an Environment Court decision in 2003 of which Environment Canterbury was a party requesting the zoning (as can be seen in the Memorandum of the parties dated 16 May 2003).

   I think it is unjust for Environment Canterbury to now promote a policy which proposes that this land is developed in the timeframe of 2017-2026 when they were a party to the Memorandum in 2003 that contemplated this land should be developed in the short term for residential development. We purchased this property based on this zoning and if the development is indeed deferred until 2017-2026 we will incur significant financial loss.

   My experience indicates that zoned residential land is worth approximately $600,000 per hectare. The sequencing proposed in Policy 6 would delay us from developing this land for a further 8 years until 2017 at the earliest. Discounting this 8 year period back at 8% we would incur a loss of $275,000 a hectare or as our holding is 22 hectares a total loss of approximately $6,000,000. I believe this loss is grossly unjust as we purchased this land based on the knowledge that it had been rezoned for residential purposes and that Environment Canterbury and Christchurch City Council were supportive of this zoning. Now this land maybe delayed due

to Environment Canterbury promoting a new development sequence that does not take account of the Environment Court decision back in 2003 of which they were a party.

This land should be identified in the first sequence of development. Regardless of this PC1 process we are able to apply for consent, under the current City Plan Special Purpose Zoning rules, to develop this land for residential purposes. Work on this process has commenced with a storm water discharge consent submitted to Environment Canterbury on Monday 18 May 2009. This land will be developed in the short term and hence it is illogical to identify this land to be developed post 2017.

2. **Kainga** – It is common sense to identify Kainga for immediate residential development. To my knowledge Kainga is the only area out of all the identified growth areas that has currently available sewerage capacity. Further, we have been informed by the Christchurch City Drainage Engineers that they require additional sewage flow in the pipes that serve this area as the current low flows cause engineering problems. Kainga also has roading capacity as you will hear from Mr McGregor and has no storm water issues. Kainga is attached to an existing settlement and therefore it is common sense to identify Kainga for immediate residential development.

   Kainga was purchased by my Grandfather Maurice in 1973. He purchased this land because he had identified it as an ideal location for urban development. Through my knowledge of the UDS and through discussions with the Christchurch City Council I understand that the Council had also identified Kainga as an area suitable for urban development because of servicing capacity, roading network capacity and the existing urban settlement. Whilst Council has gone on to prefer other green field areas for further development these all have servicing constraints. Furthermore the recreational amenities offered by the Waimakariri River and barriers to outward growth in conjunction with the servicing availability make Kainga preferable for urban development. It is common sense to identify Kainga for immediate residential development.

3. **Highsted Road (Upper Styx)**– As you will hear from Mr Hall, the only impediment to the Highsted Road development area is the lack of sewage capacity. The sewage capacity upgrade

at Grassmere Storage facility which will serve this area is programmed to be completed by 2017. This land should be identified in the earlier sequence of 2009-2016 rather than the second timeframe as it takes at least 3 years to obtain subdivision consent, physically construct a subdivision, sell sections and then construct houses before there is a draw on sewerage.
If we commence developing this land in 2014 it would not require sewerage connections until 2017. Using a similar rationale to the earlier South Halswell example, the three year delay incurred due to this being a listed in the second sequence, when development could commence in 2014, will cost our company approximately $800,000.

4. **Ferrymead and Avonhead Key Activity Centre's** - As you will hear further from Mr Phillips, both Ferrymead and Avonhead meet all the criteria identified for key activity centres. Identifying these two locations as key activity centres fits in with the spread of key activity centres throughout the Canterbury Region.

5. **Avon Loop** - We own 2.2 hectares of land in the City Centre in an area known as the Avon Loop. This would be one of the largest, if not the largest, contiguous land holding in the inner city area and is an ideal location for comprehensively planned and designed residential intensification. Comprehensive development in this area needs to be specifically mentioned in Plan Change 1 if the RPS is to achieve its ambitious targets of residential activity in the Central City. In the absence of comprehensive development being actively encouraged or promoted, piecemeal and inefficient development on a site by site basis as has occurred in the existing Living 3 zones is likely to continue. You will hear further information on the opportunities with the Avon Loop land from Mr Justin Prain.

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of Canterbury Regional Policy Statement: Plan Change 1 and Variation 4

STATEMENT OF EVIDENCE OF ANDREW JAMES EMIL HALL ON BEHALF OF OAKVALE FARM LIMITED

AJP-135346-13-17-V1

1. QUALIFICATIONS AND EXPERIENCE

1.1 My full name is Andrew James Emil Hall.

1.2 I am a Principal of the firm Davie Lovell-Smith Ltd. I hold the following qualifications,

a. Bachelor of Surveying Otago with Credit.

b. Bachelor of Engineering, England First Class Honours.

c. Member of the New Zealand Institute of Surveyors.

d. Member of the Institute of Professional Engineers in New Zealand.

e. Registered Professional Surveyor as conferred by the New Zealand Institute of Surveyors.

f. Chartered Professional Engineer as conferred by the New Zealand Institute of Professional Engineers.

g. Licensed Cadastral Surveyor as conferred by the Cadastral Surveyors Licensing Board.

h. Current annual license to undertake Cadastral Surveys.

i. Current Annual Practising Certificate as a Chartered Professional Engineer.

1.3 I have the following experience in respect to sewer and water supply infrastructure design:

18 years post graduation experience as a surveyor, engineer and land development consultant, employed by Davie Lovell-Smith Ltd, Wood and Partners Ltd of Auckland, Buro Happold Limited of England and Cheal Consultants Ltd of Taupo. I have a wide experience in Land Development projects ranging from a two-lot subdivisions through to large engineering projects such as Gulf Harbour in Auckland. Part of my experience includes five years in England working on projects such as the Millennium Dome and Saudi Arabian National Museum. My particular expertise is Land Development Civil Engineering

including design of water supplies, stormwater and sewage reticulations.

I have been designing and modelling, water, stormwater and sewage reticulations in Christchurch for the past seven years.

I have maintained a close association with the City Council Engineers in regards to the current sewage and water supply situation, and the progress being made in upgrading these systems.

1.4 I have read the Code of Conduct for Expert Witnesses (Rule 330A, High Court Rules and Environment Court Practice Note) and I agree to comply with it. I have complied with it in the preparation of this statement of evidence.

1.5 I have reviewed the following documents in relation to the proposed Canterbury Regional Policy Statement: Plan Change 1 and Variation 4:

a. Planning documents, including:

i. RPS proposed Plan Change 1 and associated section 32 report;

ii. Variation 4 (to proposed Plan Change 1) and associated section 32 report;

iii. Officer's Reports on Plan Change 1 and Variation 4.

b. I have prepared my statement of evidence in reliance on this work and consultation with Council Officers.

2. SCOPE OF EVIDENCE

2.1 I have been asked by Oakvale Farm Ltd (Oakvale) to prepare evidence in relation to the benefits of including all of Oakvale's land within the Urban Limit and of enabling future growth and development of the land in a fashion that is timely with market demands.

2.2 This evidence addresses the requirements for connection to strategic sewer, stormwater and water assets for the following properties owned by Oakvale or its subsidiaries:

a. 26 Glovers Road, Halswell (CSW4)

b. 50 Glovers Road, Halswell (CSW4)

c. 116 Kennedys Bush Road, Halswell (CSW4)

d. 122 Kennedys Bush Road, Halswell (CSW4)

e. 179 Milns Road, Halswell (CSW3)

f. Pt RS 14348, Kainga Road, Kainga

g. 232 Highsted Road, Casebrook, Christchurch (CN3)

Please refer to the attached Location Plans.

2.3 This evidence includes:

- An investigation into the existing sewage, stormwater and water infrastructure immediately adjacent to the proposed development sites.
- An investigation into the current upgrading works to strategic water, stormwater and sewage infrastructure assets.
- Potential methodologies for servicing the proposed development area for water supply, stormwater and sewage disposal.
- An investigation into the effects of the proposed Canterbury Regional Policy Statement: Plan Change 1 and Variation 4 on sewage, stormwater and water supply capacities as a restriction to development.

3. EXECUTIVE Summary

Glovers Road and Kennedys Bush Road, Halswell (CSW4) and Milns Road, Halswell (CSW3)

3.1 It is proposed that these properties currently shown in the second and third stages of the sequenced release of land, be included in the first sequence.

3.2 I believe that this land can easily be provided with sewage connections at the same time as the land in the first sequence.

3.3 The section 32 report does not address long term holding costs of developers and that the provision of large portions of land into a particular stage of the sequencing should not be allocated to a single developer.

232 Highsted Road, Casebrook, Christchurch (CN3)

3.4 It is accepted that this land will not have sewer capacity until 2016 at the earliest. However, provision is sought for rezoning and initial development to occur in the first stage of the sequencing given the practical delays and timeframes associated with design, consenting, construction and sales which require resolution prior to any demand for sewer capacity.

Pt RS 14348, Kainga Road, Kainga

3.5 I believe that this land should be included in the UL and added to the first sequence due to the immediate availability of wastewater connections and water supply connections. The majority of proposed development land included in the UL does not have this availability of services and I would suggest that a large portion of the land included in the first sequence may not have connections for some time to come.

4. OAKVALE PROPOSALS

4.1 It is proposed by Oakvale to develop all of the land mentioned above into residential sites. The properties at Kainga, Milns and Highstead Roads currently have a rural zoning in the City Plan but are immediately adjacent to existing residential zoned and developed land. The properties at Glovers Road and Kennedys Bush Road are

zoned Special Purpose (South Halswell) Zone in recognition of their suitability for urban development.

4.2 All of these properties, with the exception of the Kainga holding, are included within the proposed Change No.1 Urban Limit.

4.3 All of the land is currently being used for agricultural purposes and contains various houses and sundry farm buildings. All of the sites are considered to be flat. Subject to a comprehensive feasibility, we do not foresee any significant construction issues in the development of these properties.

179 MILNS ROAD, HALSWELL

26 GLOVERS ROAD, HALSWELL

50 GLOVERS ROAD, HALSWELL

116 KENNEDYS BUSH ROAD, HALSWELL

122 KENNEDYS BUSH ROAD, HALSWELL

Water Supply

4.4 I am in agreement with Mr Theelans comments in his report stating that all areas within the UDS have the ability to be supplied with water supply through the provisions for new wells and pump stations identified in the City Council's LTCCP. The Oakvale land at Halswell can be incorporated into this approach.

4.5 An existing City Council water supply pipe has been laid in the public streets/roads outside these sites. All future development can be connected to these pipes. Modelling will be undertaken at the time of detail design to establish pipe sizing.

4.6 Consultation has been undertaken with the City Council's Asset and Planning Unit, Subdivisional Planning Engineer – Mr Ian Johnson. Mr Johnson confirms that there should be sufficient capacity but some upgrading may be required to the pipe on Glovers Road. Such

upgrades are relatively minor and can be funded privately by developers reliant on the upgrade.

Wastewater Drainage

4.7 There is currently no capacity for this land in the Council's Southern Relief Sewer, Pump Station 61 or the gravity sewer starting at the corner of Hayton and Wigram Roads. The Southern Relief Sewer is a trunk sewage main flowing from the south west of Christchurch towards the Bromley Treatment Plant.

4.8 Council have commenced construction of a new sewer pipe known as the Western Interceptor. This pipe will be laid generally parallel with the Southern Relief Sewer and will be used to provide additional capacity at times of heavy flow. Recent construction on this new pipe has started at Harrow St and will progress through town, over Hagley Park and up Blenheim Road to Dalgety Street. This pipe is programmed by CCC to be completed by 2012.

4.9 The southwest development areas (including Wigram CSW1 and Awatea CSW2) will only be able to progress once the Western Interceptor reaches Dalgety St and not before. There will be no further connections for the majority of the proposed development land shown within the UL until at least 2012

4.10 Consultation has been undertaken with Council Engineers to discuss the potential for this subject land to be included in the spare capacity provided by the Western Interceptor and any other infrastructure. Council Officer Mr Eoghan O'Neill – (Planning Engineer – Growth (Water and Waste) Network Planning and Asset Management Unit, CCC) was able to confirm that the inclusion of this land could be accommodated once the Western Interceptor was connected at Dalgety Street and the other upgrade works were completed.

4.11 The construction of sewage infrastructure within the proposed development and for the use of the proposed development, will be developer funded. This would include any off site infrastructure connecting to the existing public sewage pipes.

4.12 From a wastewater perspective there is no reason to favour the sequencing of development in the Wigram (CSW1) and Awatea (CSW2) Greenfield areas over Oakvale's land at Halswell.

Stormwater Drainage

4.13 Stormwater in this area is to be dealt with in terms of the Integrated Catchment Management Plan (ICMP) originating from the South-west Area Plan (SWAP). All stormwater treatment and storage will be dealt with in conjunction with neighbouring sites.

4.14 Land is either available within these sites or has been purchased by council downstream of the sites for the purposes of creating stormwater facilities. The application for the discharge consents involved in the ICMP have been submitted to Environment Canterbury for Resource Consent Approval. In general terms, stormwater management is being addressed by Council and is not considered to be a significant constraint to the feasibility of development of this land.

Conclusion

4.15 In terms of Policy 1 of the proposed Change No.1, the properties to be included in the UL are to have "*infrastructure either in place or able to be efficiently provided*". Regarding these Oakvale Halswell properties, the infrastructure can be available once the ICMP has been approved and the sewage upgrades are complete. The completion of these items of infrastructure will provide capacity not only for the Oakvale land in Halswell, but for the whole south-west area of the UL.

232 HIGHSTED ROAD, CASEBROOK, CHRISTCHURCH

Water Supply

4.16 I am in agreement with Mr Theelans comments in his report stating that all areas within the UDS have the ability to be supplied with water supply through the provisions for new wells and pump stations identified in the councils LTCCP. This CGL land at Casebrook can be incorporated into this approach.

4.17 An existing City Council water supply pipe has been laid in Claridges Road outside the site. It is proposed that all future development will be connected to this pipe. Modelling will be undertaken at the time of detail design to establish pipe sizing.

4.18 Consultation has been undertaken with the City Council's Asset and Planning Unit, Subdivisional Planning Engineer – Mr Ian Johnson. Mr Johnson confirms that there should be sufficient capacity for the development of this site.

Wastewater Drainage

4.19 There is currently no capacity for this land in the Council's downstream sewage infrastructure. Consultation has been undertaken with Council Officer Mr Johnson regarding this capacity and he has been able to confirm that no development of this land can commence until the sewage infrastructure in this area has been upgraded.

4.20 The wastewater infrastructure to be installed is known as the Grassmere Storage Facility and is budgeted to be completed in the 2016/2017 financial year.

Notwithstanding, given the practical timeframes of developing the land, it would be appropriate to provide for the rezoning of the land well prior to this date (i.e., within the first sequence). In particular, following any outline development planning and rezoning of the land in the City Plan, a subdivision design would need to be developed; subdivision, land use and discharge consents would need to be obtained; physical construction and approval of the subdivision would be required; and sales achieved before any demand for sewer infrastructure arose. Accordingly, the Grassmere Storage Facility is

unlikely to practically constrain development of Oakvale's land in Highstead Road.

4.21 The construction of sewage infrastructure within the proposed development and for the use of the proposed development, will be developer funded. This would include any off site infrastructure connecting to the existing public sewage pipes.

Stormwater Drainage

4.22 A discharge consent for stormwater off the developed site will be required from Environment Canterbury prior to the Subdivision Consent. It is considered that the property is outside of any flood ponding area and a discharge consent in accordance with the Council standards should not be difficult to obtain.

Conclusion

4.23 There is no allocation of properties to the first sequence in this Upper Styx area. The only infrastructure inhibiting the development of this Oakvale site is the downstream sewage capacity.

4.24 Oakvale accepts that sewage would not be available until 2016/2017. However, rezoning of the land in the first sequence is sought to enable residential development to occur, albeit with no connections made until sewer capacity is available.

PT RS 14348, KAINGA ROAD, KAINGA

Water Supply

4.25 I am in agreement with Mr Theelans comments in his report stating that all areas within the UDS have the ability to be supplied with water supply through the provisions for new wells and pump stations identified in the councils LTCCP. The Oakvale land at Kainga can be incorporated into this approach.

4.26 An existing City Council water supply pipe has been laid in Kainga Road outside the site. All future development can be connected to this pipe. Modelling will be undertaken at the time of detail design to establish pipe sizing.

4.27 Consultation has been undertaken with the City Councils Asset and Planning Unit, Subdivisional Planning Engineer – Mr Ian Johnson. Mr Johnson confirms that there is sufficient capacity in the existing water supply for this site.

Wastewater Drainage

4.28 There is a rising sewer pipe in Kainga Road outside the site. Council Officer Mr Ian Johnson has confirmed that there is sufficient capacity in this pipe to service this Oakvale Kainga property.

4.29 The construction of sewage infrastructure within the proposed development and for the use of the proposed development, will be developer funded. This would include any off site infrastructure connecting to the existing public sewage pipes.

Stormwater Drainage

4.30 A discharge consent for stormwater off the developed site will be required from Environment Canterbury prior to the Subdivision Consent. It is considered that the property is outside of any flood ponding area and a discharge consent in accordance with the Council standards should not be difficult to obtain.

Conclusion

4.31 In terms of Policy 1 of the proposed Change No.1, the properties to be included in the UL are to have "*infrastructure either in place or able to be efficiently provided*". Regarding the Oakvale Kainga property, the infrastructure is available now yet the land is not in the UL.

4.32 I would suggest that most of the land within the UL does not immediately comply with this Policy

4.33 I believe that this land should not only be included in the UL but added to the first sequence of development land based primarily on its availability of water and sewage connections.

5. ISSUES RAISED BY SUBMISSIONS/OFFICER'S REPORT

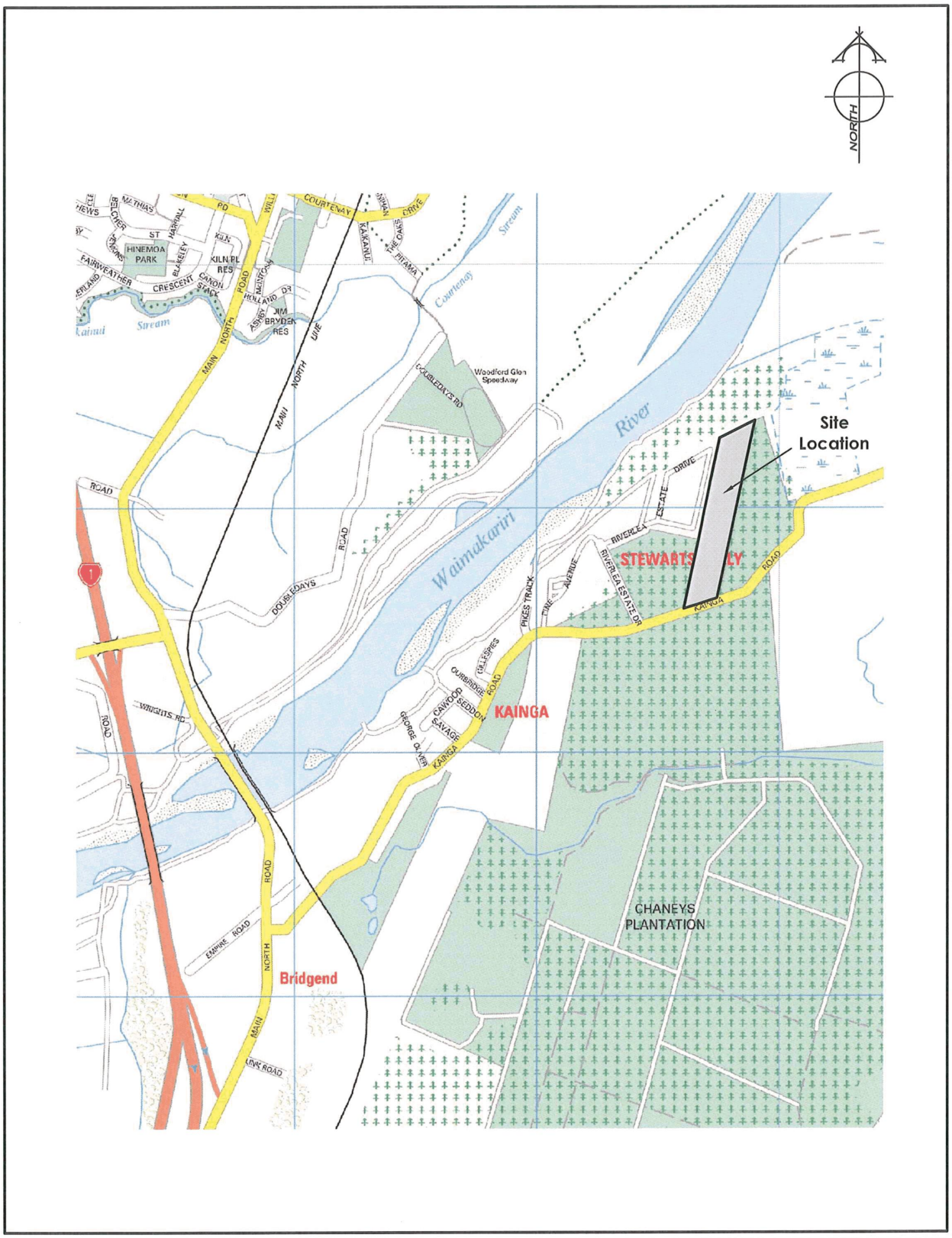
5.1 The evidence of Mr Mike Theelan predominantly deals with the issues surrounding water supply and sewage in the southwest. I am in general agreement with this evidence although there are some key facts regarding the sewage upgrading works that have been omitted. These facts are as follows:

a. There is currently no sewage capacity for the majority of the new development land within the UL.

b. There will not be any additional sewage capacity for the southwest until the Western Interceptor Sewer is fully complete.

c. The construction of the Western Interceptor will not be complete until at least 2012.

d. The funding of the sewage upgrade projects is not fully in place and the programme of funding has not yet been determined. There is a high probability that the construction of the Western Interceptor will be debt funded and the repayment of the cost of upgrade will be restricted by the sequencing.



DAVIE LOVELL•SMITH
PLANNING SURVEYING ENGINEERING

79 Cambridge Terrace
PO Box 679 Christchurch 8140,
New Zealand
Tele 0-3-3790 793
Fax 0-3-3795 664
E-mail: office@dls.co.nz

Location Plan
Riverlea Estate Drive
Kianga

Scale: 1:20000@A4
Date: March 09
Drawing No: S.17301
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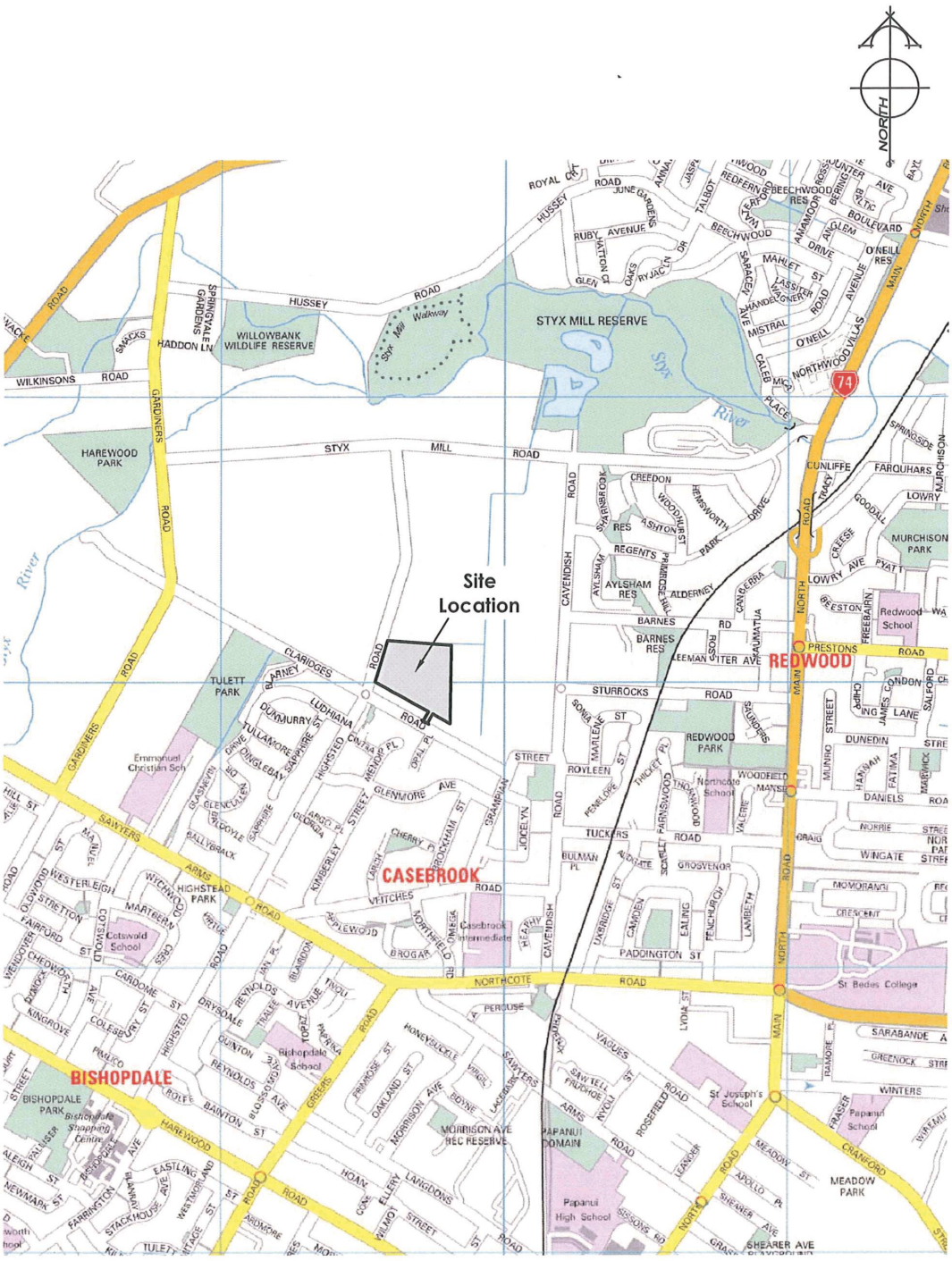

DAVIE LOVELL•SMITH
PLANNING SURVEYING ENGINEERING

79 Cambridge Terrace
PO Box 679 Christchurch 8140,
New Zealand
Tele 0-3-3790 793
Fax 0-3-3795 664
E-mail: office@dls.co.nz

Location Plan
232 Highsted Road
Christchurch

Scale: 1:20000@A4
Date: March 09

Drawing No: S.17301

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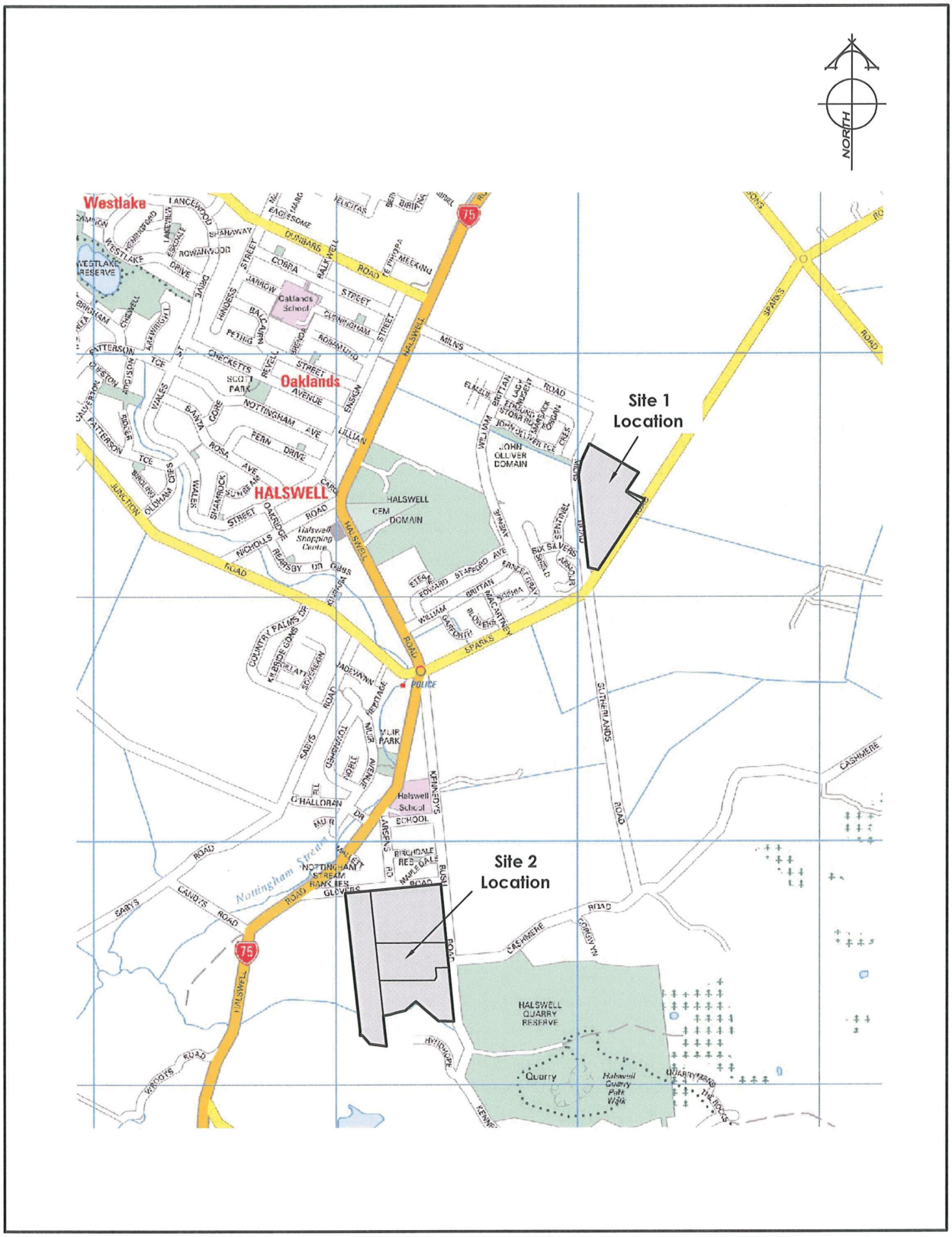

DAVIE LOVELL•SMITH
PLANNING SURVEYING ENGINEERING

79 Cambridge Terrace
PO Box 679 Christchurch 8140,
New Zealand
Tele 0-3-3790 793
Fax 0-3-3795 664
E-mail: office@dls.co.nz

Location Plan
Halswell
Christchurch

Scale: 1:20000@A4
Date: March 09

Drawing No: S.17301

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IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a hearing by the Canterbury Regional Council Hearing Panel on Proposed Change No. 1 to the Canterbury Regional Policy Statement Chapter 12A (Development of Greater Christchurch) including Variations 1, 2, 3 and 4.

STATEMENT OF EVIDENCE OF GEOFFREY GRAY MCGREGOR

ON BEHALF OF OAKVALE FARM LIMITED

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20 March 2009

AJP-135346-13-18-V1

EXECUTIVE SUMMARY

1. This evidence outlines the intent of the transport related objectives of PC1 in particular relation to the Oakvale sites. It is evidenced that the roading network surrounding all of the Oakvale sites has residual capacity to cater for further growth. In addition, it is noted that each of the sites are located in close proximity to public transport routes such that only minor re-routing would be required in order to provide suitable service.

2. Furthermore, the evidence provides a comparison between the Oakvale sites and other nearby Greenfield areas which have been considered suitable for immediate development. It is concluded, that from a transportation perspective, there is no logical reason to favour the comparison sites over the Oakvale sites subject to this submission.

3. Finally, it is suggested that the key transport related objectives of the staggered time framing for development set out in table 2, can be achieved through appropriately framed provisions and supporting policies and objectives in a district plan, noting that the Regional Council has the ability to submit on and thus influence such provisions

INTRODUCTION

4. My full name is Geoffrey Gray McGregor. I am a senior transport planner practising with ViaStrada Limited in Christchurch. ViaStrada is a resource management and traffic engineering consulting company that provides resource management related advice to local authorities and private clients. ViaStrada also has offices in Dunedin, Nelson and Auckland and works on projects nationwide.

5. I hold the qualifications of a Bachelor of Science with Honours and a Master of Science in Geography from the University of Canterbury. I am a member of the Institution of Professional Engineers New Zealand. I have had five years of experience as a resource management transportation planner with both Territorial Authorities and as a consultant.

6. From 2004-2005 I was employed as a transportation planner with the Christchurch City Council and was involved in assessing the traffic impacts of various developments within the City limits.

7. I have read the Environment Court's Code of Conduct for Expert Witnesses, as contained in the Consolidated Practice Note 2006, and have prepared my evidence accordingly. The evidence is within my area of expertise, except where I state that I am relying on what I have been told by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

SCOPE OF EVIDENCE

8. I have been requested by Oakvale Farm Ltd ('Oakvale') to present transportation planning evidence on their submissions and further submissions to the Canterbury Regional Council ('CRC') on Proposed Change No. 1 to the Canterbury Regional Policy Statement Chapter 12A (Development of Greater Christchurch) ('PC1') including Variations 1, 2, 3 and 4.

9. My evidence will address the key elements of Oakvale's submissions in the context of the relevant statutory considerations applying to PC1. For clarity, my evidence addresses each of the key points raised in submissions under separate subheadings. Accordingly, my evidence is set out as follows:

   i. Intent of PC1 Transport Related Policies and Objectives

   ii. Prescriptive vs Non-prescriptive Approach in Relation to CN3, CSW3 & CSW4

   iii. Mitigating Risks of a Non-prescriptive Approach in Relation to CN3, CSW3 & CSW4

   iv. Conclusions in Relation to CN3, CSW3 & CSW4

   v. Kainga

Source Documents

10. For the purpose of preparing this submission, I have generally familiarised myself with the issues, objectives, policies and methods outlined in the proposed plan change 1 and relevant supporting evidence.

11. I have reviewed the following documents when preparing this statement:

   (a) The section 42a report prepared by the CRC (comprising a number of separate statements of evidence), including the

officer recommendations on submissions and the recommended amendments to PC1 as notified.

(b) Proposed Change No. 1 and Variations 1, 2, 3 and 4 to the Canterbury Regional Policy Statement.

INTENT OF PC1 TRANSPORT RELATED POLICIES AND OBJECTIVES

12. In summary and relative to Oakvale's submission, there are two important strands to the overall transport related objectives of PC1. These are as follows:

- Firstly, to ensure that development is appropriately located such that the use of existing transportation infrastructure and public transport services is able to be optimised without necessitating further infrastructure provision into new areas.

- Secondly, to ensure that the development of transportation infrastructure and public transport services is appropriately located, timed and funded in conjunction with new land use development.

13. Of particular relevance to this submission and relative to the second point above, policy 6 sets out the proposed location and timing of the identified Greenfields areas.

TRANSPORTATION FACTORS RELEVANT TO THE TIMING OF GROWTH IN CN3, CSW3 & CSW4

14. The Oakvale land located in the Styx (CN3) area is not scheduled for development until post 2017. However an analysis of current volumes on collector and arterial roads which link the site to the wider road network shows that there is residual capacity to accommodate some of the deferred development (as per table 2 of policy 6) presently. This raises the question as to the justification for a blanket delay on development until 2017.

15. Furthermore, it is noted that the proposed Greenfields development area - Belfast CN1 has provision for the construction of 1140 households between 2007-2016 as per table 2. It appears that traffic

generated by this particular area will require direct access onto either Main North Road or Johns Road, both part of the strategic state highway network. Given the volumes that each of these roads carry and their strategic status, it is not particularly desirable to create additional accesses on to either road.

16. From a safety and efficiency perspective, it is certainly more preferable to have access to a local or collector road, both of which have a significant property access function. The Styx CN3 land subject to this submission has potential access on to both Claridges and Highsted Roads, both classified as collector routes in the context of the City Plan roading hierarchy and as noted earlier, both roads have spare capacity to cater for additional traffic.

17. Moreover, whilst traffic from both sites (CN1 & CN3) is likely to access the city via a similar end-route (e.g. Main North Road, Papanui Road, Cranford Street), the Styx land has a closer relative proximity to the city and comparably favourable route options, in terms of both number and capacity.

18. It follows, that from a traffic perspective, there is no justification for favouring the CN1 land over the CN3 land for immediate development as the most appropriate policy and method to achieve the PC1 objectives.

19. In the case of the Oakvale land located in Sparks Road CSW3 and Halswell CSW4, the existing surrounding network provides some residual capacity due to the number of alternate routes available and the short term future provision of the Southern Arterial motorway, due for completion in 2013, which provides a linkage to the city from Halswell Junction Road. This enables a more efficient dispersal of vehicles over the existing network.

20. In terms of a comparative analysis with the Wigram CSW1 and Awatea CSW2 areas (where development is scheduled to occur between 2007 and 2016), there again is no particular reason from a transport perspective to favour Wigram and Awatea for immediate development over Oakvale's land in CSW3 and CSW4.

21. Whilst in this situation, the likely routes between the Oakvale sites and the City will be different from the routes between the Wigram and Awatea areas and the City, it is noted that all routes including Halswell/Lincoln Road, Sparks Road, Main South Road, Blenheim Road and Riccarton Road are congested during peak times. However, the future provision of the southern arterial extension is likely to relieve congestion on these routes and would also cater for traffic volumes associated with all of these Greenfields areas.

22. In respect to public transport, all three areas subject to this submission are located in close proximity to a number of existing bus routes. These routes could be easily altered and adapted to provide for the public transport demands associated with growth from these areas. This would not require any significant additional infrastructure provision. Any additional patronage would assist in ensuring the future viability and level of service of these existing bus services.

23. Furthermore, the proposed capital programme outlined in the Draft Long Term Council Community Plan 2009 – 2019 (LTCCP) outlines a number of infrastructure improvements to the public transport system including, as specific to this submission, the Cranford bus priority route, the Metrostar bus priority route and the Halswell bus priority route. The Metrostar and Halswell routes are scheduled for completion in 2015-16 & 2012-13 respectively whilst the Cranford route has a completion date in 2017-18.

24. Moreover, the construction of the new Christchurch transport interchange, due for completion in 2013, will ensure additional capacity for the provision of new routes and/or an increase in frequency on existing routes which could serve these Greenfield development areas.

25. It follows that from a public transportation point of view, there is also no reason to defer development in these areas until 2017.

CONCLUSIONS IN RELATION TO CN3, CSW3 & CSW4

26. It is considered that there is some residual capacity on the transport network surrounding the subject sites, to accommodate some

development now and that additional planned infrastructure upgrades as well as public transport provisions will cater for further growth over time.

27. It is also noted that the from a traffic perspective, there is no justifiable reason to defer development on the subject sites when compared to nearby Greenfield areas which are considered suitable for immediate development as contained in table 2, policy 6.

KAINGA

28. Urban development of the Oakvale land located in Kainga is consistent with transport related issues outlined in a number of the objectives in PC1. From a transport perspective, the evidence of Mr Woods considers that objective 1 seeks *"the optimisation of existing transport systems rather than create demand for extended infrastructure into new areas" [Pg.8, Para. 28]*. Furthermore, objective 3 compliments objective 1 by considering limits on where future growth takes place, and in particular in relation to transport, Mr Woods uses the example of public transportation services and the benefits of consolidation for achieving a level of service which makes the system a viable option

29. Essentially these two objectives seek to establish future development in areas already served by roading and public transportation infrastructure.

30. In the case of Kainga, the Oakvale land has direct access on to Kainga Road which is classified as a rural collector road in the context of the Christchurch City Plan roading hierarchy. Current volumes on Kainga Road reveal that there is residual capacity to cater for further development. In addition, the land has direct access to an existing bus route (number 480) and further growth in this area could provide the impetus for improvement to the existing service, particularly in relation to frequency.

31. This contrasts to the designated Greenfields area CN5 (Christchurch Golf Resort) where its location is such that new roading infrastructure would be required in order for access to be obtained. In addition, given

the isolation of this pocket of land, no existing public transport is available.

32. It should also be noted that any additional capacity issues (which objective 8 seeks to avoid) in relation to access to Christchurch City from the north, as a result of growth at Kainga, would be of little difference to those experienced by further development at localities such as Pegasus, Woodend, Rangiora and Kaiapoi.

Summary

33. In respect to the transport related objectives in PC1, Greenfields Development on the Oakvale site at Kainga is appropriate and could be considered more appropriate and certainly no less, than other Greenfields areas included in PC1

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a hearing by the Canterbury Regional Council Hearing Panel on Proposed Change No. 1 to the Canterbury Regional Policy Statement Chapter 12A (Development of Greater Christchurch) including Variations 1, 2, 3 and 4.

STATEMENT OF EVIDENCE OF JEREMY GOODSON PHILLIPS
ON BEHALF OF
OAKVALE FARM LIMITED
MAURICE CARTER LIMITED
AVONHEAD MALL LIMITED

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20 March 2009

AJP-135346-13-15-V1

INTRODUCTION

1. My full name is Jeremy Goodson Phillips. I am a senior planner and Director practising with ViaStrada Limited in Christchurch. ViaStrada is a resource management and traffic engineering consulting company that provides resource management related advice to local authorities and private clients. ViaStrada also has offices in Dunedin, Nelson and Auckland and works on projects nationwide.

2. I hold the qualifications of a Bachelor of Science in Geography and Management Science from the University of Canterbury and a Master of Science with Honours in Resource Management from Lincoln University, the latter attained in 2001. I am a graduate member of the New Zealand Planning Institute and a member of the Resource Management Law Association. I have had six years of experience as a resource management planner with both Territorial Authorities and as a consultant.

3. From 2003-2004 I was employed as an urban analyst with the Christchurch City Council and was involved in the initial development of the Urban Development Strategy. In this role, I prepared a report entitled *'Existing Urban Growth Directions for Metropolitan Christchurch'*— a review of existing District Plan objectives and policies directed toward Urban Growth. This document is referenced as a source document in the section 32 report for PC1.

4. I have read the Environment Court's Code of Conduct for Expert Witnesses, as contained in the Consolidated Practice Note 2006, and have prepared my evidence accordingly. The evidence is within my area of expertise, except where I state that I am relying on what I have been told by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

SCOPE OF EVIDENCE

5. I have been requested by Oakvale Farm Ltd ('Oakvale'), Maurice Carter Ltd ('MCL') and Avonhead Mall Ltd ('AML') to present planning evidence on their submissions and further submissions to the Canterbury Regional Council ('CRC') on Proposed Change No. 1 to the Canterbury Regional Policy Statement Chapter 12A (Development of Greater Christchurch) ('PC1') including Variations 1, 2, 3 and 4.

6. My evidence will address the key elements of the submissions in the context of the relevant statutory considerations applying to PC1. For clarity, my evidence addresses each of the key points raised in submissions under separate subheadings. Accordingly, my evidence is set out as follows:

   i. Scope of Evidence
   ii. Key Conclusions
   iii. Kainga
   iv. Halswell
   v. Sparks Road (CSW3)
   vi. Upper Styx (CN3)
   vii. Key Activity Centres (Ferrymead and Avonhead)
   viii. Heritage & Amenities
   ix. Quarries
   x. Conclusions

7. In forming the opinions that I have expressed in this evidence, I have relied in part on the evidence and conclusions of the following experts:

   - Mr Andrew Hall, an engineer with Davie Lovell-Smith Ltd.
   - Mr Geoff McGregor, a traffic planner with ViaStrada Ltd.

Source Documents

8. I have reviewed the following documents when preparing this statement:

   i. The section 42a report prepared by the CRC (comprising a number of separate statements of evidence), including the officer recommendations on submissions and the recommended amendments to PC1 as notified.

   ii. The Greater Christchurch Urban Development Strategy.

   iii. Canterbury Regional Policy Statement, June 1998.

   iv. Proposed Change No. 1 and Variations 1, 2, 3 and 4 to the Canterbury Regional Policy Statement.

   v. Relevant submissions and further submissions on PC1 and its variations.

KEY CONCLUSIONS

9. My evidence below draws the following key conclusions:

   i. **Oakvale's land at Kainga should be located within the urban limits and provided for as a Greenfield Residential Area**, on the basis that:

      a) Servicing infrastructure is existing and can be readily provided due to an absence of capacity constraints;

      b) Roading infrastructure and public transport connections are existing, and residual road network capacity can accommodate any increased traffic volumes;

      c) Emissions from vehicles will be of a trivial scale and no greater than those from other proposed Greenfield areas of a comparable or greater distance from central Christchurch;

and

d) The land at Kainga can be more readily provided for in terms of roading and public transport infrastructure and has no greater servicing constraints than the comparable Greenfield Residential area supported by CRC at Christchurch Golf Resort (Spencerville). The Kainga land has the added advantage of adjoining an existing urban settlement. In terms of section 32(3)(b), providing for Kainga within the urban limits is more appropriate, with regard to efficiency and effectiveness than the Christchurch Golf Resort.

ii. **Oakvale's land at South Halswell should be prioritised within the 2007-2016 timeframe in Table 2, Policy 6 and should be recognised as a distinct Growth Area (i.e., CSW7)**, on the basis that:

a) The Special Purpose (South Halswell) zoning that has applied to the land since 2003 has contemplated urban development and to further defer development to 2017 and beyond is unreasonable, would result in significant costs to the landowner(s), and would be an inefficient and ineffective use of the zoned land resource. For these reasons, this land also warrants distinction from growth area CSW4.

b) Servicing infrastructure is constrained principally in respect of sewer capacity. This constraint will be alleviated by completion of the Western Interceptor which is scheduled to occur in 2012. This constraint exists equally for CSW1 (Wigram) and CSW2 (Awatea) such that there is no basis for imposing a difference in development sequencing on the grounds of servicing and infrastructure.

c) Roading infrastructure and public transport connections are existing, and residual road network capacity can accommodate any increased traffic volumes prior to 2017. Transport infrastructure constraints do not provide a basis for

favouring the development sequencing of Wigram (CSW1) and Awatea (CSW2) over Oakvale's land.

iii. **Oakvale supports the 2007-2016 sequencing priority afforded to 175 households within CSW3. However, additional households could be provided within this timeframe for the same reasons cited in (ii)(b) and (c) above.**

iv. **Oakvale's land at Upper Styx (CN3) should be prioritised within the 2007-2016 timeframe in Table 2, Policy 6**, on the basis that:

a) Roading infrastructure and public transport connections are existing, and residual road network capacity can accommodate any increased traffic volumes prior to 2017. Transport infrastructure constraints do not provide a basis for favouring the development sequencing of Belfast s293 land (CN1) over Oakvale's land.

b) Servicing infrastructure is constrained principally in respect of sewer capacity. This constraint will be alleviated by completion of the Grassmere Storage Facility which is scheduled to occur in 2016/2017. Given that servicing infrastructure is expected to be fully available at the beginning of the second sequencing window, it is necessary to enable the rezoning of the land in the first sequence. In this respect, prior to any demand for sewerage infrastructure, lengthy timeframes will be associated with preparing an outline development plan and plan change; finalising subdivision design; obtaining necessary consent approvals; constructing the subdivision; selling allotments; and, building dwellings.

v. **The Ferrymead and Avonhead Suburban (District) Centres should be afforded key activity centre (KAC) status by PC1 given their function, consistency with the definition for such centres in PC1 and their consistency with other KAC's identified in PC1**.

vi. **Matters within PC1 associated with character and identity,**

heritage values, and areas of special amenity, are beyond the functions of the CRC in terms of section 30 of the Act. Accordingly, the relevance and content of objective 4, policy 2 and policy 7 should be reconsidered.

vii. PC1 fails to adequately provide for or recognise the opportunities to redevelop exhausted quarries in the Rural Quarry Zone for business activities. In doing so, no regard is had to the existing environmental effects of quarrying and associated existing use rights, or the efficiency of utilising an existing physical land resource with associated investments and improvements.

KAINGA

10. Oakvale's submission on Variation 4 sought the inclusion of land at Kainga within the proposed urban limits, on the basis that:

    i. The revised air contours proposed in Variation 4 provide for the reallocation of future residential development opportunities elsewhere within metropolitan Christchurch; and

    ii. The proposed land at Kainga is accessible, abuts an existing urban area, and is able to be readily serviced by existing urban infrastructure and services.

11. The rationale for adopting an urban limit is detailed in the evidence of Mr McCallum on behalf of the CRC and generally, this is not contested.

12. In respect to Kainga specifically, the section 42a report opposes the inclusion of Oakvale's land within the urban limits on the basis that it would not achieve consolidated urban development, may result in cumulative effects associated with traffic congestion and emissions to air and may not be supported by existing urban infrastructure.

13. In response, it is noted that the existing urban settlement at Kainga can be readily expanded to the east, with no servicing infrastructure constraints inhibiting such expansion. This is documented in the evidence of Mr Hall.

14. Whilst traffic congestion is a relevant consideration, Mr McGregor's evidence identifies sufficient road network capacity to accommodate the relatively small volume of traffic anticipated from Kainga and Oakvale's land. Existing public transport connections and physical road infrastructure also make development of this land immediately viable from a road network infrastructure point of view.

15. Emissions to air are to be expected with any transport based activity. In this case, given the small scale of urban land proposed such emissions and effects will be trivial relative to those from new Greenfield areas identified in similarly or further distant locations from Christchurch (e.g., Pegasus, Woodend, Rangiora, Kaiapoi, Lincoln, Rolleston)

16. In respect of a preference for urban consolidation and form, Greenfield development is accepted by the CRC in outlying areas such as Lincoln, Rolleston, Prebbleton, Spencerville, Kaiapoi and Woodend. Whilst these areas contain existing urban settlements, so too does Kainga. Notably, Kainga has existing urban infrastructure which can efficiently and effectively service any new Greenfield development. Based on Mr Hall's evidence, it is understood that this is a point of distinction from much of the new Greenfield land proposed by CRC, which does not have immediate access to urban infrastructure and services.

17. Notably, the CRC section 42a report accepts Greenfield development of 150 households at Christchurch Golf Resort in the vicinity of Lower Styx Road at Spencerville. Such land is detached from existing urban settlements and roading and is unlikely to have immediate access to servicing infrastructure, or public transport connections. Such land offers no benefits compared with Kainga in respect of urban consolidation and is less favourably placed in respect of roading and transport considerations. For these reasons, it is considered that

Oakvale's land at Kainga should be preferred for Greenfield development.

18. In the context of section 32 of the Act, it is considered that providing for Greenfield development at Kainga in Policy 6 and locating Oakvale's land within the urban limits provided for by Policy 1, would be the most appropriate means of achieving objectives 1, 3, 4, 7 and 8, and the purpose of the Act. In particular, this would provide for effective and efficient use of existing urban infrastructure, with minimal financial or environmental costs.

HALSWELL

Sequencing

19. Oakvale submitted that their land (on the corner of Glovers Road and Kennedy's Bush Road) within area CSW4 should be prioritised within the 2007-2016 sequencing window set out in Table 2 of Policy 6. As notified, and recommended in the s42a report, this land is identified within the 2017-2026 and 2027-2041 sequencing windows.

20. In establishing a preferred sequence for urban development in Table 2 of Policy 6, the section 32 report concludes that the proposed approach is the most appropriate for achieving the objectives of PC1 and ultimately the purpose of the Act. In respect of the specific relief sought by Oakvale, the s42a report notes that *'it is beyond the capacity of CCC to both practically and financially service this land for development within the 2007-2016 development period'*[1].

21. In my opinion the sequencing proposed, as it relates to Oakvale's land, is neither efficient nor effective in achieving the enabling objectives of PC1, which among other things seek to *'**bring about**… Greenfields development on the periphery of Christchurch City… which enables the efficient provision and use of network infrastructure'* (Objective 1) and *'**provide for** and manage urban growth…'* (Objective 3) (my emphasis added). These objectives principally seek to provide for urban growth

[1] Section 42a report, Volume 2, Page 648

in appropriate circumstances, rather than fundamentally seeking to constrain growth.

22. Oakvale's land at Glover's Road is currently zoned (Special Purpose (South Halswell) Zone) in the Christchurch City Plan in recognition of its suitability for residential development. This zoning has been in place in the City Plan since May 2003 following the settlement of appeals on the Plan. Notably, both the Christchurch City Council ('CCC') and CRC were parties to a memorandum of consent before the Environment Court, confirming the appropriateness of this zoning (refer **Attachment 1**).

23. The zoning anticipates urban development subject to an outline development plan which addresses a number of key development principles and constraints[2]. Notably, all of the constraints identified within the City Plan can be resolved through the outline development plan process (e.g., road connections, stormwater management, green corridors) in a manner consistent with that contemplated by Policy 8 of PC1.

24. Mr Hall's evidence will address stormwater and other servicing constraints for this land in more detail, and Mr McGregor will address transport and road network constraints. However, it is suffice to say, that the infrastructure constraints for Oakvale's land are not

[2] These principles and constraints are set out in clause 1.12 of the City Plan and include:
(a) development at a density which makes efficient use of the land;
(b) the establishment, in public ownership, of a "green corridor" along the southern boundary of the site adjacent to the low spur and watercourse. The corridor will result in the extension of a green link between State Highway 75 and the Halswell Quarry Park, provide a clear physical barrier to the expansion of the city in accordance with Policy 6.3.10 and maintain separation between Halswell and Kennedys Bush;
(c) the green corridor being provided in part as "environment compensation" (Policy 6.3.14) including open space required for stormwater retention and provision of a public reserve;
(d) a link road being established between Kennedys Bush/Cashmere Roads and Glovers Road or State Highway 75, such that development of the land will not rely on access to State Highway 75 via Larsens Road past Halswell School;
(e) sufficient land be set aside to enable retention of stormwater on site and the prevention of any increases in peak discharges to the sensitive Halswell River catchment;
(f) that a rural zoning be retained over two blocks of land adjacent to the southern boundary of the main block containing existing dwellings;
(g) that any new road access to State Highway 75 be confined to a location acceptable to New Zealand Transport Agency, with possible closure of Glovers Road;
(h) arrangements to provide equity between the land owners for the benefits and costs of the development, unless the development is undertaken on the basis of the area being in single ownership;
(i) that development be undertaken, and if necessary staged, in accordance with a development plan, to achieve the principles described in (a) - (h) above.

insurmountable and will be resolved by planned roading (e.g., the Southern Arterial) and infrastructure (e.g., the Western Interceptor) improvements. Notably, any constraints faced by Oakvale's land are equivalent to those constraints faced by land at Wigram (CSW1) and Awatea (CSW2) which is also subject to an equivalent Special Purpose zoning in the City Plan but is identified within the 2007–2016 sequencing window in PC1.

25. In my opinion, further deferring the urban development of land which has a well established zoning that anticipates urban development occurring is unreasonable. More relevantly, I consider it does not effectively or efficiently provide for urban growth as contemplated by objectives 1 and 3. Such an approach also results in inefficient use of the currently zoned physical land resource, with Oakvale's reasonable expectation of developing their site in the short term unreasonably delayed. This has resultant holding and opportunity costs which are potentially significant and do not provide for the economic and social wellbeing of Oakvale. Such costs do not appear to have been considered in the section 32 analysis undertaken by the CRC.

26. I note that the Environment Court has been particularly critical of the Special Purpose zoning provisions of the Christchurch City Plan and the unreasonable deferral of development by the City Council to date (see **Attachment 2**). Of particular note, the Court stated in 2004[3]:

> *'The critical point in relation to 1.11 is that* [the Special Purpose Awatea zoning] *is an interim provision with the intention that a variation to the Plan would be introduced by 1 October 2001. The zone was introduced as a result of submissions on the Plan in 1999, and, accordingly, it was anticipated as a short-term measure...*
>
> *…We have concluded that this zone was intended as a catch-all temporary measure until such time as the Council could undertake a more detailed analysis within two and a half years of the decision on the Plans. From this we conclude that it was never intended to be a long-term zoning and this is reflected in the fact that the Rural 2 zone should generally apply within the area (even though the Rural zoning was not appropriate), the Council then*

[3] *C110/2004 Meadow Mushrooms v CCC and CRC* (pages 10, 11 and 19)

accepted that Meadow Mushrooms' activities needed to be provided for separately.

That we are still dealing with these provisions some three years after the date by which a variation was to be introduced is of concern to the Court. We question whether putting land into a temporary zone, which is essentially a holding pattern while proper assessments under the Act are made, is an appropriate basis to promulgate an operative plan…

…Although the Council remained concerned at achieving an integrated management outcome for this part of Christchurch, we do not consider that to mean that the Council should fail to make a decision as to the appropriate zoning on the basis that it has an option to do so in the future. Failure to undertake the obligations in terms of the Act and assess the appropriate zoning is as much a failure of integrated management as ad hoc decisions on a case by case basis. In our view the best interests of the Act and integrated management are served in this case by clearly providing for an activity which should be permitted on the site and for which future expansion should also be provided. The best method of achieving this is to give clear signals in terms of the Plan as to what is currently envisaged for surrounding property owners when considering development in this area'.

27. Put simply, Oakvale's land has been subject to a short term and temporary zone that was only ever intended to provide sufficient time for the resolution of any outstanding constraints to urban development. This zoning has been in place since 2003 and the land has been given inadequate priority by the Council in terms of servicing and infrastructure requirements. To further defer and delay development to 2017 or later on the basis that such infrastructure is not presently planned is unreasonable.

28. Furthermore, there is no basis for differentiating the development sequencing of the Special Purpose zones at South Halswell, Wigram and Awatea (i.e., CSW4, CSW1 and CSW2 respectively). All three zones were established as a short-term measure, whilst detailed analysis was undertaken as a precursor to rezoning and development. All three zones have servicing demands that require prioritisation collectively so as to enable development to proceed forthwith.

29. Given this context, it is considered that the proposed sequencing in Table 5 for CSW4 is inequitable and unjustified, it will be inefficient and

ineffective in terms of achieving the enabling objectives of PC1, and it will result in the inefficient use of a zoned land resource.

Greenfield Area Identification

30. A technical matter relating to Oakvale's land at Halswell is that of its identification within PC1.

31. Map 1 and the corresponding detailed maps promulgated with PC1 as notified and as part of the CRC section 42a report identify Oakvale's land at Halswell as a residential Greenfield development area (see **Attachment 3**). However, these maps do not clearly associate this land with any surrounding Greenfield areas (e.g., CSW4 or CSW5). In particular, the maps identify Oakvale's land within a stand-alone Greenfield area defined by a red dotted line extending along Glovers Road to the north, Halswell Road to the west, Greens Drain to the south[4], and Kennedy's Bush Road to the east.

32. CSW4 to the northwest is separated by existing residential properties along the north side of Halswell Road. CSW5 to the northeast is separated by Kennedy's Bush Road (and is shown with a clearly distinct boundary).

33. In the absence of any clear label, it has been assumed by Oakvale that the area falls within CSW4 and submissions and evidence have been prepared on this basis.

34. However, based on the evidence above regarding the sequencing of this land, I consider that this particular area should be separately recognised and provided for. In particular, the rationale advanced above for providing development sequencing within the 2007-2016 timeframe is unique to the Special Purpose (South Halswell) zone. Specifically, this zone has been in place for some time and provides a clear expectation of urban development. The same cannot be said for the remainder of the CSW4 Greenfield area which is subject to a conventional Rural 2 zoning in the City Plan. Accordingly, if it is

[4] The s42a report recommends that this southern boundary be extended further south.

accepted that South Halswell should be afforded the same development priority as the other Special Purpose Zones at Wigram and Awatea on the basis of consistency, it is suggested that this would most appropriately be provided for with the use of a specific growth area reference in Table 2, Map 1 and Map H6 (e.g., 'CSW7- South Halswell').

SPARKS ROAD (CSW3)

35. Oakvale owns land adjoining Sparks Road and Milns Road that falls within the Greenfield area labelled CSW3 in PC1. As a result of Variation 4, the CRC has included 175 households within the 2007-2016 sequencing window for CSW3. A further 1455 and 180 households are provided for between 2017-2026 and 2027-2041 respectively.

36. Put simply, Oakvale supports the inclusion of 175 households within the immediate sequencing window. However, I consider that additional household numbers could be provided for within the 2007-2016 timeframe. In this respect, I note that the urban infrastructure constraints for CSW3 are the same as those constraints facing the Special Purpose (South Halswell) Zone, Wigram (CSW1), and Awatea (CSW2). Oakvale's land at CSW3 is also physically adjacent to existing urban settlements in Halswell.

37. On this basis, and for the same reasons advanced above in respect of the Special Purpose (South Halswell) Zone, I consider that provision for additional household numbers should be made in CSW3 between 2007-2016.

UPPER STYX (CN3)

38. Oakvale's submission sought the inclusion of the Upper Styx area within the 2007-2016 sequencing window of Table 2, Policy 6.

39. The section 42a report opposed this relief on the basis that *'other Greenfield areas in that area are more easily planned for and integrated with infrastructure during the period 2007-16'.* It is not clear

from the section 42a report what the other Greenfield areas in the north of Christchurch are 'that are more easily planned for and serviced', given that only the Belfast s293 land is afforded priority within the 2007-2016 window.

40. Regardless, the evidence Mr McGregor has confirmed that the Upper Styx area has no significant transportation constraints which preclude development from occurring prior to 2017. Furthermore, area CN3 is more favourably placed in terms of transport and road network infrastructure than the Belfast s293 land located further to the north.

41. In terms of servicing infrastructure, the evidence of Mr Hall has identified a constraint in sewer capacity for area CN3 that will be resolved with the planned completion of the new Grassmere storage facility in 2016/2017. In all other respects, servicing infrastructure can be readily provided to area CN3.

42. Given that the only constraint to immediate development of area CN3 is to be resolved by 2016/2017, it is considered appropriate to provide for rezoning to occur within the 2007-2016 sequencing window. In this respect, it is noted that physically achieving development prior to 2016 for this land is unlikely. In particular, prior to any demand for sewerage infrastructure, significant time will be required to initiate and conclude a District Plan change (and outline development plan), design and coordinate a subdivision layout, lodge and obtain necessary consent approvals, physically construct any subdivision, sell allotments and build new dwellings. By such time that sewer capacity is required, it is likely to be available. In the event that it is not, zone rules and/or conditions on any subdivision consent could be readily implemented to appropriately manage the timing of connections.

43. Should the sequencing of area CN3 not be advanced, Oakvale and other land owners will be faced with sufficient infrastructure capacity for their land as of 2016/2017 but a planning regime which lags behind with timeframes for development as prescribed in PC1.

KEY ACTIVITY CENTRES (FERRYMEAD AND AVONHEAD)

44. AML's submission sought that the existing retail centres at Avonhead Mall and Ferrymead be identified as Key Activity Centres ('KAC') in PC1.

45. Avonhead Mall is zoned Business 2 in the Christchurch City Plan and is identified as a Suburban (District) Centre.

46. A large area of land at Ferrymead has recently been confirmed as a Suburban (District) Centre with Business 2 zoning, following an Environment Court decision on Variation 86 to the Christchurch City Plan[5]. This new zoning includes specific provisions which promote and require the development of a mixed-use centre, incorporating effectively integrated residential, retail and commercial activities.

47. The section 42a report opposes AML's submissions seeking KAC status for the two centres above, citing that neither satisfies the definition of a KAC as proposed in PC1, as follows:

> *Key existing and proposed commercial/business centres identified as focal points for employment and the transport network and suitable for more intensive mixed-use development. These centres are intended to:*
>
> > *• provide for the facilities and services necessary to support the planned community, and*
> >
> > *• encourage economic and business activity and interaction, and*
> >
> > *• broaden the mix of uses appropriate to the centre, including high density residential provision within and adjoining the Key Activity Centre, and*
> >
> > *• provide major focal points for the community, and*
> >
> > *• support the development of the principal public transport and cycling networks and the ability to change transport modes, and*
> >
> > *• encourage pedestrian access to and within these centres.*

48. In my opinion, both Avonhead Mall and Ferrymead align with the particulars of the definition and to exclude them would involve an

[5] *Sloan and Ors. V CCC C135/2008*

artificial and arbitrary judgement at odds with the basis for selecting other KAC's identified in Policy 5.

49. Furthermore, including Avonhead and Ferrymead as KAC's would not result in any conflict with other KAC's identified in Policy 5 or their catchments, nor would it undermine their function, vitality or amenity.

50. In the case of Avonhead Mall and the KAC definition proposed in PC1, this currently zoned business centre:

- Provides approximately 8,000m^2 of floor space, including a supermarket. In addition to conveniently providing for the needs of the local community, the centre provides a local centre for employment.
- Is well served by the existing road network, with Merrin Street (a minor arterial route) and Withells Road (a collector route) providing convenient access to the site and nearby State Highways 1 (Russley Road) and 73 (Yaldhurst Road).
- Is well served by public transport with bus routes 3 and 24 passing the site.
- Provides opportunities for mixed use development, with low density residential activity currently surrounding the mall and medium-density residential opportunities afforded to the site under the existing Business 2 zoning.
- Is adjacent to Merrin Primary School, such that the locality already offers a community focal point with associated benefits such as convenience and trip sharing, pedestrian accessibility, community interaction, etc.

51. All of these factors accord with the KAC definition above, such that there is no reason to exclude Avonhead Mall from the list of KACs.

52. In the case of Ferrymead, the Woolworths/Mitre 10 Mega block now enjoys a Business 2 zoning which provides for some 30,000m^2 of retail floor space (compared with approximately 47,000m^2 retail floor space

at Riccarton), buildings up to 20m in height, residential and commercial activities provided above ground floor level, and the development and implementation of outline development plans so as to achieve a diverse mixed use outcome and high quality urban design. A further 6,500m^2 of retail floor space is permitted to occur on the corner of Waterman Place and Ferry Road. Existing retail, commercial and service activities are otherwise found throughout Ferrymead (along Ferry Road, Waterman Place and Settlers Crescent) and medium-high density residential development has recently occurred in the area (e.g., Settlers Crescent and *Waters Edge* on Ferry Road/Tidal View). It is also understood that the City Council is undertaking further investigation into the wider Ferrymead area and its development as a District Centre.

53. Ferrymead is also well served by public transport (bus routes 3,21, 24 and 35); key road connections (Ferry Road- a minor arterial route, Humphreys Drive- a minor arterial route, and State Highway 74); and cycle lanes (Ferry Road).

54. Given these attributes and the significant residential catchment of Mt Pleasant, Redcliffs and the Sumner bays, the existing Ferrymead District Centre and its anticipated development will quite clearly meet the criteria for a KAC as defined in PC1.

55. With the anticipated growth and development of this centre in the near future, it is considered prudent to actively identify this location as a KAC and provide a clear basis for improved development of business activity, mixed use activity (incorporating residential and community uses), and integrated and well planned transport connections and facilities. To do otherwise risks piecemeal development of the area or at the very least a policy direction at odds with that expressly sought by the Environment Court[6].

56. Based on the matters above, I consider that the identification of Avonhead Mall and Ferrymead as KAC's would be the most appropriate way to achieve objectives 1, 5, 6 and 7 of PC1 and the purpose of the Act. To exclude these existing zoned business centres

[6] *Sloan and Ors. V CCC C3/2008*

would potentially undermine their function, vitality or amenity and place these centres at odds with comparable centres otherwise identified in Policy 5.

HERITAGE & AMENITY

57. Oakvale's submission generally opposed the inclusion of matters of character and identity, heritage values, and areas of special amenity within PC1, on the basis that such matters are not of regional significance and are beyond the functions of the CRC in terms of section 30 of the Act.

58. Whilst this submission is elaborated on in legal submissions by Oakvale's counsel, I consider that such matters can (and should) be more appropriately addressed through the District Plan review and change processes. In the absence of defining any specific amenity, heritage or character/identity matters of regional significance, I consider that these need not be addressed by PC1.

QUARRIES

59. MCL's further submission on PC1 supported in part, the submission of Winstone Aggregates. In particular, MCL agrees that PC1 fails to adequately provide for or recognise the opportunities to redevelop disused quarry sites in the Rural Quarry Zone in the future for business activities.

60. MCL sought that the entire Rural Quarry Zone in the Christchurch City Plan be shown as *Greenfield Outline Development Plan Area-business* on the relevant planning maps advanced in PC1.

61. The CRC section 42a report opposed this relief, citing that *'A general business zoning of the type requested is not considered appropriate within the rural zone. Also the quarrying activity is likely to continue on the site for some years*[7]*.*

[7] Section 42a report, Volume 2, Page 49

62. Quarries within the City's Quarry zone represent a significant physical resource, comprising large land areas with established vehicle access points, industrial buildings, outdoor storage areas and working areas. Significant investment has also been committed to landscaping and noise attenuation (e.g., earth bunds) in order to avoid or mitigate the potential adverse effects of quarrying activity. Furthermore, the Quarry Zone features land use activities which generate adverse effects of a particular scale, character and intensity, which are protected by section 10 of the Act and provide a basis for future activities with similar effects to establish.

63. Given this context, MCL agrees with Winstones' submission that PC1 should, at the very least, recognise the business activity occurring in the City's Quarry zones and provide for the strategic and long-term planning and management of this land resource. Such planning is considered necessary in order to effectively and efficiently utilise the physical land resource, and provide for the contribution of this resource to the City's stocks of business and industrial land.

64. In the context of section 32, such a change would more effectively and efficiently achieve objective 1, insofar as consolidating business activities through the use of existing developed 'industrial' (quarried) land. Such a change would also better achieve objectives 2 and 3, to the extent that they are concerned with adverse effects; objective 6 in respect of providing for the growth of business activities; and, objectives 7 and 8 where these are concerned about efficient use of transport infrastructure (such as the State Highways in proximity to the City's quarries). Without undertaking any quantitative analysis, it is also anticipated that a cost benefit assessment in the context of section 32(4)(a) would favour the utilisation of existing quarried land over the development of new industrial land.

65. Finally, MCL also agrees with Winstones that the necessary structure planning for the Rural Quarry Zone should take place prior to 2015 given the current rate of aggregate extraction and the associated 'life expectancy' of quarry operations.

CONCLUSIONS

66. For completeness, the conclusions stated in paragraph 9 of this evidence are reiterated.

Jeremy Phillips

Director & Senior Planner, ViaStrada Ltd

20 March 2009

	Submission No: 083	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Tayla	
Last name	Reece	
Email	[redacted]	
Street name and number	[redacted]	
Suburb		
Town/City	Christchurch	
Postcode	[redacted]	
I am completing this submission	On behalf of a group or organisation No of people: 200	Youth Voice Canterbury Role within organisation: Coordinator
Hearings		
Do you wish to speak to the hearings panel?	I wish to speak at the hearings	
Phone number	[redacted]	
Preferred location to be heard	- Christchurch City - Rangiora - Rolleston	
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree		
Comment		
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree		
Comment		
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment		
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree		
Comment		
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*		
Agree/disagree		
Comment		
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*		
Agree/disagree		

Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	I am completing this on behalf of Youth Voice Canterbury, including the Christchurch, Waimakariri and Selwyn Youth Councils. Youth Councils across Greater Christchurch are very keen to identify how Our Space 2018-2048 meets youth priorities identified in the various youth strategies, action plans and surveys they have completed and consider how the future settlement pattern proposed addresses the challenges over the next 30 years and the quality of life of future generations. As an example, the Christchurch Youth Action Plan identifies issues, aspirations and actions to be considered by decision-makers with regard to Transport, Wellbeing, Youth Friendly Spaces & Places, Environment, Employment, Representation and Belonging, Education and Engagement Processes. Youth Voice Canterbury will be working with the Christchurch, Selwyn and Waimakariri Youth Councils to expand on and detail those aspects of Our Space 2018-2048 which support stated aspirations of youth across Greater Christchurch and any that should be amended to better achieve the outcomes sought by youth. We will work on this over the coming 1-2 months as we are only now coming to the end of the exam period. We are liaising with Kieth Tallentire.
Attachments	

	Submission No: 084	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Richard	
Last name	Graham	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Christchurch	
Postcode	[redacted]	
I am completing this submission	For myself	
Hearings		
Do you wish to speak to the hearings panel?	I wish to speak at the hearings	
Phone number	[redacted]	
Preferred location to be heard	Christchurch City	
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Do not agree	
Comment	My submission is that the urban growth plans, including this document, have failed to answer the primary question as to whether growing Greater Christchurch to over 600,000 people represents the best outcome for the region. This plan takes a directive from Statistics NZ on population growth and then identifies land to house those people on but fails to question whether Greater Christchurch should want to grow to over 600,000 people or whether the needs and desires of the current population and the existing environment are better served by a different growth curve or potentially no population growth at all. There is no assessment of the impact of further urban expansion on the existing rural amenity. Further afield there is no assessment of how increasing Greater Christchurch's population impacts on holiday destinations within the Canterbury region and how they will cope with rising demand and ever decreasing amenity.	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	
Comment	All new developments should be encouraged to provide a range of housing typologies that provide for a range of family sizes and requirements.	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment		

Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Agree
Comment	New commercial development should be contained within existing commercial hubs where possible, particularly encouraging greater activity within the CBD.
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Agree
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Do not agree
Comment	I do not dispute the figures that the Statistics NZ projections are providing but I have serious concerns that there does not appear to be a rigorous process to determine whether Greater Christchurch should be accepting those levels of population growth. There needs to be a study undertaken to determine how to achieve the best outcome for Greater Christchurch - how does Christchurch become the best little city in the world - and how the urban form, population numbers, transport links, recreational infrastructure fit into that outcome. The current draft strategy seeks to find an answer to a projected population number without questioning if the end population number is the best outcome for the region.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Do not agree
Comment	The infrastructure planning is only required once the assessment work has been done to confirm the optimum population figure, not so we can accommodate an population that is based on a statistical projection. There is nothing 'sustainable, creative or cohesive' about the manner in which the projected population for 2048 has been determined and this work needs to be undertaken before this strategy is adopted.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	My key concern about this process and proposed strategy is that it is based on a statistical projection from Statistics NZ and a strategy is being developed to provide housing and infrastructure for an arbitrary number of people without any rigorous work being undertaken to determine what the ideal population of Greater Christchurch should be in order to develop the best City we can.

	Population growth for the sake of growth is not usually a good outcome and we need to be asking better questions at the front end of the process around: 1. What is the vision we are seeking to achieve in the medium - long term? 2. How and why will this benefit our town/City, region and country? 3. What are the optimum population levels we should be targeting? 4. How do we create a sustainable and buoyant economy without sole reliance on constant population growth? The strategy in its current form is deficient as it only seeks to provide an answer to a statistical projection on population rather than asking the questions to determine what the optimum population should be. It may that the answer is that we only want 500,000 people and other locations/solutions will need to be found beyond that.
Attachments	

Submission No: 092

Submission Form

Greater Christchurch Partnership
Te Tira Tū Tahi
One Group, Standing Together

HAVE YOUR SAY BY 30 NOVEMBER 2018

OUR SPACE 2018-2048
Greater Christchurch Settlement Pattern Update
Whakahāngai O Te Hōrapa Nohoanga

How to make a submission

Online: Make a submission using the online submission form at www.greaterchristchurch.org.nz/ourspace

Email: ourspace@greaterchristchurch.org.nz

Post: Our Space consultation, Greater Christchurch Partnership, PO Box 73012, Christchurch 8154

Hand deliver: Civic Offices, 53 Hereford Street

SUBMITTER DETAILS

Name: Emily McDonald

Address: PO Box 365, Christchurch 8140

Email: emily@novogroup.co.nz

I am completing this submission: ☐ For myself ☑ On behalf of a group or organisation

If you are representing a group or organisation, how many people do you represent? 1 John Law

HEARINGS

Hearings are planned for February 2019.

Do you wish to speak to the hearings panel?

☑ Yes, I wish to speak at the hearings ☐ No, I do not wish to speak at the hearings

If you wish to speak at the hearings, please indicate your preferred location to be heard and provide a contact number.

Preferred location: ☑ Christchurch City ☐ Rangiora ☐ Rolleston

Contact number: 03 925 9314

QUESTIONS

The questions below may help you structure your submission in relation to the various aspects covered in **Our Space 2018-2048**. Section 5.7 of **Our Space** briefly outlines some alternative options considered when preparing this document. You can make submission points under each question and/or other and more general comments under question 9.

Housing growth

Question 1

Our Space highlights there is signi[illegible]t capacity for new housing through re[illegible]lopment in Christchurch City but to accommodate housing grow[illegible]lwyn and Waimakariri it identifi[illegible]itional greenfield land around Rolleston, Rangiora and Kaiapoi.

Do you agree or disagree with this approach[illegible]hy?

☐ Agree ☐ Somewhat agree ☐ Neither [illegible] ☐ Somewhat disagree ☐ Do not agree

Question 2

Our Space adopts the current p[illegible]ng framework that encourages a rang[illegible]new housing types, especially in the central city, close to suburba[illegible]es within the City and around e[illegible]towns in Selwyn and Waimakariri.

Do you agree or disagree with this ap[illegible]and why?

☐ Agree ☐ Somewhat agree ☐ Neither [illegible] ☐ Somewhat disagree ☐ Do not agree

Question 3

Our Space proposes to develop an [illegible] plan to increase the supply of social and affordable housing across Greater Christchurch and investigate ways housing providers can use different models to make it easier for people to own their own home.

What elements should be included in this action plan?

Business growth

Question 4

Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri.

Do you agree or disagree with this approach and why? What further measures would support such development?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☐ Do not agree

Question 5

The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses.

Do you agree or disagree this is sufficient and in the right location and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☑ Do not agree

See question 6 response below

Growth needs

Question 6

The proposals in **Our Space** are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy, including through business sector trends and impacts from technological change.

Do you agree or disagree with our evidence base and why?

☐ Agree ☐ Somewhat agree ☐ Neither agree nor disagree ☐ Somewhat disagree ☑ Do not agree

The Canterbury Regional Policy Statement is considered to inadequately account for current and future industrial development trends, as the predicted infrastructure boundary contained in the CRPS's Land Use Recovery Plan Map 1A does not account for specific areas of land that are clearly suitable for industrial development but are not recognised as such.

Specifically, we consider the Rural Urban Fringe Zoning on the southeast corner of Main South Road and Barters Road should have urban (industrial) development provided for, noting the existing and zoned land use activity surrounding the land. Specifically, this small pocket of Rural Urban Fringe zoning is bounded by zoned Industrial land to the east and south, small residential sized allotments along Main South Road to the north and Industrial land beyond this, and Barters Road to the west. The land is in close proximity to main arterial roads and the railway corridor and can be readily integrated with the adjacent zoned industrial land and infrastructure. Conversely, the current identification of the land as non-urban / rural land overlooks these characteristics, the small allotment sizes, and the unlikelihood of future productive rural land use.

Transport and other infrastructure

Question 7

Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public tr… t. This aligns with recent transport …osals that signal more high frequency bus routes and an inten… deliver rapid transit along th… hern and south-west transport corridors.

Do you agree or disagree with this appr… d why?

☐ Agree ☐ Somewhat agree ☐ …ith… …e …gree ☐ Somewhat disagree ☐ Do not agree

Question 8

Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities.

Do you agree or disagree with the approach and why? What could be done to integrate infrastructure planning?

Agree | Somewhat agree | Neither agree nor disagree | Somewhat disagree | Do not agree

Other

Question 9

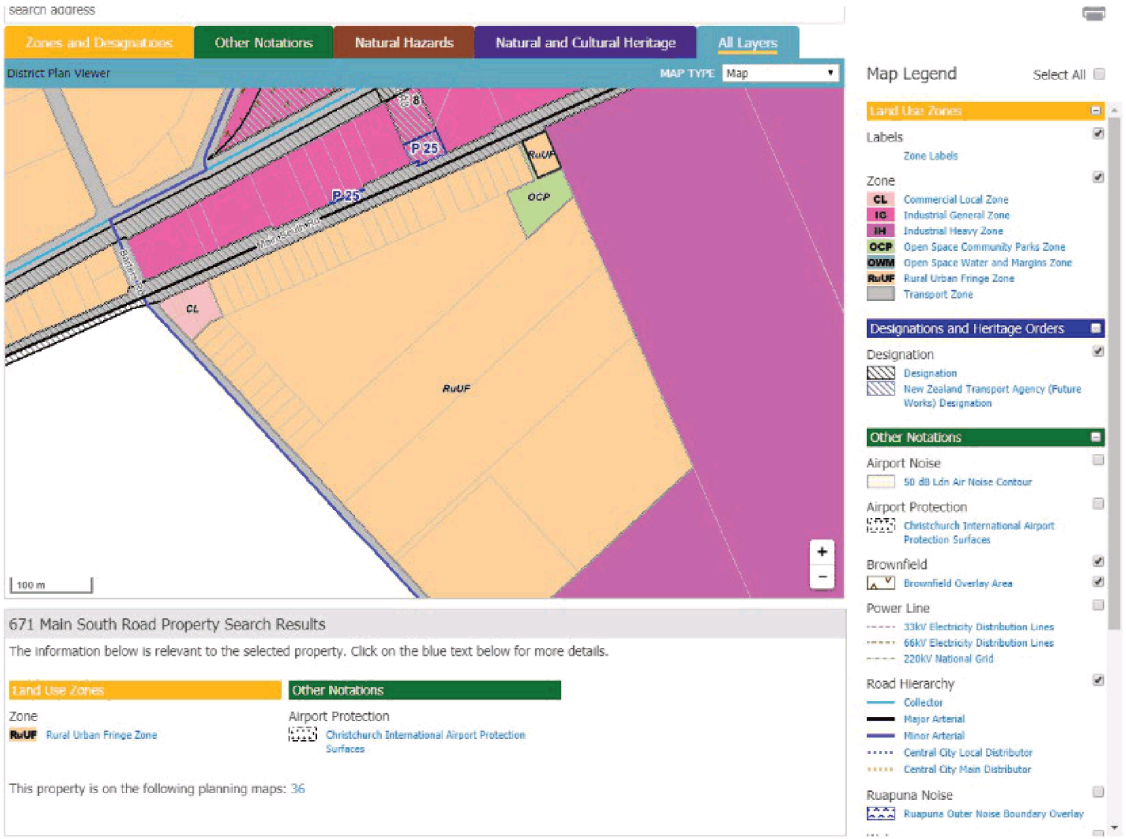
What other points do you wish to make to inform the final **Our Space 2018-2048: Greater Christchurch Settlement Pattern Update**?

Submissions are public information

We require your contact details as part of your submission — it also means we can keep you updated throughout the project. Your submission, name and contact details are given to decision-makers to help them make their decision.

Submissions, identifying submitter names only, will be made available online. If requested, submissions, names and contact details may be made available to the public, as required by the Local Government Official Information and Meetings Act 1987.

If you consider there are compelling reasons why your name and/or feedback should be kept confidential please outline this in your submission.


search address
Zones and Designations
Other Notations
Natural Hazards
Natural and Cultural Heritage
All Layers
District Plan Viewer
MAP TYPE Map
P 8
P 25
P 25
RuUF
OCP
CL
RuUF
100 m
Map Legend
Select All
Land Use Zones
Labels
Zone Labels
Zone
CL Commercial Local Zone
IG Industrial General Zone
IH Industrial Heavy Zone
OCP Open Space Community Parks Zone
OWM Open Space Water and Margins Zone
RuUF Rural Urban Fringe Zone
Transport Zone
Designations and Heritage Orders
Designation
Designation
New Zealand Transport Agency (Future Works) Designation
Other Notations
Airport Noise
50 dB Ldn Air Noise Contour
Airport Protection
Christchurch International Airport Protection Surfaces
Brownfield
Brownfield Overlay Area
Power Line
33kV Electricity Distribution Lines
66kV Electricity Distribution Lines
220kV National Grid
Road Hierarchy
Collector
Major Arterial
Minor Arterial
Central City Local Distributor
Central City Main Distributor
Ruapuna Noise
Ruapuna Outer Noise Boundary Overlay
671 Main South Road Property Search Results
The information below is relevant to the selected property. Click on the blue text below for more details.
Land Use Zones
Other Notations
Zone
RuUF Rural Urban Fringe Zone
Airport Protection
Christchurch International Airport Protection Surfaces
This property is on the following planning maps: 36

Our Space 2018-2048 – Greater Christchurch Settlement Pattern Update

Schedule of Submitters who Did Not Request To Be Heard

Submitter Number	Submitter	On behalf of…
002	Floyd Rudolph	
003	Scott Boyce	
004	John Dryden	
007	Peter Wells	
008	John Ashcroft	
011	Randal Inch	
012	Pat McIntosh	
013	Andrew Long	
014	Michael Steadman	
017	Steve Holland	
029	Cathy Campbell	Inovo Projects
032	Hamish at RM Group	Infinity Investment Group
034	Geoff Marks	
044	Simon Britten	
045	Tony Dale	
048	Olly Powell	
049	Daniel Hamilton	Transpower New Zealand
062	Steve Wakefield	Townsend Fields Limited
063	Steve Wakefield	Carolina Homes Limited
068	Paul Lonsdale	Central Business City Association
080	Robert Fleming	
086	Kieran Williamson	
087	Axel Wilke	
088	Colin Eaton	

Submission No: 002	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Floyd
Last name	Rudolph
Email	[redacted]
Street name and number	[redacted]
Suburb	[redacted]
Town/City	Christchurch
Postcode	[redacted]
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Neither agree nor disagree
Comment	Lots of new housing to happen.
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Neither agree nor disagree
Comment	What are the new housing types ?
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	Sounds like gated communities.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Somewhat disagree
Comment	Brick and mortar are becoming yesterdays businesses. Support a good Christchurch service business like m.christchurchdialadriver.com
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Neither agree nor disagree
Comment	Industrial hemp would benefit the economy, provide meaningful employment, diverse beneficial products, build houses, clothing,medicine and food.Nov 2018 MPI are allowing hemp seeds for food or human consumption.
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely	

changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Neither agree nor disagree
Comment	Industrial hemp farm the ChCh red zone areas
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	ChCh bus lanes may be faster in morning and after work traffic e scooters may be helpful for last km travel. Subsidised e bikes, scooters Longboards that can go on buses
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Neither agree nor disagree
Comment	A community blockchain will help communities stay effective, efficient and connected
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	With 640hectare of empty red zone land here on Chch east side it seems a waste to devote that land to public park space. ChCh has thousands of parks that are under utillised. How is the green spine going to encourage visitors and positively affect the economy ? Develop blockchain and hemp farming.
Attachments	

Submission No: 003	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Scott
Last name	Boyce
Email	[redacted]
Street name and number	[redacted]
Suburb	[redacted]
Town/City	rolleston
Postcode	[redacted]
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	Unsure of information available for the timing of the different areas in selwyn
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Agree
Comment	
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Agree
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Agree

Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	
Attachments	

Submission No: 004	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via email-**	
Submitter details	
First name	John
Last name	Dryden
Email	[redacted]
Street name and number	
Suburb	
Town/City	
Postcode	
I am completing this submission	
Hearings	
Do you wish to speak to the hearings panel?	
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	
Comment	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	
Comment	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	
Comment	
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	

Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	A . 2.2 and 5.4 CULTURAL Why is there no discussion of the cultural aspirations and needs of the majority of people who live and will live, in our City? Why did our early European settlers settle here-- what were they seeking? the Garden City movement and the Suburban rather than the Urban style of living , the freedom the car provides and the social freedom this provides and the settlement pattern it allows, the importance of large open spaces such as Hagley Park in shaping the form of the City, recognition of the change of seasons, heritage buildings etc etc . These sorts of matters are far more important to the majority of people than the narrow ones you mention. B Why is the report anonymous? There should be a list of members of The Greater ChCh Partnership and there professional advisors and their qualifications. so we can have some confidence in the report as a whole C Intensification of existing residential areas will fail unless good urban design principles are enforced. However not with standing the above , i agree with the overall pattern of development you propose.
Attachments	

	Submission No: 007
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Peter
Last name	Wells
Email	[redacted]
Street name and number	[redacted]
Suburb	Christchurch
Town/City	Christchurch
Postcode	8013
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat disagree.
Comment	Whilst our region will certainly need to accommodate additional housing in the coming three decades, developing arable or ecologically valuable land is a poor investment in our future. As we transform living landscapes into urban areas through paving, underground utilities, above-ground structures; we introduction new toxicities into these areas and render them ecologically inert. Once this transformation occurs, we cannot change it back; not without costly remediation which takes hundreds, even thousands of years. As they exist today, subdivisions outside our existing urban fabric are built with cheap materials stock on a 30-50 year horizon, are expensive to extend infrastructure to, and increase the social isolation of their residents. Indeed it has been estimated that every 10 minutes of additional driving time between home and social activities predicts a 10% decline in civic involvement (Robert Putnam quoted in Frumkin 2002). To avert deteriorating our land-base, over-taxing our 20th-century infrastructure, inhibiting Christchurch's net-zero carbon goal by 2030, and escalating social divides with rural communities & commuters, we need prioritize human-scale civic development above other forms of housing and allow greenfield development ONLY if it has a regenerative impact on it's surrounding ecology, alleviates the load on central infrastructure (three waters, energy, transport), and contributes to the social well-being of it's residents.
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	Given the rapid change in demographics and housing needs of Cantabrians, the Settlement Pattern Update should actively encourage new forms of human-scale, place-based, and environmentally restorative housing. As a millennial with very little prospect of home ownership,

	I would be thrilled to see our councils enabling tiny houses, co-housing schemes (such as Peterborough Village), live/work artist studios, Living Buildings, passive houses, and utilizing heritage buildings for young & old people to live in. This type of urban living arrangements add tremendous value to the urban fabric through closer communities, introducing sustainable solutions into the building vernacular & codes, and building with our shifting ecology rather than over it. Enabling these citizen-led solutions delivers not only on the outcomes of this Update, but on the Resilient Greater Christchurch Plan, the CCC Climate Smart Strategy, CCC's Long Term Plan, and even Share and Idea!
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Somewhat agree
Comment	Commercial vitality in the central city is important, however, its success will hinge upon the character of the development. The vibrant, prosperous, opportunity-rich atmosphere that Christchurch is aspiring to is inherently an adaptable and a livable one. The most common sentiment I've heard (almost universally) of the Christchurch rebuild is: "we had the opportunity to do so much more in the city center, not just 4 stories of concrete, glass, and steel . . . I miss the old alleyways, the diversity of places, and shops, and the people in them." As Anake Goodall put it simply, we re-constructed a 20th-century city. Commercial development in greater Christchurch needs to embody the shifting currents of different use which all cities go through. Whether office, retail, hospitality, or production, any building in a prosperous urban area must be to adapt with it's surroundings and climate, to weather the wear & tear of use over decades (and centuries), and to live many different lives supporting the needs of it's occupants. Developments which can take on this character are not only future-proofed, but represent more stable investments with longer returns, build social capital around them, and become landmarks (even commonplace ones) in the urban landscape. Some of our most successful urban developments in Christchurch are living examples of this. What was an old pickle factory next to the railway has for 5 years been home to the XCHC, an exemplar hub for the creative community, now featuring a cafe, co-working space, & boutique accommodation. The Arts Centre is a similar story of set of buildings designed as a place which has gone from housing a university to galleries, a theatre, cafes, maker spaces, and world-class events. In a world of city regions which have been built for singular moments in time, the greater Christhchurch area should focus its commercial development on creating quality, livable spaces which will grow with the city as the city expands and contracts. Our commercial developments should continue to focus on our urban centers rather than proliferating into undeveloped land and above all should add to a livable atmosphere that will which will enrich their surroundings over time, rather than becoming a series of cheap frontages for an easy boom & bust.
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Neither agree nor disagree
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Neither agree nor disagree
Comment	

Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	The map of cycle accessibility from activity centres (page 27) is an excellent picture of how urban transport should work. Living in the city centre, I would say that Christchurch is an extremely easy city to navigate. With no desire (or excess income) to own a car, I find it easy to walk, cycle, and for longer trips bus, to work, errands, friends, events, and everything else I need in the city. Cycle lanes and boulevards like Manchester St (after the 3rd excavation) have made things very efficient, the 30km limit in the CBD is marvelous for safety, the buses are consistent enough, and the Green Spire through the River Corridor is going to be an unprecedented asset of the city (and New Zealand as a whole). But there is one more piece I wish we had working . . . the tram. Like it or not, the tram is effectively a light-rail system waiting to be restored. At present it's mostly treated like a circus animal for tourists, but an electric tram system is something is something many cities around the world wish they could bring back to their urban environment. The possibility of light-rail for greater Christchurch is very enticing and would invite a host of neighborhood-scale development ecological regeneration opportunities, however this would have to be brand new infrastructure and new land-area to support those lines. An alternative to this might in fact be the existing train system. Not only do our existing train lines run through Lyttleton, Kaiapoi, Rangiora, Templeton, & Rolleston, but they connect Christchurch to much of the South Island. Given the recent reinstatement of the Napier / Wairoa section of Kiwirail (with 5M in support from the Provincial Growth Fund) this trend may be one worth perpetuating in the greater Christchurch region. If feasible, this would both utilize predominately existing infrastructure and open opportunities for new urban development or revitalization around rail infrastructure.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Do not agree
Comment	From the detail provided in this Update, the current plan appears to be more of the same; amounting to an increased load on a three waters system already at capacity. The centralized water/waste system which takes the form of the 600M Bromley Treatment Plant for Christchurch is highly susceptible to disruption. As the effects of climate increase and stresses will dramatically build on the city's infrastructure, this solution to waste treatment will no longer be viable. Rather than continuing to invest in intensive, monolithic systems, we have the opportunity to explore what our utilities look like at a town / village scale and transition towards it. At this scale, waste & water systems in particular are more resilient to disaster, ecologically compatible, easier to manage (in volume), less expensive to maintain/operate, and engender greater awareness in communities of their resource use and indeed, the value of infrastructure. For an exemplar space like the Ōtākaro Avon River Corridor, such applications of 21-century infrastructure are essential for its success. If the Settlement Pattern Update were to allow for exploration of on-site storm-water management, rainwater harvesting, localized composting systems, renewable energy generation, and similar innovative infrastructures, increased demand from urban growth in the greater Christchurch area could be offset, new models of civic infrastructure could be tested and implemented over time and in-tern, propagated to other area of New Zealand.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	Regarding Question (other infrastructure) attached is a resource from the International Living Future Institute in Seattle, which researches and pioneers such systems.

Attachments **007 Attachment 1 – Urban Sprawl and Public Health** **007 Attachment 2 – A Life Cycle Analysis of Alternative Wastewater Treatment Strategies in the Puget Sound Area**

Submission No: 007
Attachment 1

VIEWPOINT

Urban Sprawl and Public Health

HOWARD FRUMKIN, MD, DRPH[a]

When regular steam ferry service between Brooklyn and Manhattan began in 1814, the first commuter suburb became possible.[1] Suburbs continued to develop slowly but steadily during the 19th and early 20th centuries, thanks to transportation advances such as commuter trains and streetcars, the innovations of early real estate developers, and the urge to live in pastoral tranquility rather than in urban squalor. As automobile ownership became widespread starting in the 1920s, suburban growth continued, a trend that accelerated greatly during the second half of the 20th century. One in two Americans now lives in the suburbs.[2]

In recent years, the rapid expansion of metropolitan areas has been termed "urban sprawl"—referring to a complex pattern of land use, transportation, and social and economic development. As cities extend into rural areas, large tracts of land are developed in a "leapfrog," low-density pattern. Different land uses—housing, retail stores, offices, industry, recreational facilities, and public spaces such as parks—are kept separate from each other, with the separation enforced by both custom and zoning laws. Extensive roads need to be constructed; for suburban dwellers, most trips, even to buy a newspaper or a quart of milk, require driving a car. Newly built suburbs are relatively homogeneous in both human and architectural terms, compared with the diversity found in traditional urban or small town settings. With the expansion of suburbs, capital investment and economic opportunity shift from the center to the periphery. Regional planning and coordination are relatively weak.[1,3–7]



Clearly, the move to the suburbs reflects a lifestyle preference shared by many Americans. Such a major shift in the nation's de-

[a]Department of Environmental and Occupational Health, Rollins School of Public Health of Emory University, Atlanta, GA
Address correspondence to: Howard Frumkin, MD, DrPH, Dept. of Environmental and Occupational Health, Rollins School of Public Health, 1518 Clifton Rd., Atlanta, GA 30322; tel 404-727-3697; fax 404-727-8744; e-mail <medhf@sph.emory.edu>.

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mographics and in the form of our environment might also be expected to have health implications, both positive and negative. Some of these effects relate directly to heavy reliance on automobiles: air pollution, automobile crashes, and pedestrian injuries and fatalities. Other effects relate to land use patterns that typify sprawl: sedentary lifestyles, threats to water quantity and quality, and an expansion of the urban heat island effect. Finally, some mental health and social capital effects are mediated by the social dimensions of sprawl. Many of these health effects are individually recognized as environmental health issues, and certain aspects of sprawl, such as reliance on automobiles, have been analyzed as public health issues.[8,9] Yet the broad phenomenon of sprawl, a complex of issues related to land use, transportation, urban and regional design, and planning, has been the intellectual "property" of engineers and planners. Public health professionals have provided neither an intellectual framework nor policy guidance. This is a striking departure from the legacy of the 19th and early 20th centuries, when public health and urban design were overlapping and largely indistinguishable concerns.[10–12]

This article offers a public health framework for understanding the consequences of urban sprawl. For each of the health outcomes noted earlier, available evidence about the health effect and its connection with sprawl is presented, and issues that require further research are identified. Because the adverse impacts of sprawl do not fall equally across the population, the distribution of health impacts across the population and resulting equity concerns are addressed. Finally, some solutions are discussed.

DIRECT EFFECTS OF RELIANCE ON AUTOMOBILES

One of the cardinal features of sprawl is driving, reflecting a well-established, close relationship between lower density development and more automobile travel.[4,13–16] For example, in the Atlanta metropolitan area, one of the nation's leading examples of urban sprawl, the average person travels 34.1 miles in a car each day—an average that includes the entire population, both drivers and non-drivers.[17] More densely populated metropolitan areas have far lower per capita daily driving figures than Atlanta, e.g., 16.9 miles for Philadelphia, 19.9 for Chicago, and 21.2 for San Francisco.[17] On a neighborhood scale, the same pattern is observed. In the Los Angeles, San Francisco, and Chicago metropolitan areas, vehicle miles traveled increase as neighborhood density decreases (see Figure 1).[18]

Automobile use offers extraordinary personal mobility and independence. However, it is also associated with health hazards, including air pollution, motor vehicle crashes, and pedestrian injuries and fatalities.

Air pollution

Motor vehicles are a leading source of air pollution.[20] Even though automobile and truck engines have become far cleaner in recent decades, the sheer quantity of vehicle miles driven results in large releases of carbon monoxide, carbon dioxide, particulate matter, nitrogen oxides, and hydrocarbons into the air.[21] Nitrogen oxides and hydrocarbons, in the presence of sunlight, form ozone.

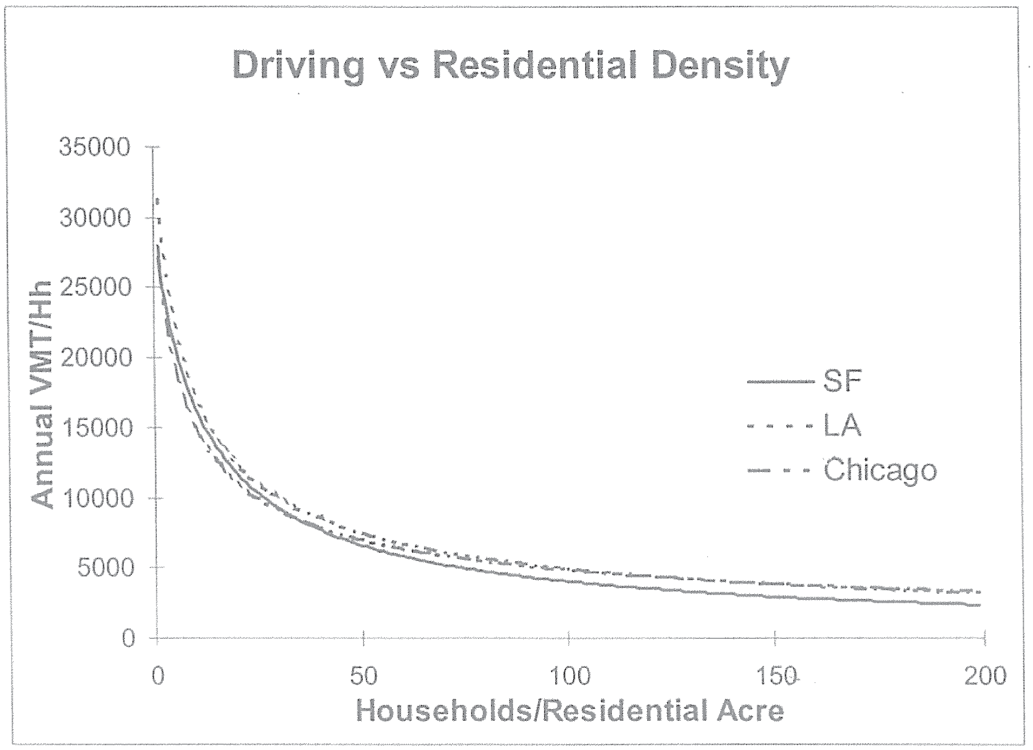
Nationwide, "mobile sources" (mostly cars and trucks) account for approximately 30% of emissions of oxides of nitrogen and 30% of hydrocarbon emissions.[22] However, in automobile-dependent metropolitan areas, the proportion may be substantially higher. In the 10-county metropolitan Atlanta area, for example, on-road cars and trucks account for 58% of emissions of nitrogen oxides and 47% of hydrocarbon emissions, figures that underestimate the full impact of vehicle traffic because they exclude emissions from related sources, such as fuel storage facilities and filling stations.[23]

In various combinations, the pollutants that originate from cars and trucks, especially nitrogen oxides, hydrocarbons, ozone, and particulate matter, account for a substantial part of the air pollution burden of American cities. Of note, the highest air pollution levels in a metropolitan area may occur not at the point of formation but downwind, due to regional transport. Thus, air pollution is a problem not only alongside roadways (or in close proximity to other sources) but also on the scale of entire regions.

The health hazards of air pollution are well known.[24] Ozone is an airways irritant. Higher ozone levels are associated with higher incidence and severity of respiratory symptoms, worse lung function, more emergency room visits and hospitalizations, more medication use, and more absenteeism from school and work.[24] Although healthy people may demonstrate these effects, people with asthma and other respiratory diseases are especially susceptible. Particulate matter is associated with many of the same respiratory effects and, in addition, with elevated mortality.[25–27] People who are especially susceptible to the effects of air pollution include the elderly, the very young, and those with underlying cardiopulmonary disease.

An additional driving-related emission is carbon dioxide, the end product of burning fossil fuels such as gasoline. Carbon dioxide is the major greenhouse gas, accounting for approximately 80% of emissions

Figure 1. Annual vehicle miles traveled per household, by neighborhood residential density



SOURCE: Reference 18.

with global warming potential.[28] Motor vehicles are also a major source of other greenhouse gases, including methane, nitrogen oxides, and volatile organic compounds. As a result, automobile traffic is a major contributor to global climate change, accounting for approximately 26% of U.S. greenhouse gas emissions.[28] During the decade of the 1990s, greenhouse gases from mobile sources increased 18%, primarily a reflection of more vehicle miles traveled.[28] In turn, global climate change threatens human health in a number of ways, including the direct effects of heat, enhanced formation of some air pollutants, and increased prevalence of some infectious diseases.[29–32]

Thus, the link between sprawl and respiratory health is as follows: Sprawl is associated with high levels of driving, driving contributes to air pollution, and air pollution causes morbidity and mortality. In heavily automobile-dependent cities, air pollution can rise to hazardous levels, and driving can account for a majority of the emissions. Although ongoing research is exploring the pathophysiology of air pollution exposure and related issues, there are also important research questions that revolve around prevention. Technical issues include such challenges as the development of low-emission vehicles and other clean technologies. Policy research needs to identify approaches to land use and transportation that would reduce the need for motor vehicle travel. Behavioral research needs to identify factors that motivate people to choose less-polluting travel behaviors, such as walking, carpooling, or use of more efficient vehicles.

Motor vehicle crashes

Automobiles now claim more than 40,000 lives each year in the United States, a number that has slowly declined from about 50,000 per year in the 1960s.[33]

Rates of automobile fatalities and injuries per driver and per mile driven have fallen thanks to safer cars and roads, seat belt use, laws that discourage drunk driving, and other measures, but the absolute toll of automobile crashes remains high. Automobile crashes are the leading cause of death among people 1–24 years old, account for 3.4 million nonfatal injuries annually, and cost an estimated $200 billion annually.[34]

The relationship between sprawl and motor vehicle crashes is complex. At the simplest level, more driving means greater exposure to the dangers of the road, translating to a higher probability of a motor vehicle crash.[35] Suburban roads may be a particular hazard, especially major commercial thoroughfares and "feeder" roads that combine high speed, high traffic volume, and frequent "curb cuts" for drivers to use in entering and exiting stores and other destinations.[36] However, available data from the National Highway Traffic Safety Administration (NHTSA) show fatal crashes aggregated into only two categories of roads: urban (accounting for approximately 60% of fatalities) and rural (approximately 40%).[33]

The NHTSA data do permit comparison of automobile fatality rates by city.[33] In general, denser cities with more extensive public transportation systems have lower automobile fatality rates (including drivers and passengers, but excluding pedestrians) than more sprawling cities: 2.45 per 100,000 population in San Francisco, 2.30 in New York, 3.21 in Portland, 6.67 in Chicago, and 5.26 in Philadelphia, compared with 10.08 in Houston, 16.15 in Tampa, 12.72 in Atlanta, 11.35 in Dallas, and 9.85 in Phoenix.[33] (There are notable exceptions to this pattern, such as 5.79 per 100,000 population in Los Angeles and 10.93 per 100,000 in Detroit.[33])

According to the American College of Emergency Physicians, "Traffic crashes are predictable and preventable, and therefore are not 'accidents.'"[37] In fact, the determinants of motor vehicle injuries and fatalities are well recognized. For some of these, public health interventions, from seat belts to traffic signals, have achieved dramatic reductions in injury and fatality rates in the three-quarters of a century since automobile use became widespread. A relatively overlooked risk factor, however, is the simple fact of driving and the number of miles driven. Primary prevention would consist of decreasing exposure, an approach that is currently impractical in many metropolitan areas.

Pedestrian injuries and fatalities

On December 14, 1995, 17-year-old Cynthia Wiggins rode the public bus to her job at the Walden Galleria in suburban Cheektowaga, New York, outside of Buffalo. The bus did not stop at the mall itself, so Cynthia had to cross a seven-lane highway on foot to complete her trip to work. On that day, she had made it across six lanes when a dump truck crushed her.[38] Her death received national media attention; it was seen as exemplifying inadequate mass transportation links, pedestrian-hostile roadways, and the disproportionate impact of these factors on members of minority groups.

Each year, automobiles cause about 6,000 fatalities and 110,000 injuries among pedestrians nationwide. Pedestrians account for about one in eight automobile-related fatalities.[39,40] Data from Atlanta show that as the city sprawled in recent years, the pedestrian fatality rate increased even as the national rate declined slightly.[41] The most dangerous stretches of road were those built in the style that typifies sprawl: multiple lanes, high speeds, no sidewalks, long distances between intersections or crosswalks, and roadways lined with large commercial establishments and apartments blocks.[41] Across the country, the pattern seen for driver and passenger fatalities is repeated for pedestrian fatalities, with lower annual rates in denser cities: 1.89 per 100,000 population in Portland, 2.22 in New York, 2.52 in Chicago, and 2.57 in Philadelphia, compared with 3.03 in Dallas, 3.61 in Atlanta, 4.08 in Phoenix, and 6.60 in Tampa. However, this pattern is not as consistent as for driver and passenger fatalities, and there are exceptions, e.g., 2.60 per 100,000 population in Los Angeles, 2.61 in Houston, 3.86 in San Francisco, and 4.73 per 100,000 in Detroit.[33]

While many factors contribute to the high toll of pedestrian fatalities, including alcohol abuse, inadequate lighting, and pedestrian behavior, the proliferation of high-speed, pedestrian-hostile roads in expanding metropolitan areas likely plays an important part. Walking offers important public health benefits, but safe and attractive sidewalks and footpaths are needed to attract walkers and assure their safety. Much of the knowledge needed to make progress is available, but further research might help clarify the best and most cost-efficient ways to build walkways and the most successful approaches to zoning, financing, and other incentives.

EFFECTS OF LAND USE DECISIONS

Land use and travel patterns are closely linked. If distinct land uses are separated, if the distances between them are great, and if roads are more available than sidewalks and paths, then people shift from walking and bicycling to driving. Accordingly, the U.S. is a nation of drivers, in which only 1% of trips are on bicycles and 9% are on foot.[42] For comparison, in the

Netherlands 30% of all trips are on bicycles and 18% are on foot, and in England the corresponding figures are 8% and 12%.[42] Approximately 25% of all trips in the U.S. are shorter than one mile; of these, 75% are by car.[43]

Physical activity

A considerable body of research establishes that sprawl—as measured by low residential density, low employment density, low "connectivity," and other indicators—is associated with less walking and bicycling and with more automobile travel than denser communities.[13,44–48]

Low levels of physical activity threaten health both directly and indirectly. A sedentary lifestyle is a well-established risk factor for cardiovascular disease, stroke, and all-cause mortality,[49–53] whereas physical activity prolongs life.[54,55] Men in the lowest quintile of physical fitness have two to three times the risk of dying overall, and three to five times the risk of dying of cardiovascular disease, compared with men who are more fit.[56] Among women, walking 10 blocks per day or more is associated with a 33% lower risk of cardiovascular disease.[57] The risk associated with poor physical fitness is comparable to, and in some studies greater than, the risk associated with hypertension, high cholesterol, diabetes, and even smoking.[56,58] Among diabetic patients, the higher the blood sugar, the more protective is physical fitness.[59] Physical activity also appears to be protective against cancer.[60–63]

In addition to its direct effects on health, lack of physical activity is also a risk factor for being overweight. Sedentary lifestyles may help explain the rapid increase in the prevalence of overweight in recent years. In 1960, 24% of Americans were overweight (defined as a Body Mass Index ≥25 kg/m^2), and by 1990 that proportion had increased to 33%.[64] During the same interval, the prevalence of obesity (defined as a Body Mass Index ≥30 kg/m^2) nearly doubled.[65] According to data from the Behavioral Risk Factor Surveillance System, this trend continued during the 1990s, with the prevalence of obesity rising from 12.0% in 1991 to 17.9% in 1998.[66,67]

Being overweight is itself a well-established risk factor for a number of diseases: ischemic heart disease (overweight increases the risk up to fourfold in the 30–44 age group, less at older ages[68]), hypertension, stroke, dyslipidemia, osteoarthritis, gall bladder disease, and some cancers. Overweight people die at as much as 2.5 times the rate of non-obese people.[51,68–71] Being overweight increases the risk of Type 2 diabetes up to fivefold, and the current epidemic of Type 2 diabetes tracks closely with the increase in being overweight.[72]

Sprawl does not fully account for Americans' increasingly sedentary lives, and physical inactivity does not tell the entire story of the national epidemic of being overweight. However, by contributing to physical inactivity and therefore to overweight and associated health problems, sprawl has negative health consequences. Further research will help provide a more complete understanding of the association between sprawl and physical inactivity.[73] In theory, a randomized trial might assign some people to live in walkable neighborhoods and others to live in subdivisions without sidewalks or nearby schools, stores, or workplaces. Then, the two groups might be followed for physical activity patterns and related health outcomes. Such residential randomization is, of course, impossible. Observational studies are underway to characterize the relationships among land use, travel patterns, and physical activity.[74] However, such research is challenging. People living in walkable neighborhoods may have chosen to live there because of better health and a greater inclination to walk. Because children do not choose their neighborhoods, an alternative might be to study adult physical activity and travel patterns according to the type of neighborhood of origin to test the hypothesis that childhood access to walkable neighborhoods predicts lifelong travel preferences and activity patterns. Research is also needed on design issues (how to build more walkable communities), policy issues (how to put incentives in place to encourage needed environmental and behavioral changes), and behavior issues (how to motivate more physical activity, including walking).

Water quantity and quality

Americans take for granted the availability of clean, plentiful, and cheap water. Indeed, the development of an excellent water supply—the result of social policy, civil engineering, and health advocacy over more than a century—is credited with a central role in improving public health during the first half of the 20th century.[12,75]

Sprawl may threaten both the quantity and quality of the water supply. As forest cover is cleared and impervious surfaces built over large areas, rainfall is less effectively absorbed and returned to groundwater aquifers.[76] Instead, relatively more stormwater flows to streams and rivers and is carried downstream. One study found that about 4% of rainfall on undeveloped grassland, compared with 15% of rainfall on suburban land, was lost as runoff.[77] The same is true for snowmelt, especially early in the melting process.[78] Modeling shows that higher density development patterns can reduce peak flows and total runoff volumes.[79] With less groundwater recharge, communities that depend

on groundwater for their drinking water—about one-third of U.S. communities[80]—may face shortages.

Water quality may be affected in several ways. With better control of "point sources" of water pollution—factories, sewage treatment plants, and similar facilities—"non–point source" water pollution has emerged as the major threat to water supplies. Non–point source water pollution occurs when rainfall or snowmelt moves over and through the ground, picking up contaminants and depositing them into surface water (lakes, rivers, wetlands, and coastal waters) and groundwater. Much of this problem is specific to agricultural land, the primary source of contamination by fertilizers, herbicides, and insecticides. However, growing forms of non–point source pollution include oil, grease, and toxic chemicals from roadways, parking lots, and other surfaces, and sediment from improperly managed construction sites, other areas from which foliage has been cleared, or eroding stream banks. Studies of the movement of polycyclic aromatic hydrocarbons,[81] zinc,[82] and organic waste[83] suggest that suburban development is associated with high loading of these contaminants in nearby surface water.

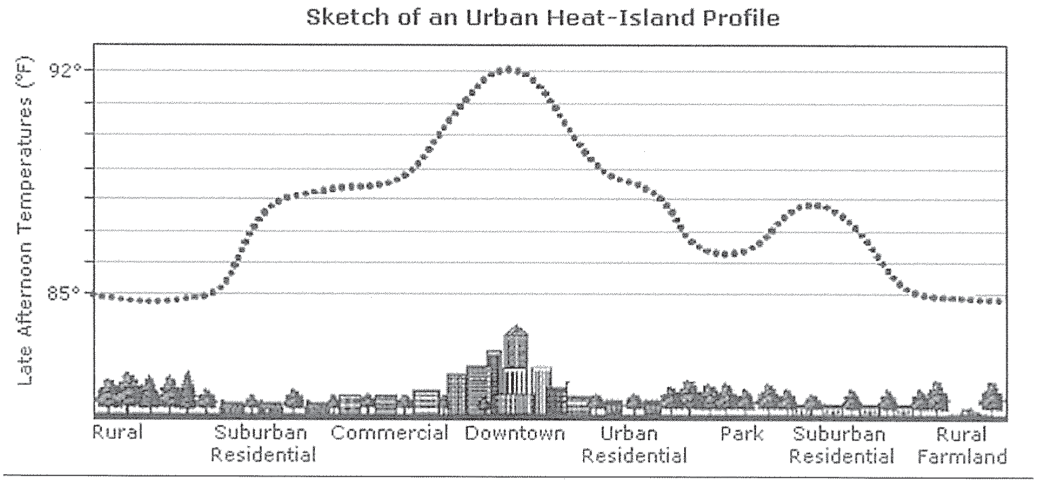
Both water quantity and water quality are directly affected by land use and development patterns, and evidence suggests that sprawl contributes to these problems in specific ways. Further evidence is needed to identify the precise features of land use that best predict non–point source pollution, the impact of this pollution on drinking water quality, and the optimal control methods.

The heat island effect

On warm days, urban areas can be 6°–8° F warmer than surrounding areas, an effect known as an urban heat island (see Figure 2). The heat island effect is caused by two factors. First, dark surfaces such as roadways and rooftops efficiently absorb heat from sunlight and reradiate it as thermal infrared radiation; these surfaces can reach temperatures of 50°–70° F higher than surrounding air. Second, urban areas are relatively devoid of vegetation, especially trees, that would provide shade and cool the air through "evapotranspiration." As cities sprawl outward, the heat island effect expands, both in geographic extent and in intensity. This is especially true if the pattern of development features extensive tree cutting and road construction.[84,85] NASA satellite imagery, available for public viewing on the Web, documents the heat island effect for several cities.[86]

Metropolitan expansion involves a positive feedback loop that may aggravate the heat island effect. Sprawling metropolitan areas, with greater travel distances, generate a large amount of automobile travel. This, in turn, results in more fuel combustion, with more production of carbon dioxide, and consequent contributions to global climate change.[87] Global climate change, in turn, may intensify the heat island effect in metro-

Figure 2. An urban heat island profile



SOURCE: Reference 93.

politan areas. Thus, not only does the morphology of metropolitan areas contribute to warming, but so may the greenhouse gas production that results from increased driving.

The magnitude of the contribution of sprawl to urban heat episodes is unclear. Data from the last half century show a clear increasing trend in extreme heat events in U.S. cities.[88] While global warming may contribute to this trend, the rate of the increase far exceeds the rate of global warming, suggesting that urban growth patterns may be a primary determinant.[89] Further research on this phenomenon is required.

Heat is of concern because it is a health hazard.[90] Relatively benign disorders include heat syncope, or fainting; heat edema, or swelling, usually of dependent parts such as the legs; and heat tetany, a result of heat-induced hyperventilation. Heat cramps are painful muscle spasms that occur after strenuous exertion in a hot environment. Heat exhaustion is a more severe acute illness that may feature nausea, vomiting, weakness, and mental status changes. The most serious of the acute heat-related conditions is heat stroke, which represents the body's failure to dissipate heat. The core body temperature may exceed 104°F, muscle breakdown occurs, and renal failure and other profound physiologic derangements may follow. The fatality rate is high.

There are several well-known risk factors for developing heat stroke or dying during a heat wave, including being elderly, bedridden, homebound, or socially isolated, having certain diseases or using certain medications, and living on an upper floor.[91,92] Poverty and minority race or ethnicity are also risk markers.[93]

Heat also has indirect effects on health, mediated through air pollution. As the temperature rises, so does the demand for energy to power air conditioners, requiring power plants to increase their output. The majority of U.S. power plants burn fossil fuels, so increased summer demand results in higher emissions of the pollutants they generate, including carbon dioxide, particulate matter, sulfur oxides, nitrogen oxides, and air toxics. Ozone formation from its precursors, nitrogen oxides and hydrocarbons, is enhanced by heat. In summary, through both the direct and indirect effects of heat, sprawl has potential adverse health consequences.

SOCIAL ASPECTS OF SPRAWL

Mental health

One of the original motivations for migration to the suburbs was access to nature.[1] People like trees, birds, and flowers, and these are more accessible in the suburbs than in denser urban areas. Moreover, contact with nature may offer benefits beyond the purely aesthetic; it may benefit both mental health and physical health.[94] In addition, the sense of escaping from the turmoil of urban life to the suburbs, the feeling of peaceful refuge, may be soothing and restorative to some people. In these respects, there may be health benefits to suburban lifestyles.

On the other hand, certain aspects of sprawl, such as commuting, may exact a mental health toll. For some time, automobile commuting has been of interest to psychologists as a source of stress, stress-related health problems, and even physical ailments. Evidence links commuting to back pain, cardiovascular disease, and self-reported stress.[95] As people spend more time on more crowded roads, an increase in these health outcomes might be expected.

One possible indicator of such problems is road rage, defined as "events in which an angry or impatient driver tries to kill or injure another driver after a traffic dispute."[96] Even lawmakers may be involved; one press account described a prominent attorney and former Maryland state legislator who knocked the glasses off a pregnant woman after she had the temerity to ask him why he had bumped her Jeep with his.[97]

Available data do not make clear whether road rage is on the rise. The only longitudinal study available in the U.S., published by the AAA Foundation for Traffic Safety in 1997, reported a 51% increase in reported annual incidents of road rage during the interval from 1990 to 1996.[98] The Foundation documented 10,000 reports of such incidents, resulting in 12,610 injuries and 218 deaths. A variety of weapons was used, including guns, knives, clubs, fists, or feet, and in many cases the vehicle itself. However, since the data sources included police reports and newspaper accounts, it is possible that the apparent increase reflected growing public awareness and media attention rather than a true increase in the number or rate of road rage incidents.

Road rage is not well understood, and there is a multiplicity of reasons for its occurrence. Stress at home or work may combine with stress while driving to elicit anger.[99,100] Data from Australia[101] and Europe[102] suggest that both traffic volume and travel distance are risk factors. Long delays on crowded roads are likely to be a contributing factor.

Episodes of road rage may reflect a reservoir of frustration and anger on the roads. In national telephone surveys conducted by Mississippi State University in 1999 and 2001,[103,104] large numbers of respondents reported both engaging in aggressive behaviors while driving and being the objects of such behavior

(see Table). The surveys did not identify respondents who lived in suburban locations, although the responses differed in several respects across the geographic categories used (rural, small town, small city, and large city), suggesting an influence of density and other "built environment" factors on aggressive driving behavior. A similar survey, conducted for NHTSA in 1998, found somewhat lower but comparable numbers.[105] In the NHTSA survey, the two leading reasons cited for aggressive driving were (*a*) being rushed or being behind schedule (23% of respondents), and (*b*) increased traffic or congestion (22%)—common experiences on the crowded roadways of sprawling cities. Moreover, 30% of the NHTSA respondents perceived that aggressive driving—their own and others'—was increasing over time, and only 4% thought it was decreasing. More recently, Curbow and Griffin[106] surveyed 218 women employed by a telecommunications company. This was a stable, professional population; 67% of the respondents had more than a high school education, 76% were parents, and the average job seniority was 18 years. Among these women, 56% reported driving aggressively, 41% reported yelling or gesturing at other drivers while commuting, and 25% reported taking out their frustrations from behind the wheel of their cars. Aggressive driving behavior appears to be a widespread problem.

It seems reasonable to hypothesize that anger and frustration among drivers are not restricted to their cars. When angry people arrive at work or at home, what are the implications for work and family relations? If the phenomenon known as commuting stress affects well-being and social relationships both on the roads and off, and if this set of problems is aggravated by increasingly long and difficult commutes on crowded roads, then sprawl may in this manner threaten mental health.

Social capital

Since World War II, social commentators have ascribed to suburban living a sense of social isolation and loneliness,[107–114] although some of these claims have re-

Table. Prevalence of self-reported driving behaviors, 1999 and 2000 National Highway Safety Surveys

	Percent of respondents by response choice			
How often do you . . . (1999)	*Never*	*Rarely*	*Sometimes*	*Often*
Say bad things to yourself about other drivers	15.3	22.9	39.5	22.1
Complain or yell about other drivers to a passenger in your vehicle	25.5	22.2	39.0	13.1
Give another driver a dirty look	41.8	17.6	32.7	7.7
Honk or yell at someone through the window to express displeasure	61.1	17.9	17.9	2.9
Keep someone from entering your lane because you are angry	80.2	12.9	5.9	0.8
Make obscene gestures to another driver	83.7	9.2	6.1	0.8
Think about physically hurting another driver	89.0	5.4	4.4	1.1
Make sudden or threatening moves to intimidate another driver	94.6	4.0	1.1	0.1
Follow or chase another driver in anger	96.5	3.2	0.3	0.0

	Percent of respondents by place of residence				
Within the last year, another driver . . . (2001)	*Rural*	*Small town*	*Small city*	*Large city*	*Total*
Made an obscene gesture at you	39.7	37.1	44.9	44.3	41.8
Made a threatening move with car	25.4	23.5	30.0	25.9	26.4
Tailgated you	69.1	61.3	70.3	69.8	66.8
Followed or chased you in anger	9.9	6.4	9.9	11.5	9.4
Got out of car to argue with you	5.8	5.8	4.2	8.3	5.9
Cut you off	32.0	33.7	38.6	48.0	38.1

SOURCE: Adapted from references 103 and 104.

cently been challenged.[115] "It is no coincidence," observes Yale architecture professor Philip Langdon, "that at the moment when the United States has become a predominantly suburban nation, the country has suffered a bitter harvest of individual trauma, family distress, and civic decay." [116] Indeed, a perceived erosion of civic engagement and mutual trust—a loss of what is called "social capital"—has been widely noted and discussed in recent years.[117,118] Some authors have attributed this decline, in part, to suburbanization and sprawl.[119,120]

A full discussion of the complex sociology of suburban life is beyond the scope of this article. Several facts bear mention, however. First, as Robert Putnam argues in *Bowling Alone*, the simple fact of more driving time means less time with family or friends, and less time to devote to community activities, from neighborhood barbecues to PTA meetings.[118] Putnam estimates that each additional 10 minutes of driving time predicts a 10% decline in civic involvement.[118] Second, suburban development patterns often feature considerable economic stratification. Many housing developments are built to specific price ranges, so that buyers of $250,000 homes are effectively segregated from buyers of $500,000 homes (and those at the bottom of the economic ladders are excluded altogether).[121] This pattern creates income homogeneity within neighborhoods but may intensify income inequality across metropolitan areas. Third, both polling data and voting records have demonstrated that suburban residents prefer more individualized, less collective solutions to social problems relative to rural, small town, and urban voters, with the possible exception of schools.[122–125] Finally, suburban neighborhoods with capacious houses and lawns offer few options for older adults once their children have grown up and moved from the home. These "empty nesters" typically have to change neighborhoods if they wish to find smaller, lower maintenance homes. The inability to remain in a single neighborhood through the life cycle may also undermine community cohesiveness. Collectively, these trends suggest that certain features of sprawl tend toward greater social stratification and less social capital.

A large literature has explored the relationship between social relationships and health, focusing both on the individual level (one's own relationships) and on the societal level (social capital).[126] In general, a higher quantity and quality of social relationships is associated with health benefits. Conversely, social stratification, in particular income inequality, is associated with higher all-cause mortality, higher infant mortality, and higher mortality from a variety of specific causes, independent of income and poverty, according to data from the United States[127–130] and Great Britain.[131,132] There is evidence that this effect is mediated, at least in part, through effects on social capital.[133,134] Therefore, to the extent that sprawl is associated with social stratification and loss of social capital and these phenomena are in turn associated with increased morbidity and mortality, sprawl may have a negative health impact on this broad scale.

ENVIRONMENTAL JUSTICE CONSIDERATIONS

Research over the last 15 years has suggested that poor people and members of minority groups are disproportionately exposed to environmental hazards.[135–137] Could any adverse health consequences of sprawl disproportionately affect these same populations?

In general, the pattern of urban development of which sprawl is a part may deprive the poor of economic opportunity. When jobs, stores, good schools, and other resources migrate outward from the core city, poverty is concentrated in the neighborhoods that are left behind.[138–142] A full discussion of the impact of urban poverty on health is beyond the scope of this article, but a large literature explores this relationship.[143–147] To the extent that sprawl aggravates poverty, at least for selected groups of people, it may contribute to the burden of disease and mortality.

More specifically, there is evidence that several of the specific health threats related to sprawl affect minority populations disproportionately. Air pollution is one example. Poor people and people of color are disproportionately impacted by air pollution for at least two reasons: disproportionate exposure, and higher prevalence of underlying diseases that increase susceptibility. Members of minority groups are relatively more exposed to air pollutants than whites, independent of income and urbanization.[148,149] Environmental Protection Agency data show that black people and Hispanics are more likely than white people to live in areas that violate air quality standards.[150] As asthma continues to increase, asthma prevalence and mortality remain higher in minority group members than in white people.[151] The cumulative prevalence of asthma is 122 per 1,000 in black people and 104 per 1,000 in white people, and asthma mortality is approximately three times as high in black people as in white people.[152] Similarly, asthma prevalence is more than three times as high among Puerto Rican children as among non-Hispanic children.[153] Among Medicaid patients, black children are 93% more likely, and Latino children 34% more likely, than white children to have multiple hospitalizations for asthma.[154] Although some

of this excess is related to poverty, the excess persists in analyses controlled for income.[155] Asthma prevalence and mortality are especially high, and rising, in inner cities, where minority populations are concentrated.[156,157] Both exposure to air pollution and susceptibility to its effects appear to be concentrated disproportionately among the poor and people of color. As sprawl contributes to air pollution in metropolitan areas, these populations may be disproportionately affected.

Heat-related morbidity and mortality also disproportionately affect poor people and members of minority groups. In the 1995 Chicago heat wave, black residents had a 50% higher heat-related mortality rate than white residents.[158] Similar findings have emerged following heat waves in Texas,[159] Memphis,[160] St. Louis,[161] and Kansas City[161] and are reflected in nationwide statistics.[162] Of special interest in the context of urban sprawl, one heat wave study considered transportation as a risk factor and found that poor access to transportation—a correlate of poverty and non-white race[163]—was associated with a 70% higher rate of heat-related death.[92]

There are significant racial/ethnic differences in motor vehicle fatality rates. Results from the National Health Interview Survey revealed motor vehicle fatality rates of 32.5 per 100,000 person-years among black men, 10.2 among Hispanic men, 19.5 among white men, 11.6 among black women, 9.1 among Hispanic women, and 8.5 among white women.[164] Much of the disparity was associated with social class.[164] However, differences in neighborhood design, road quality, automobile quality, and behavioral factors may be important, and need to be better understood.

Pedestrian fatalities disproportionately affect members of minority groups and those at the bottom of the economic ladder.[164] In Atlanta, for instance, pedestrian fatality rates during 1994–1998 were 9.74 per 100,000 for Hispanics, 3.85 for black people, and 1.64 for white people.[41] In suburban Orange County, California, Latinos represent 28% of the population but account for 43% of pedestrian fatalities.[165] In the Virginia suburbs of Washington, Hispanics represent 8% of the population but account for 21% of pedestrian fatalities.[166] The reasons for this disproportionate impact are complex and may involve the probability of being a pedestrian (perhaps related to low access to automobiles and public transportation), road design in areas where members of minority groups walk, and behavioral and cultural factors (such as being unaccustomed to high speed traffic).

These examples illustrate that the health effects of sprawl may have disparate impacts on different sub-



populations. In other cases, there is less evidence of disparities in the health outcomes associated with sprawl, or when such disparities exist, they are likely to relate to factors other than land use and transportation. Examples include physical activity, water-related health outcomes, and mental health outcomes.

Physical activity and overweight vary by ethnic and racial group. People of color are more likely to be overweight[64,167] and more likely to lead sedentary lifestyles[168,169] than white people.[170–173] In the Third National Health and Nutrition Examination Survey (NHANES-III), for example, 40% of Mexican Americans and 35% of blacks reported no leisure time physical activity, compared with 18% of white people.[174] In this same survey, the mean Body Mass Index was 29.2 among black people, 28.6 among Mexican Americans, and 26.3 among white people.[170] The relationships among race/ethnicity, genetic factors, social class, the environment, diet, physical activity, and body weight are complex. There is no evidence that sprawl disproportionately affects people of color with regard to physical activity. In fact, poorer people may be less likely to own cars and therefore more likely to walk than wealthier people. Given the public health importance of overweight, obesity, and related health conditions, and the fact that relatively little research has addressed disparities in environmental contributors such as sprawl, further data on these relationships are needed.

In contrast, there is no evidence that sprawl-related threats to the water supply disproportionately affect poor people or members of minority groups. Similarly, there is no evidence that the mental health consequences of sprawl, such as road rage, affect various racial/ethnic groups differently. In the driving behavior survey data cited previously, no racial/ethnic differences were found in self-reported aggressive behavior. Although black people were slightly less likely to be the victims of aggression than white people or members of other racial/ethnic groups, this difference was not statistically significant.[103,104]

In summary, some of the health consequences of sprawl appear disproportionately to affect vulnerable subpopulations, while others do not demonstrate this pattern. In many cases we do not have sufficient data to reach firm conclusions. Given the significance of the health outcomes involved, the moral imperative of eliminating racial and ethnic health disparities, and the steady increase in sprawl, these associations deserve continued public health attention.

SOLUTIONS

As discussed above, further research is needed to clarify the complex relationships among land use, transportation, and health. What approaches to urban planning, design, and construction are most likely to reduce air pollution, reduce urban heat, encourage physical activity, reduce automobile-related morbidity and mortality, and promote mental health and a sense of community? Although this article has focused on the health consequences of sprawl, other forms of built environment—dense cities, remote rural areas, and small towns—all have advantages and disadvantages that need to be assessed. It is likely that many different kinds of built environments can promote health, and that optimal approaches will borrow elements of cities, suburbs, and small towns.

Some interventions may be relatively simple, such as planting more trees or providing more sidewalks. Others are more complex and expensive to implement, such as mass transit and mixed-use zoning. For each of these, standard health research methods—ranging from clinical trials to observational epidemiology—may offer insights. This research will require innovative partnerships with other professionals, such as urban planners, architects, and real estate developers.

It is especially important for health researchers to recognize and study "natural experiments." Patterns of urban land use are changing, with migration back into inner cities, urban growth boundaries that restrict development to certain areas, development of mixed-use projects, innovations in mass transportation, green space programs, and related initiatives. Such efforts offer opportunities for health researchers who can examine their effects on relevant health endpoints.

As we recognize and understand the health costs of urban sprawl, we can begin to design solutions. Many potential solutions are found in an urban planning approach that has come to be known as "smart growth," characterized by higher density; more contiguous development; preserved green spaces; mixed land uses with walkable neighborhoods; limited road construction balanced by transportation alternatives; architectural heterogeneity; economic and racial/ethnic heterogeneity; a balance of development and capital investment between central city and periphery; and effective, coordinated regional planning.[116,175–178] Importantly, many of the health-related benefits that could flow from this approach—less air pollution, more physical activity, lower temperatures, fewer motor vehicle crashes—would also yield collateral benefits, such as a cleaner environment and more livable neighborhoods.

If the health consequences of sprawl represent a "syndemic"[179]—a combination of synergistic epidemics that contributes to the population burden of disease—then solutions may also operate synergistically, ameliorating several health problems.

Health professionals can play an important role in designing and implementing transportation and land use decisions. Similarly, those who have traditionally managed these issues—urban planners, architects, engineers, developers, and others—should recognize the important health implications of their decisions and seek collaboration with health professionals.

CONCLUSIONS

Urban sprawl is a longstanding phenomenon. It began with the expansion of cities into rural areas and accelerated greatly during the last half of the 20th century. As the 21st century begins, approximately half of Americans live in suburbs,[2] and the features of sprawl—low-density land use, heavy reliance on automobiles for transportation, segregation of land uses, and loss of opportunity for some groups, especially those in inner cities—are widespread and familiar.

This article has discussed the relationship between sprawl and health based on eight considerations: air pollution, heat, physical activity patterns, motor vehicle crashes, pedestrian injuries and fatalities, water quality and quantity, mental health, and social capital. The data show both health benefits and health costs. As is true for most public health hazards, the adverse impacts of sprawl do not fall equally across the population, and those who are most affected deserve special attention.

As we address sprawl on a variety of levels, from personal transportation decisions to local zoning ordinances, from regional mass transit and land use decisions to federal regulations, it is essential to incorporate health considerations into policy making. Because the health effects of sprawl are unevenly distributed across the population, it is equally essential to incorporate considerations of social justice and equity.

Preparation of an earlier version of this paper was partially supported by the Atlanta Transportation Equity Project (ATEP) at Clark Atlanta University, under a grant from the Turner Foundation. The author thanks Robert Bullard, PhD, Richard Jackson, MD, MPH, and Larry Frank, PhD, for invaluable comments.

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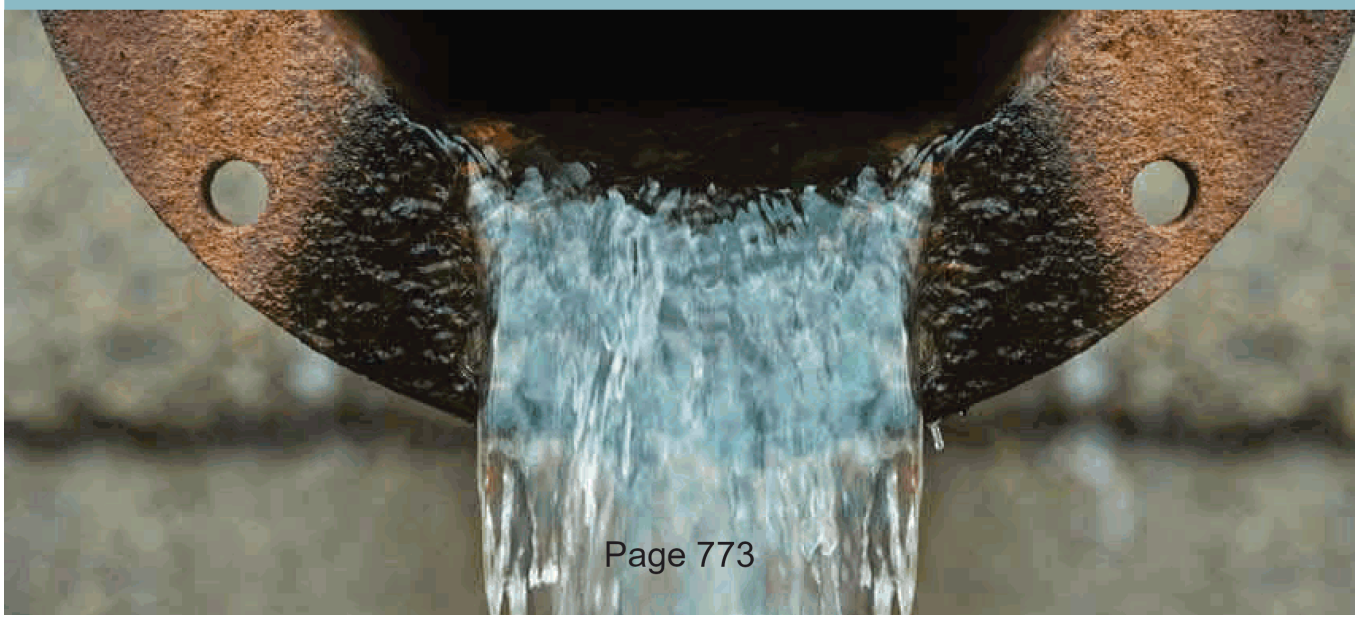
Submission No: 007
Attachment 2

Clean Water, Healthy Sound

A Life Cycle Analysis of Alternative Wastewater Treatment Strategies in the Puget Sound Area

September 2011

CASCADIA
GREEN BUILDING COUNCIL



ACKNOWLEDGEMENTS

FUNDED BY

The Russell Family Foundation

RESEARCH PROJECT TEAM

Cascadia Green Building Council

Katie Spataro, Research Director
Marin Bjork, Research Manager
Jason F. McLennan, CEO
Joel Sisolak, Advocacy and Outreach Director

2020 ENGINEERING

Colleen Mitchell, P.E., Project Manager
Jennifer Allen, Engineer
Mark Buehrer, P.E., Director

Ecoform

Jack Geibig, P.E., President

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EXECUTIVE SUMMARY

Urban and suburban communities around Puget Sound and nationally rely largely on conveying wastewater from its point of generation to large-scale, centralized treatment facilities before discharging treated effluent into the Sound or other receiving water bodies.

Many of these systems, built in the mid 1900s, are outdated and in need of extensive repair or expansion. Further, new regulations requiring higher levels of treatment and greater protection against combined sewer overflows will require large investments to upgrade the existing big-pipe infrastructure or to finance new facilities in order to halt the introduction of polluted water into the region's waterways. Communities around the country are now facing tough decisions about how to address the economic costs of treating wastewater for their growing populations.

The Living Building Challenge℠ invites forward-thinking designers, developers and communities to realign how water is used in the built environment, redefining the concept of 'waste' so that water is respected as a precious resource. Technologies such as composting toilets, greywater reuse and on-site treatment of wastewater for beneficial reuse have been proposed as best practices for treating and reclaiming water and waste. However, regulatory obstacles, cultural fears and a lack of information have largely prohibited their use in all but a few "demonstration" projects.

This study analyzes the overall environmental impacts associated with conventional, centralized treatment systems against four alternative, smaller-scale decentralized approaches using Life Cycle Assessment (LCA). Alternatives were selected based on a wide range of scale (small to large footprint), costs and energy requirements. Mostly passive systems such as composting toilets and gravity-fed greywater wetland treatment systems were compared to more energy-intensive recalculating biofilters and membrane bioreactors. A separate conveyance analysis looked at how density relates to environmental impacts associated with moving wastewater from its point of generation to a central location, regardless of the treatment technology employed. The LCA results provide insight on the pros and cons of commonly proposed decentralized and distributed treatment systems and how they relate to conventional practices at different density scales.

RESULTS

The LCA results presented in this report are separated into two sections — those associated with the conveyance analysis and those related to the treatment analysis. Key findings from the conveyance analysis reveal that pumping wastewater to its point of treatment represents a significant portion of the overall impacts. As density increases, negative environmental impacts associated with conveyance systems decrease substantially. Results show a 71% reduction in global warming impacts alone at densities of 10 dwelling units per acre, and 96% reduction in global warming at 30 dwelling units per acre. This is due to the finding that operating energy associated with pressurizing and

pumping waste far outweighs the impacts associated with the material and excavation components of the systems over its lifetime.

These findings indicate that more distributed methods of collection that rely mostly on gravity-fed pipes will have fewer negative environmental impacts than systems that expend large amounts of energy for conveyance. The concept of 'wastesheds' shows how locations of existing pumping stations could instead be viewed as optimal locations for smaller-scale treatment systems.

The treatment analysis results indicate that the lower-energy systems (composting toilets and constructed treatment wetlands) have fewer negative environmental impacts compared to the baseline centralized system, while the more energy-intensive decentralized treatment systems (recirculating biofilter and membrane bioreactors) have substantially greater negative impacts. Conclusions from the treatment analysis highlight optimal solutions for building and district-scale treatment alternatives that rely on passive, low-energy systems and gravity-fed conveyance.

RESULTS OF LIFE-CYCLE ENVIRONMENTAL IMPACTS RELATIVE TO BASELINE FOR TREATMENT + CONVEYANCE SYSTEMS

IMPACT	UNITS	COMP TOILETS	MEMBRANE BIOREACTOR	RECIRC BIOFILTER	CONSTRUCTED TREATMENT WETLAND
Acidification	kg SO2-Eq.	-55%	1160%	88%	-43%
Aq. Ecotoxicity	Kg TEG Eq.	-62%	1190%	92%	-43%
Eutrophication	kg PO4-Eq.	-58%	1098%	76%	-48%
Respiratory Effects	kg PM2.5-Eq.	-33%	1083%	79%	-36%
Global Warming	kg CO_2-Eq	-44%	1113%	85%	-40%
Ozone Depletion	kg CFC 11-Eq	221%	942%	81%	-6%
Smog Air	kg NOx-Eq	-29%	887%	52%	-41%

This report also identifies further areas of research needed to gain a greater understanding of life-cycle impact drivers for each system, to expand the boundaries of the LCA study in order to evaluate water reuse potential of decentralized systems and to apply the findings broadly to communities at different scales.



PART 1
Introduction

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1.1 PROJECT OVERVIEW

PURPOSE

Current practices for managing wastewater in urban areas of the Puget Sound region and nation-wide involve conveying waste to large-scale, centralized treatment systems. These systems, some of which are outdated and in urgent need of maintenance or expansion, often result in the introduction of polluted water into the region's waterways, are energy intensive and extremely expensive to build and operate.

At the same time, green building programs and policies have advocated for a more holistic approach to water use and wastewater treatment in the built environment. Building owners and project design teams are seeking ways to maximize efficiencies and redefine 'waste' so that water is valued as a precious resource. Smaller-scale on-site or neighborhood-scale systems present an interesting alternative to capturing and treating waste from the built environment, but lack of information, current codes and regulations and cultural fears about wastewater have largely prohibited their use and broad-scale adoption.

The purpose of this study is to analyze and compare the environmental impacts associated with current models of centralized treatment systems against alternative, smaller-scale decentralized systems using Life-Cycle Assessment (LCA). Utilizing the LCA approach, this study seeks to provide insight on the pros and cons of commonly proposed decentralized or distributed treatment systems and how they relate to traditional methods at different density scales. In doing so, we have the ability to take a step back and assess a wider range of risks associated with conventional practices for planning, designing and regulating wastewater systems in our communities.

The longer-term and overarching goals of this research are to help raise national awareness about current and emerging small-scale wastewater technologies, and to help influence policy and infrastructure planning around wastewater in the future.

AUDIENCE

While the focus of the research contained here is specific to the Puget Sound region, Clean Water, Healthy Sound is intended to serve as a resource for other regions around the state and the nation. Primary audiences include:

- Local and state public health agencies
- Policy makers
- Environmental agencies
- Wastewater and stormwater utilities
- Local planning and building departments
- Architects, engineers, contractors and developers

RESEARCH OBJECTIVES

- Provide an understanding of the relative environmental impacts of various treatment options using the LCA framework
- Empower building owners and project design teams to advocate for decentralized or distributed systems
- Provide valuable research to help inform future policy and infrastructure planning around wastewater

METHODOLOGY AND APPROACH

The information in this report represents the results of a 12-month analysis of conventional and alternative wastewater treatment strategies. A preliminary literature review of existing research was conducted in order to gain an understanding of current practices for treating wastewater in the Puget Sound region, alternative technologies available today and any prior LCA research on wastewater systems from both national and international sources. A list of resources on these topics is contained in Appendix E. The following questions established the foundation of the study and provided the basis for the project approach:

- What is the optimal scale for wastewater treatment systems?
- What is the relative environmental impact of centralized treatment systems vs. small-scale distributed treatment options, and what are the major drivers of those impacts?
- What effect does density have (and the associated conveyance needed to carry wastes different distances) on the overall life-cycle impacts, regardless of the treatment technology employed?

In partnership with experts in the wastewater engineering and LCA fields, Cascadia's approach to this study involved selecting a mid-sized community in the Puget Sound region with an existing centralized wastewater treatment facility to inform the baseline of the analysis. Extensive research was then completed to categorize decentralized treatment systems and to select the most appropriate options for comparison. Ultimately, four small-scale treatment systems were chosen for the purposes of this study: composting toilets, constructed wetlands, recirculating biofilters, and membrane bioreactors.

CENTRALIZED VS. DECENTRALIZED

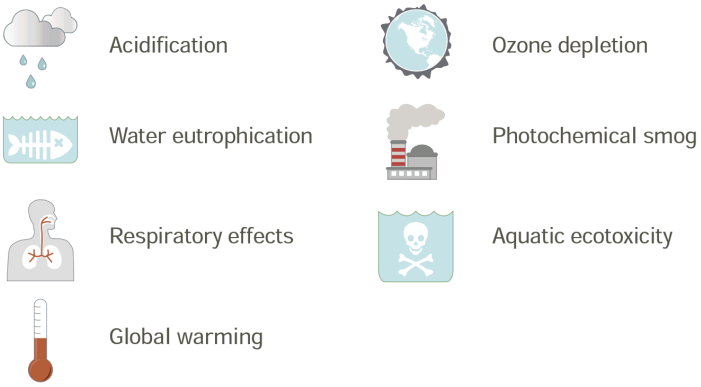
Decentralized wastewater management systems are those that provide collection, treatment, and dispersal or reuse of wastewater from individual buildings or clusters of buildings at or near the location where the waste is generated. These types of systems may treat sewage onsite through natural and/or mechanical processes, or may utilize more distributed management systems to collect and treat waste at a neighborhood, district, or small community scale.

By contrast, centralized systems typically convey wastewater (and sometimes stormwater) collected from a relatively large area, such as an entire city, through an extensive network of gravity-fed or pressurized pipes to a large, centralized treatment facility.

Data was gathered on both the centralized and the decentralized systems, including:

- Quantification of material and chemical inputs of each system broken down by weight
- Chemicals or materials consumed and emissions released per year during the use/ operation of each system
- Process-specific data for the installation or construction of individual treatment technologies including manufacturing processes for each major product component
- Waste treatment capacity data and other data necessary to allow for adequate scaling of impacts for comparison

LCA modeling of each scenario was performed using GaBi version 4.3 Life-Cycle Modeling software. Results are presented in the following environmental impact categories:



It is important to note that life-cycle cost, while a major driver in the decision to select one treatment option over another, was specifically excluded from this analysis. A number of valuable resources already exist for assessing financial costs and benefits of decentralized treatment systems. However, limited information is available on the environmental impacts over the life cycle of conventional and alternative systems. The findings of these environmental impacts, contained here, are intended to provide an overlay to the financial costs for a more comprehensive look at comparing various treatment and conveyance options.

1.2 BACKGROUND AND VISION

Cities across America are facing big decisions about how to meet the wastewater needs of their growing communities. Unfortunately, many communities are risking bankruptcy in order to maintain their aging and sprawling infrastructure. The risks associated with system selection are high due to potential health and safety hazards. Strategies for mitigating these risks have been born from the need to avail ourselves of the nuisances that arise when we do not properly dispose of our waste.

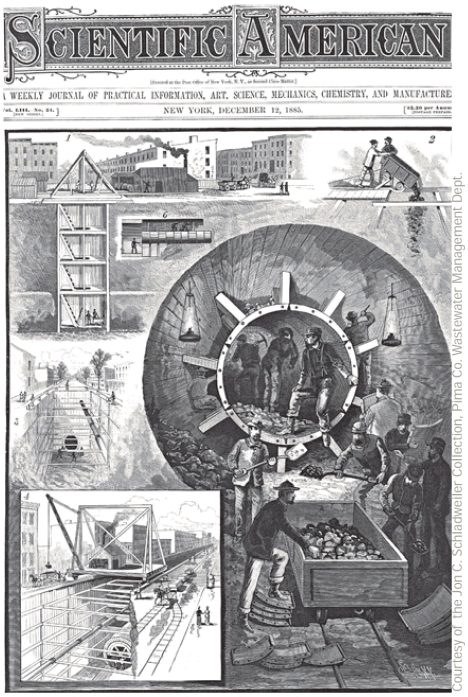
It has taken the efforts of scientists, outraged community members, and local, state and federal government agencies to forge the path toward healthy sanitation and environmentally sensitive waste treatment practices. As populations expand, water quality regulations become more strict and our infrastructure costs skyrocket, it will take the hard work of these same groups to negotiate the path to implement and manage waste treatment systems that will reduce the public health and safety, environmental and financial risks associated with dealing with our waste products. Understanding the events that shaped our existing centralized system, the problem with the present centralized waste treatment paradigm and the barriers that must be overcome to successfully integrate alternative waste treatment systems is imperative if we are to avoid the inevitable complications of continuing down the current path.

A BRIEF HISTORY OF WASTEWATER TREATMENT IN NORTH AMERICA AND THE PUGET SOUND REGION

Glancing back through history, waste disposal became increasingly urgent as population density increased. Solutions for how to best handle biological waste have been evolving ever since. In many areas serious waste treatment strategies did not emerge until the 19th century when correlations were drawn between waterborne illnesses and human contact with waste. Over time, centralized systems displaced decentralized systems because they were thought to better protect citizens from rampant disease, as well as easier to maintain and operate in compliance with impending laws.

In the United States, technologies for carrying away waste date back to the mid to late 1700s, about 100 years after communities began installing fresh water conveyance systems. In the Puget Sound, many early communities collected their waste in wood chutes, boxes and troughs and discharged it to the most convenient point, usually local water bodies at a lower elevation. The first large-scale strategy to replace the privy vault and cesspool systems was the centralized water-carriage sewer system. This system solved some problems and created others, especially in more densely populated communities.

Many city residents accepted the sanitation problems and nuisance conditions such as odor as a necessary part of urban life.[1] But because it wasn't widely understood that biological waste could contaminate water sources, open sewers lined the streets. First-floor dwellers could often connect to the sewer system via a drainpipe but it was commonplace for upper-story households to cast their biological waste products out the window to the streets below. City boosters advocated for centralized waste management and sewer systems, believing it would help attract people and industries with a cleaner urban image. Opponents to centralized waste management and sewers argued that a source of fertilizer would be lost, soil and water supplies would be polluted at the system outfalls and "modern sewer systems" would create and concentrate "disease-bearing sewer gas".[2]


SCIENTIFIC AMERICAN
A WEEKLY JOURNAL OF PRACTICAL INFORMATION, ART, SCIENCE, MECHANICS, CHEMISTRY, AND MANUFACTURE
NEW YORK, DECEMBER 12, 1885.
Courtesy of the Jon C. Schladweiler Collection, Pima Co. Wastewater Management Dept.

1885 Scientific American illustration showing construction of a large sewer using new tunneling methods in Brooklyn, New York.

The design of the early centralized systems was also vigorously debated, pitting advocates for combined sewer systems against proponents for separated sewer systems. The combined sewer systems used a single pipe to transport both stormwater and wastewater to a designated disposal location, as opposed to the separated sewer systems which required laying two pipes. Many cities unwittingly installed combined systems because they were thought to be less expensive to build, unaware of the environmental problems that would later be imposed on discharge sites.

In Olympia, "adequate flushing and some dilution were seen as benefits over separate sanitary sewers."[3] It was a widely held belief that 'dilution was the solution to pollution', making combined systems the superior choice. But as populations in cities grew and it

1 Burrian, Steven J., Stephan Nix, Robert E. Pitt, and S. Rocky Durrans. "Urban Wastewater Management in the United States: Past, Present, and Future." Journal of Urban Technology. 7.3, 2000.

2 Burrian, et al. "Urban Wastewater Management in the United States: Past, Present, and Future." 2000.

3 City of Olympia, Wastewater Management Plan - 2007–2012, September 2007.

became necessary to treat sewage to alleviate nuisance pollution problems, cities with combined systems now had significantly more volume to clean.

Major advancements in sewer system design did not take place until the end of the 19th century when studies emerged demonstrating that sand filtration processes could help lower the infection rate of waterborne illnesses such as cholera, dysentery and typhoid. It was at this time that sewage treatment plants became commonplace.



Six foot diameter sewer pipe, 1935.

Even after the King County Board of Health passed a resolution that required all wastewater discharged to Lake Washington to meet the United States Public Health Service bacteriological standard for drinking water, community members demanded that intercepting pipes divert the effluent away from Lake Washington. Outfalls were connected to the intercepting pipes by 1936, but large storm events continued to cause overflows that polluted Lake Washington. Many cities with similar situations began building 'compound systems' — combined sewer systems in some areas of town and separated sewer systems in newer districts — to alleviate this problem. In 1910, treatment of wastewater utilizing tanks and chemical reactions to filter, settle and bind contaminants found in wastewater became common in the U.S. However, Puget Sound communities fell a few decades behind this trend as it wasn't until the 1940s that most of the waterfront communities began building wastewater treatment plants. Recognizing that there was a problem with water pollution, the state established the Pollution Control Commission in 1945. It took ten more years for the commission to require permits for wastewater discharge.

For the majority of the U.S., wastewater treatment became widespread after the introduction of federal funding with the passing of the Water Pollution Control Act of 1948, commonly known as the Clean Water Act. Supported by the federal government, the Act provided planning, technical services, research and financial assistance to state and local governments for sanitary infrastructure to protect national waters.

As populations grew, the amount of wastewater discharged into our navigable waters increased. Even though wastewater treatment plants were providing secondary treatment, the sheer volume of wastewater discharged caused problems. A beach on the north end of Lake Washington frightened parents one summer because there was a bloom of Oscillatoria rubescens, a type of blue-green algae capable of producing toxins that affect the nervous system and liver. "The State Pollution Control Commission, long

worried about the lake, in August 1958 ordered that treatment-plant effluent be sprayed on the land, not dumped in the water."[4] Dilution was no longer the solution to pollution.

In the 1960s, pollution issues had become so problematic that the federal government amended the Water Pollution Control Act in 1965. The Act created the Federal Water Pollution Control Administration that was authorized to establish water quality standards where states failed to do so. The most ambitious and controversial goals were enacted with the 1972 version of the Clean Water Act. This version has been amended every year since its adoption.



©Courtesy of the Seattle Municipal Archives, #36885

Sewage outfall extension at Alki Point, Seattle, 1934.

The Environmental Protection Agency now has the authority to implement and enforce the Clean Water Act. With the adoption of the 1972 Act, the federal government had intended that a zero pollution discharge policy was to be implemented and enforced by 1985. These exceptional goals were not met, and the Puget Sound Water Quality Authority thought it necessary to make a similar declaration in 1985.

Even with today's relatively strict laws and fines enforced by the EPA, Combined System Overflow (CSO) events still occur. Efforts are being made to find solutions to eliminate these events, but the high cost and complicated nature of these infrastructure interventions make the correction of these violations slow. "King County has 38 CSO outfalls that can discharge untreated sewage and stormwater during periods of heavy precipitation. Over the past three decades, the county has invested $360 million in projects that have reduced CSO volumes by 71 percent from an annual average of 2.3 billion gallons in 1983 to approximately 665.5 million gallons per year from 2000 to 2007. The county plans to invest an additional $388 million in capital projects scheduled through 2030 to further improve management and storage of storm flows in the sewage system."[5]

4 Lane, Bob, Better Than Promised: An informal history of the Municipality of Metropolitan Seattle, 1995.

5 King County fined for sewer violations. Puget Sound Business Journal June 17, 2010.

KEY WASTEWATER MILESTONES IMPACTING THE PUGET SOUND		
late 1800s	'80-'90	Puget Sound communities, including Tacoma, Seattle, and Bellingham, begin to build sewer systems discharging waste into local water bodies, including Puget Sound.
early 1900s	'25	King County Board of Health declares that all discharge into the Sound must comply with the US Public Health Service bacteriological standard for drinking water.
1940s	'44	Tacoma citizens pass a $3 million bond issue to build a wastewater treatment plant to serve the central, southern, and eastern parts of the city.
	'45	The State Pollution Control Commission is established to help protect the Puget Sound from point source pollution.
	'47	Bremerton and Bellingham bring primary wastewater treatment plants online.
	'48	The Clean Water Act provides federal funding for wastewater treatment projects.
1950s	'52	Olympia and Tacoma bring waste treatment plants online.
	'55	Washington State requires permits for wastewater discharge into open water bodies.
	'58	The State Pollution Control Commission orders treatment plant effluent to be sprayed on land after beaches were contaminated with Oscillatoria rubescens at the outfall of the Lake City treatment plant.
	'58	King County Metro (KC Metro) becomes the first regional agency to monitor wastewater. One of their first actions was to halt all wastewater discharge to Lake Washington.
1960s	'65	KC Metro dedicates its largest secondary treatment plant, 144 mgd capacity, in Renton. Effluent is discharge to the Duwamish River.
	'68	KC Metro stops discharging effluent to Lake Washington. Visibility increases by 7.5 ft in the lake.
1970s	'70	The EPA is created to consolidate all of the agencies that work to provide environmental protection, and to ensure that all waters in the U.S. were "fishable" & "swimmable" by 1983.
	'72	An amendment to the Clean Water Act declares that it is in national interest to reduce all U.S. waters to zero pollutant discharge by 1985.
1980s	'85	The Puget Sound Water Quality Authority begins to require secondary treatment for permits to discharge effluent into Puget Sound.
	'87	KC Metro completes an 11-mile tunnel to redirect the Renton Wastewater Treatment Plant discharge deep in the Puget Sound because ammonia and chlorine levels skyrocketed in the Duwamish.
1990s	'96	KC Metro completes its expansion of the West Point Treatment Plant to comply with the 1972 Clean Water Act.
21st century	'10	King County's Bright Water Treatment Facility comes online and handles an additional 55 mgd.
	'11	Sixty-five sewage treatment plants still discharge over 600 mgd of wastewater to the Puget Sound. Even with secondary treatment trace amounts of heavy metals, toxic chemicals, medicines and personal care byproducts are polluting the Sound.

PROBLEMS WITH THE CURRENT WASTE TREATMENT PARADIGM

The current waste treatment paradigm is problematic because it implies first and foremost that the biological byproducts we deposit in our toilets are waste products, i.e. are without any value or use. Cultural fears and a lack of understanding on how to properly handle waste products safely creates a need to simply make it "go away." This convenience disconnects us from crucial nutrient cycles and affects our understanding about how to best use waste as a resource. Furthermore, our current waste treatment paradigm is rooted in the fact that bigger is better, though as this study reveals, that is not always the case.

Energy Use

Treatment of wastewater and the process of conveying that water from its point of generation to its point of treatment is energy intensive. According to the Northwest Energy Efficiency Alliance, "the wastewater industry consumes, according to EPRI (Electric Power Research Institute), approximately three percent of total energy nationally and approximately five percent of total energy in the Pacific Northwest."[6] In 2003, Metcalf and Eddy projected that by 2030 energy use by wastewater treatment plants will rise an additional 30-40%.[7]



A conventional large-scale centralized system.

6 Easton Consultants, "Northwest Energy Efficiency Alliance - Assessment of Industrial Motor Systems Market Opportunities in the Pacific Northwest," Final Report, August 1999.

7 Rocky Mountain Institute. Valuing Decentralized Wastewater Technologies: A catalog of benefits, costs and economic analysis technique, 2004.

Combined sewer systems which convey both wastewater and stormwater require even more energy based on the larger volume of water requiring treatment. Once combined, the facility treats all waste as if it is the same low quality. By understanding this relationship it becomes clear that alternative strategies such as low-impact development and on-site wastewater treatment provide opportunities to substantially decrease the amount of wastewater conveyed offsite for treatment. This reduces energy use and expands an existing plant's ability to service a growing community without having to raise taxes or rates to build additional treatment facilities.

Ground and Surface Water Contamination

Wastewater conveyance pipes are also known to leak. Leaking is not only a risk as pipes crack; exfiltration has also been sited as a culprit of groundwater contamination due to aging pipes, manholes and pump stations that have had insufficient maintenance and repair. Exfiltration is more likely to happen in pipe conveyance systems that are laid above the groundwater table.[8]

A CSO event is a more noticeable form of contamination. It is typical for modern sewer systems to be designed for peak flows to handle even the largest storm event. However, many older combined sewer systems are subject to flows beyond their capacity during heavy rains. Use of CSOs provided an economical way to prevent sewage backups into homes and businesses by releasing overflow waste and stormwater into



Courtesy of Tristan Baurick | For the Kitsap Sun

Sewage pipe leak at Eagle Harbor, Bainbridge Island, June 2009.

8 Amick, Robert S., P.E., & Burgess, Edward H., P.E. Exfiltration in Sewer Systems. EPA, December 2000.

adjacent bodies of water.[9] However, the CSO is an obvious danger to the health of our waterways. Due to the rigid infrastructure of the big pipe system, it is difficult to respond to these fluctuations and concentrations of contaminants.[10] When major catastrophe or malfunctions do happen at a centralized wastewater treatment plant or within the conveyance system, it can disable an entire service population and leave homes and water bodies vulnerable to contamination.

Combined system overflows are reported regularly around the Puget Sound. In June 2009, approximately 493,000 gallons of sewage overflowed into Eagle Harbor on Bainbridge Island, WA. The Kitsap County Health District imposed a ten-day no-contact order in Eagle Harbor and the surrounding waters from Yeomalt Point to Rockaway Beach. According to the EPA, an estimated 1.94 billion gallons of untreated sewage and polluted runoff are discharged annually from Seattle and King County combined sewer overflow outfalls into Puget Sound or its tributary waters.[11]

Water Quality

A more contemporary water quality problem is the increased consumption of pharmaceuticals and hormones, resulting in the presence of these materials in our waste stream. The effects of these trace pharmaceuticals are not yet known as water quality standards do not currently test for them. While the levels to which wastewater must be treated has steadily become more stringent, treating to higher levels will require large infrastructure upgrades to current systems.



Warning signs are posted in areas where sewage overflows occur.

Financing Future Growth

Population growth will place additional strain on older systems, with larger densities demanding increased infrastructure in urban and rural areas. John Crittenden of Georgia Tech University's Brook Byers Institute for Sustainable Systems says, "We expect in the next 35 years to double the urban infrastructure, and it took us 5,000 years

9 King County. "Combined Sewer Overflow (CSO)." Public Health - Seattle & King County. King County, 03 Feb 2010. Web. 8 Sep 2010.

10 Slaughter, S. "Improving the Sustainability of Water Treatment Systems: Opportunities for Innovation." Solutions. 1.3 2010.

11 US EPA News Release. Seattle and King County Agree to Step Up Efforts to Reduce Sewer Overflows to Puget Sound. 2009.

to get to this point. So we better do that right. We better have a good blueprint for this as we move to the future, so that we can use less energy, use less materials, to maintain the life that we have become used to."[12] The costs of this increase in infrastructure and maintenance is being considered by the EPA, the Government Accountability Office, the Water Infrastructure Network and others as they project a wastewater funding gap of $350 billion to $500 billion over the next 20 years.

According to the 2004 Valuing Decentralized Wastewater Technologies report prepared by the Rocky Mountain Institute for the U.S. EPA, decentralized and distributed systems can be more flexible in balancing capacity with future growth. According to the report: *"In smaller scale systems, capacity can be built house-by-house, or cluster-by-cluster, in a "just in time" fashion. This means that the capital costs for building future capacity is spread out over time, reducing the net present value of a decentralized approach, and resulting in less debt to the community as compared to the borrowing requirements of a large up-front capital investment. This is especially true in the event that a community sees less growth than anticipated in their initial planning, leaving them with overbuilt capacity and a large debt load to be shared by fewer than expected residents."*[13] In other words, if we continue our dependence on the current centralized wastewater treatment system we will unnecessarily lock ourselves into a fixed solution. Therefore, it is appropriate to consider how developing a hybrid of appropriately scaled waste treatment strategies might provide us with the most resilient future solutions.

BARRIERS TO THE ADOPTION OF DECENTRALIZED TREATMENT SYSTEMS

Despite the problems with our current paradigm for large, centralized wastewater treatment, numerous barriers exist for widespread adoption of decentralized and distributed alternatives. The primary barriers affect the regulations pertaining to wastewater treatment, the financial challenges and the cultural acceptance of new or unfamiliar systems.

Regulatory Barriers

Currently, wastewater is regulated across multiple jurisdictions and agencies — from plumbing codes enforced by local or state building departments, to local and state public health agencies regulating waste treatment, departments of environmental quality and protection regulating on-site wastewater treatment as well as wetland and shoreline

12 IEEE Spectrum Podcasts. "Decentralized Water Treatment is more efficient, flexible and resilient." Web. 7 Sep 2010.

13 Rocky Mountain Institute. Valuing Decentralized Wastewater Technologies: A catalog of benefits, costs and economic analysis technique, 2004.

protection that may involve approvals from local, state and national agencies such as the Corps of Engineers.

Regulatory barriers to decentralized and distributed waste treatment systems stem from the current bias toward centralized wastewater treatment and the associated lack of a body of authority with appropriate powers to operate, manage and regulate decentralized approaches. Particularly in urban and suburban areas where development codes and public health regulations require connections to public utilities, small-scale decentralized systems frequently lack any clearly defined regulatory pathways for approvals and instead rely on those developers with the will or financial means to navigate the regulatory system. Often times the regulations that do exist at the local, state and national levels overlap or conflict with each other, and sometimes there are gaps where no regulatory provisions are currently in place. Particularly in urban areas, developers hoping to install distributed or on-site systems are tasked with a lengthy or costly variance process to seek approvals for pursuing alternative waste treatment strategies, costs that are rarely recoverable. Furthermore, case-by-case approvals are seldom documented for the benefit of future projects or to guide future code updates.

Many regulatory agencies are responding to requests for alternative waste treatment strategies, though often in disjointed and incremental ways. For example, the International Association of Plumbing and Mechanical Officials (IAPMO) — the agency responsible for the development of the Uniform Plumbing and Mechanical Codes — has released a green supplement outlining voluntary provisions for water efficiency and water reuse strategies that jurisdictions can adopt. Additionally, local and state jurisdictions are beginning to open up legal pathways for reusing greywater for non-potable uses. But despite these and other efforts, regulatory resistance persists toward non-proprietary on-site treatment technologies such as constructed wetlands and waterless fixtures such as composting toilets.

In order to create support for alternative waste and wastewater treatment projects, a major shift from our current regulatory framework will be necessary. A more holistic approach to regulating waste is needed at all agency levels in order to support innovative projects and drive future policies. State and local building codes, land use codes and development standards must align to comprehensively address treatment practices with clearly defined roles and responsibilities for permitting, operating and maintaining these systems. Most importantly, wastewater regulations established to protect risks to public health will need to be assessed and updated to fully account for current environmental, social and economic risks related to centralized wastewater treatment systems, creating new standards in support of more integrated waste treatment systems at the site and neighborhood scales.

Financial Barriers

Decentralized and distributed wastewater treatment strategies should not necessarily be managed at the municipal level by publicly-owned utilities alone. As such, the cost burden for treatment systems, as well as their ongoing operation, maintenance and replacement needs can be shifted from the utility to the individual project owner. While this can create financial barriers for project owners, unique opportunities exist for utilities to develop fee structures and incentives to support the transfer of capital cost, expense and revenues to offset an owner's upfront investment in on-site water systems.[14] Utilities could even develop a new revenue stream by providing system maintenance and testing to ensure operations perform at required public health levels.

A project owner's upfront investments in on-site treatment systems can create burdensome financial barriers. Even when life-cycle costs are taken into account, artificially low utility rates for water and wastewater services translate to long payback periods. Not all utilities use full cost pricing — past and future, operations, maintenance and capital costs — to establish rates for water and wastewater services and therefore miss an opportunity to encourage conservation and reuse strategies employed by alternative waste treatment systems.

Financial barriers for distributed water systems can be directly related to the regulatory barriers noted above. Backup or redundant connections to municipal wastewater utilities may be required by codes even when a system is designed and operated not to use them. Composting toilets sometimes require backup sewer connections and associated plumbing, creating a financial disincentive for project owners to even consider their use. Likewise, capacity charges are established by utilities to recoup sunk costs for large investments in centralized infrastructure projects and are required to be paid by all building projects located within their service area, regardless of whether or not on-site systems can be utilized to meet individual treatment needs. Some municipalities have instituted innovative fee structures, such as the City of Portland's Bureau of Environmental Services in Oregon, which allows for emergency-only connections to their wastewater treatment facilities but charges large use fees in the event that the utility connection is actually needed.

Removing regulatory barriers to decentralized systems can help spur market innovations and new products available to designers and homeowners pursuing decentralized and distributed systems, thus bringing down upfront costs and reducing life-cycle cost payback periods. For years, financial incentives for energy efficiency measures and on-site renewable energy generation have been accelerating market adoption, serving as examples for similar approaches for decentralized and on-site wastewater systems.

14 Paladino and Company, Inc. Onsite Wastewater Treatment Systems: A Technical Review. Seattle: Seattle Public Utilities, 2008.

Cultural Barriers

In addition to regulatory and financial barriers, public perceptions about the safety of on-site wastewater management presents significant obstacles. Such fears are rooted in our historical management of water and waste and the resulting public health issues that surfaced. Previous generations suffered greatly from waterborne illnesses until laws and regulations were passed to support water-carriage removal of waste from urban areas. Today, education is needed to assure the public of the safety of modern decentralized water systems and inform them of their environmental, social and economic benefits.

Thanks to a history of disease outbreaks, coupled with marketing efforts by early flush toilet manufacturers, "flushing it away" is widely viewed as more civilized and advanced than any other solution for dealing with our water and waste. On-site systems are perceived to be a step backward in time and technology to a less developed age. Education and awareness building among regulators, designers, engineers and building occupants is necessary to fully highlight the environmental risks associated with wasteful practices. Water that has been treated for drinking purposes, that requires large inputs of energy to be conveyed to buildings and that is contaminated with human excrement and conveyed away again and treated with energy-intensive processes that release polluted water back into the environment does not represent our best technological advancements.

Addressing cultural barriers around decentralized water systems will require a shift in the fundamental ways in which we view human wastes. Education and perceived need will likely be the key tools to overcome the "ick" factor that has been prevalent over the past century. In doing so, we create opportunities to evaluate best practices for treating water and waste that respect water as the precious resource that it is, seek all possible ways to recover nutrients that are too important to flush away and ultimately discharge effluent back into the environment that is cleaner going out than it was coming in.

Moving Forward

If our wastewater treatment history is indicative of the future, the environmental and economic costs associated with maintaining and operating centralized wastewater systems will continue to escalate. It is through thoughtful evaluation of alternative systems that we can see how bigger isn't always better. With a deeper understanding of the long and short term ecological, financial, public health and safety risks, we are in a better position to advocate for development and installation of appropriately scaled systems that can meet the fluctuating needs of a community while still providing the expected convenience of tidy and odorless waste elimination.

THE LIVING BUILDING CHALLENGE℠
A VISIONARY PATH TO A RESTORATIVE FUTURE

The Living Building Challenge℠, which was launched by Cascadia and is operated by the International Living Future Institute, is widely regarded as the world's most advanced and stringent green building rating system. It applies to projects ranging from infrastructure to buildings to communities. The program was designed not only to recognize and reward the leading projects around the world, but also to shine a light on the issues and barriers that most need to be addressed in order to realize a truly sustainable future built environment. As part of this effort, a large focus has emerged around water issues in response to the significant regulatory, financial and cultural barriers preventing a truly sustainable water infrastructure from emerging.

Currently there are close to one hundred projects (primarily in North America) pursuing the challenge, and each project is asked to achieve close to twenty 'imperatives'.[15] Of these, two of the imperatives deal with water and waste, both found in the Water Petal[16] of the Living Building Challenge.

LIVING BUILDING CHALLENGE™ 2.0

15 Imperatives' is the word used by the ILBI in place of 'prerequisites'.

16 'Petal' is the word used by the ILBI in place of 'categories'.

The intent of the Water Petal is to realign how people use water and redefine 'waste' in the built environment, so that water is respected as a precious resource.

Imperative Number Five requires that:
One hundred percent of occupants' water use must come from captured precipitation or closed-loop water systems that account for downstream ecosystem impacts and that are appropriately purified without the use of chemicals.

Imperative Number Six requires that:
One hundred percent of storm water and building water discharge must be managed on-site to feed the project's internal water demands or released onto adjacent sites for management through acceptable natural time-scale surface flow, groundwater recharge, agricultural use or adjacent building needs.

These two imperatives work together to keep sewage separate from storm water and to ensure that projects use the minimum amount of water possible and always within the water balance of the site. Any water that leaves the site eventually does so in a cleaner state than when it entered.

What is interesting is that this current vision for water and waste is illegal in most states. Due to a morass of regulations and outdated thinking, project teams are prevented from taking a progressive and responsible approach to water use.

Cascadia's recent publication "Regulatory Pathways to Net Zero Water" highlights the issues that surround regulatory barriers to approval of Living Building projects in Seattle. Despite this, Living Building Challenge project teams are persevering — helping to change the mindsets of regulatory agencies, seeking approvals through 'pilot ordinances' and, in Oregon and Washington, literally changing state water law. As each new project is built, a new model and possibility for the future of a healthy and regenerative community emerges.

The first two projects certified as 'Living Buildings' each show different models for decentralized wastewater systems. With these two projects in mind, a new vision for the future of wastewater is explored in the following section.

TYSON LIVING LEARNING CENTER



Courtesy of Joe Angeles-WDSLC

Tyson Living Learning Center irrigates its landscape with greywater collected from building sinks.

This innovative classroom building near St. Louis, Missouri, provides one possible model of waste treatment. The classroom's bathroom contains a simple composting toilet system that does not use water in its operation, and human waste is turned into useful compostable material.



Courtesy of Clivus Multrum.

The waterless toilet by Clivus Multrum helps reduce overall water requirements.

This approach has several significant advantages:

- Cuts water use in the building by at least 50%
- Eliminates all pumping energy and energy used to treat the waste
- Eliminates the need for additional excavation and site impacts for sewage conveyance
- Provides a rich compost material that can enhance site landscapes
- Avoids downstream stormwater contamination and nutrient flows into local waterways

While this project is not the first to use composting toilets, it does so within the overall framework of the Living Building Challenge, completely powered by the sun and using no redlist chemicals with only a few exceptions. The possibility of using this approach as a model for all small and low-density communities is compelling.

THE OMEGA CENTER FOR SUSTAINABLE LIVING



Courtesy of Farshid Assassi

View inside the Eco Machine greenhouse. The system uses plants, bacteria, algae, snails, and fungi to clean the water before using it to recharge the aquifer.



Courtesy of BNIM Architects

Transverse section of the greenhouse and constructed wetland.

The Omega Center for Sustainable Living is a seasonal retreat center in Rhinebeck, New York. This certified Living Building is a small wastewater facility designed to accept and treat waste from several dozen surrounding buildings. Water is collected from toilets, sinks and showers and flows primarily through a gravity-fed network to the building. The wastewater is then treated through a proprietary technology known as an Eco Machine™, a series of interior constructed wetlands that house plants and millions of microbes that use our waste as food. As the water flows through the system (which is free of odor and completely solar powered) it is purified. The water exits the building and is further treated in an exterior constructed wetland that has the feeling of a park.

The Eco Machine processes approximately 52,000 gallons of wastewater per day when Omega's campus is open from April to October, and about 5,000 gallons per day in the off-season from November to March. The center is so beautiful that it is used as yoga studio and visitor center, drawing people out of their way to visit a sewage treatment plant.

This approach also has many advantages:

- Allows for existing buildings and infrastructure to be hooked up to an on-site, ecological system instead of pumping waste off-site for treatment
- Provides flexibility in scale based on population and density and can fit within the existing urban fabric wherever there are parks or open space
- Serves as an amenity within a community rather than a sunk cost
- Operates pollution free and without the use of chemicals

A VISION FOR THE FUTURE OF WASTEWATER

The current paradigm of waste treatment in America is to simply flush the toilet and never think, see or smell our waste again. This "out of sight, out of mind" paradigm has presented huge problems as outlined in the previous section of this report. Our existing infrastructure was built over a 30-50 year period when labor was undervalued and while we were undergoing a great national expansion. However, on a national scale we are learning that this rapid growth has expanded our communities too far, too fast, triggering the current crises around aging wastewater and stormwater infrastructure. Maintaining the current paradigm is signaling a path toward bankruptcy for many communities. Worse still, financial hardships for many citizens result in a lack of support for increased taxes for infrastructure that is largely taken for granted.

As encapsulated in the Living Building Challenge, envisioning the future of wastewater on a broad scale invites us to imagine "what if":

What if every future dollar spent on water and waste was not viewed as a drain on our municipal budgets, but instead helped contribute to improving the social and cultural life of the city?

What if we could build a new infrastructure that eliminated the use of harsh chemicals, which was carbon positive and cleaned the air, which created multiple forms of value and was largely self-regulating?

What if we could create a new infrastructure that saved money annually, created meaningful jobs, helped the environment and specifically our ailing rivers, streams and lakes and enriched the lives of all citizens?



Signage reinforces a psychology of fear of waste.



Courtesy of 2020 Engineering

Students learn about the Living Machine® at IslandWood Environmental learning center on Bainbridge Island.

Over the next 30 years, every community in the U.S. and Canada will likely need to replace, repair or expand its existing wastewater infrastructure. Knowing this, communities are faced with the opportunity and choice of either:

1. Continuing to invest in the current paradigm, thus shifting the burdens further into the future. This paradigm is built around the idea of getting sewage away from buildings as fast as possible and into larger bodies of water, preferably with greater levels treatment, or,

2. Creating a new paradigm for water and waste, and transforming our relationships with our most valuable resources. In this paradigm, nutrients are recycled and water is used wisely, reused and only treated to the level necessary for its reuse purpose. When discharged back into the environment, it is done so in a way that mimics natural systems, is celebrated as an amenity and is cleaner than when it entered into the building.

To realistically apply a shifted approach to water and waste, visions for a new wastewater paradigm must be explored at different scales.

The Living Building District – The Urban Solution

Stormwater – as precipitation falls on the roofs of buildings, instead of flowing quickly to a storm sewer it is captured and used within the buildings. Stormwater loading is greatly diminished while buildings are designed and retrofitted to use water within the carrying capacity of their local climate conditions.

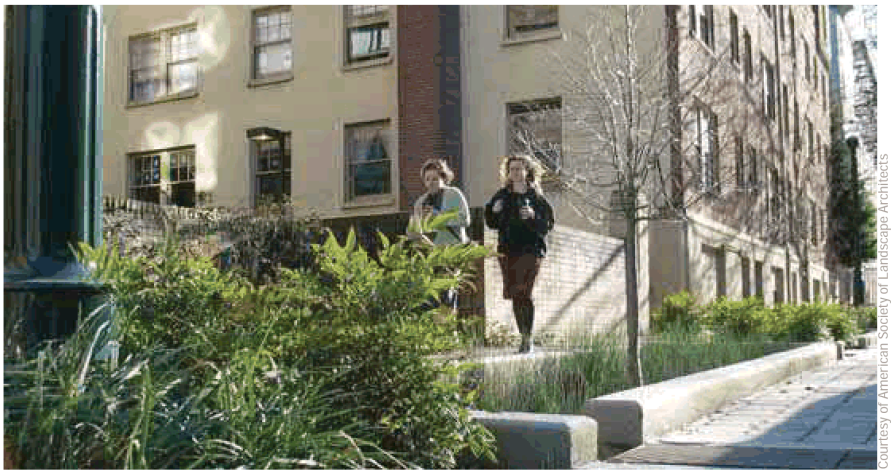
Excess building water and rainwater that falls on streets flows into specially designed bio-swales using native plants. A network of these swales, retention ponds and canals

grace the district, moving water slowly, recharging groundwater and evaporating. Water is celebrated, and trees and landscape plants—potentially even urban food—have ample water.

Wastewater – water from ultra-efficient toilets, sinks and showers flows by gravity to one of several neighborhood-scale treatment systems that use a combination of Eco Machines and constructed wetlands. In addition to their treatment function, the systems also provide valuable community amenities, greenspace and urban habitat. Always located 'downhill,' these systems become cherished elements of urban infrastructure like the great public libraries, museums and parks of the last century. Some buildings—based on geography and size—may have their own decentralized systems, privately operated but publicly regulated.

This model consists of several key innovations:

1. Dramatic changes in policy that encourage rainwater collection, greywater reuse and decentralized wastewater treatment.
2. A significant change in the typical urban street section, with a new focus on daylighting stormwater and keeping it separate from much smaller, buried blackwater-only sewer systems.
3. A new service offering by community sanitation departments that provides visible public service and supports decentralized strategies as a key part of their integrated system.
4. A highly visible network of waste treatment facilities that serve multiple functions and community needs.



Courtesy of American Society of Landscape Architects

The face of urban landscapes is changing. Many cities are integrating green infrastructure to reduce stormwater issues.

The Living Building Village Paradigm: The Rural and Low Density Approach

Most Americans will be living in more dense urban cities over the next few decades, as rural communities play an important role in supporting food production. For these lower-density communities, the cycles of water and waste are quite different from urban areas.

Stormwater – as precipitation hits the roofs of buildings it too is captured and used within the structure or easily diverted to nearby landscaping or agriculture needs. Since densities are low, stormwater is easily infiltrated on-site as part of the natural hydrological cycle. Streets are not lined with curbs and gutters to channel water into storm sewers to be managed offsite. Instead, everything is surface flow, designed to support the water needs of agriculture or aquifer recharge.

Wastewater – in low-density communities, there is a true separation between greywater and blackwater to facilitate recapturing of nutrients from water and wastes. Toilets are connected to composting units and are part of a community-wide composting program that helps build and maintain healthy soils. Instead of water bills and traditional septic pumping, community 'night soil' companies collect and redistribute compost material safely. The problematic link between excessive nutrient flow in our waterways and the need for petrochemical fertilizers on impoverished soils is broken.

This model consists of several key innovations:

1. A moratorium on extending sewer systems out to sprawling areas and a slow process of retrofitting homes, where possible, with composting toilets and greywater irrigation systems. All new homes include these features by mandate.
2. New business opportunities for licensed 'night soil' operators that provide the connection between homes and farms.
3. New county and small community standards for water, waste treatment and street design.

This vision represents a far stretch from the path many communities are currently on to design, regulate and plan for the future. Yet the concepts and technologies are simple. Lack of information on the full economic and environmental impacts of current practices presents a major barrier to realizing a preferred path forward with respect to water and wastes. This life-cycle assessment helps provide important data for designers and decision-makers seeking ways to advocate for a more restorative future.

1.3 STRATEGIES FOR DECENTRALIZED TREATMENT

OVERVIEW OF SELECTED TECHNOLOGIES

A wide range of proprietary and non-proprietary decentralized technologies is currently used to manage water and waste in the built environment. These range from simple, passive systems that mimic the biological, chemical and physical processes occurring in natural wetlands to more energy-intensive activated sludge technologies. Table 1.1 on the following page provides a snapshot of the various distributed technologies used to treat water and wastes.

Various treatment options can achieve different qualities of water based on their design and performance efficiency. Primary treatment systems only remove a portion of the suspended solids and organic materials from wastewater. Secondary levels of treatment can include removal of biodegradable organic matter, suspended solids and nutrients such as nitrogen and phosphorous. Tertiary treatment systems include disinfection of treated water and advanced removal of residual suspended solids through filtration.

TABLE 1.1: SUMMARY OF TREATMENT TECHNOLOGIES

TECHNOLOGY	DESCRIPTION	EXAMPLES
Non-water discharging containment systems	Collection and processing of human wastes without the use of water	Composting toilets Incinerating toilets Evaporation systems
Primary treatment systems	Pretreatment and settling of particulate materials Usually coupled with more advanced treatment technologies or with a drainfield which relies on soil to filter, treat and disperse effluent	Septic tanks
Suspended growth	Treats water through active microorganisms suspended in aerated environments. Also known as activated sludge process	Sequencing batch reactors Membrane bioreactors
Attached growth	Treats water through active microorganisms attached to granule, organic or synthetic media. Also referred to as fixed-film processes	Recirculating biofilters Intermittent sand filters Fabric/synthetic filters
Hybrid	Utilizes both suspended and attached growth processes to treat water	Moving bed biofilm reactors
Natural	Treats water by mimicking the biological, chemical and physical processes occurring in natural wetlands	Constructed wetlands

In order to narrow down the list of potential decentralized treatment technologies for analysis as part of this study, the following criteria were used:

1. **Treatment Level** - Recognizing that not all decentralized systems achieve the same level of treated water quality, this study considers only those technologies (or combination of technologies) that are capable of achieving an advanced secondary level of treatment or greater to support water reuse or the release of nonpolluting water back into the environment, with consideration for the beneficial use and appropriate handling of nutrients. Systems that only achieve primary or secondary levels of treatment, such as traditional septic and drainfields, are not included in this study.

2. **Scalability** - The selection of the most appropriate decentralized wastewater treatment system will vary widely and is influenced by site conditions, capacity needs, desired inputs and outputs as it relates to a building's overall water use and reuse goals, and the treatment technology selected (eg. suspended vs. attached growth). For this study, systems were evaluated based on their applicability to various building scales — single family residential to commercial and neighborhood-level scales — as well as their required energy input and overall footprint size. In addition, only commonly used systems are considered.



Courtesy of Whole Water Systems, LLC.

Constructed Wetland



Courtesy of 2010 General Electric Company

Membrane Bioreactor

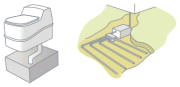
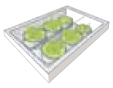
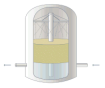
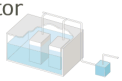


Courtesy of Clivus Multrum

Composting Toilet

Based on this criteria, four decentralized treatment strategies were selected as alternative scenarios in evaluating life-cycle environmental impacts compared to centralized conveyance and treatment. Table 1.2 below provides a brief summary of the four sample technologies.

TABLE 1.2: SELECTED DECENTRALIZED TREATMENT TECHNOLOGIES

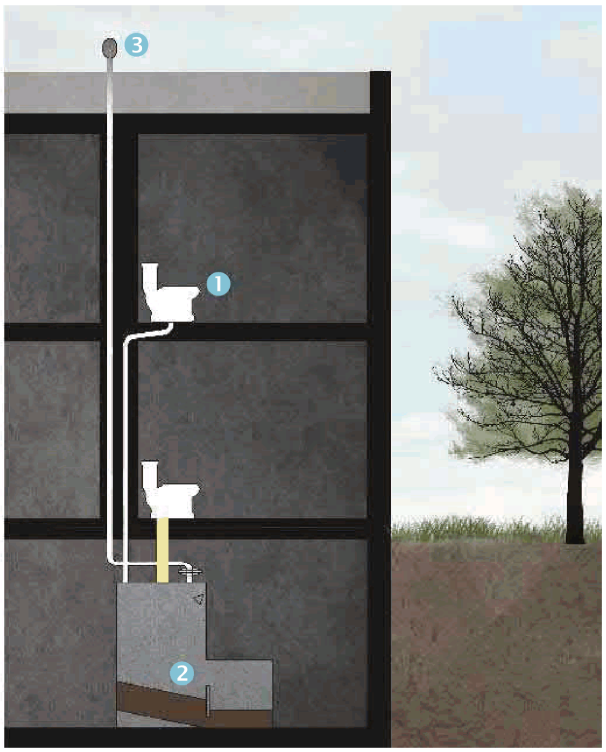
	FOOTPRINT	OPERATING ENERGY	TECHNOLOGY
Composting toilets + Constructed wetland* 	Small – Large**	Zero – Low	Non-water discharging containment system Nutrient recovery Attached growth aerobic treatment
Constructed wetland 	Small – Large	Zero – Low	Attached growth aerobic treatment
Recirculating biofilter 	Medium	Low – Medium	Attached growth aerobic treatment
Membrane bioreactor 	Small – Medium	High	Suspended growth aerobic treatment with synthetic membrane ultra-filtration

* Constructed wetland for treatment of greywater from sinks, baths/showers and laundry.
** Wetland and soil dispersal area for greywater can have large space requirements depending on generated flow.

COMPOSTING TOILETS

Composting toilets are non-water discharging systems, meaning that the processing of human waste is achieved with zero or minimal use of water for conveyance. This has the potential to greatly reduce a building's overall demand for wastewater handling as no blackwater is generated. Composting toilets rely upon biological and physical decomposition to turn excrement into valuable, nutrient-rich end products that can be used on- or off-site as a fertilizer or soil amendment. For the purposes of this study, composting toilets are paired with a constructed wetland to treat water generated from other plumbing fixtures within a building such as sinks, baths, showers and laundry.

FIGURE 1.1: COMPOSTING TOILET



System Components

1. Toilet Fixture
2. Composting Chamber
3. Ventilation

System Components

Toilet

Composting toilet fixtures come in a variety of shapes and sizes and are similar in design to a conventional water flush toilet. The fixtures are typically porcelain, polyethylene or ABS plastic and are classified as either dry, micro-flush, vacuum flush or foam flush depending on the technology used. Micro-flush units use approximately one pint of water per flush. Urine-diverting toilets separate liquid from solid waste at the fixture location to optimize nutrient separation and collection. Toilet fixtures can be mounted either directly above the composting chamber or may be located several stories above the chamber connected by a 4"-12"diameter piped chute. For foam flush and micro-flush models, chutes can bend up to 45 degrees, allowing for flexibility in the system layout at different stories of the building rather than stacking fixtures directly over a centralized chamber.

Composting Chamber

In many composting units, decomposition takes place in a tightly sealed plastic, fiberglass or concrete composting chamber. Some designs have sloped chambers to separate urine from feces. Others use electric or solar heat to ensure optimal temperatures for the composting process. Drums or mechanical stirring provide mixing and aeration.

All chambers include an access door for removal of composted end products and most require an overflow for the discharge of liquid wastes. Chambers are sized based on system loading and can serve individual or multiple toilet fixtures. Some designs feature dedicated urine collecting chambers that allow for the collection and processing of urine separately from solid wastes.

Ventilation

Ventilation ensures adequate oxygen and the proper moisture and temperature levels necessary for the composting process. A ventilation system includes an air inlet and exhaust vent for removing odors, excess heat, carbon dioxide, water vapor and other byproducts of aerobic decomposition. Passive systems require little or no energy input while more intensive systems require electricity (typically 12 volts or less) for air circulation and mixing of the composting material. Solar powered fans can be used to drive the ventilation system.



Courtesy of Clivus Multrum, Bilyana Dimesitrova, David Swift, The Bairds.

Technology

Composting toilets use an aerobic decomposition process to slowly break down human excrement to 10-30% of its original volume into a soil-like material called humus.[17] Organisms that occur naturally in the waste material, such as bacteria and fungi, perform the work of breaking it down. Sometimes compost worms are added to accelerate the process.

During the composting process, optimal moisture content of the waste should be maintained at around 40-70&. Urine can be separated from feces. Additionally, excess water vapor and carbon dioxide produced in the process are mechanically vented to the outside through the unit's exhaust system. This venting also controls odors. Mechanical or manual mixing of the waste improves aeration, and bulking agents such as hay, wood chips, saw dust or other carbon sources can be added to provide space for microbial colonization.

Composting toilet technology is defined by either a continuous or batch process. Toilets that utilize a continuous process deposit new waste materials on top of the composting mass while finished material is removed from the bottom or end of the unit. In this system, risk of contamination in composted end products is a concern and proper maintenance and oversight is essential. In a batch process, excrement is collected for a certain period of time and is then set aside for months or years while the composting process occurs.

Some composting toilet models do not use water or other liquids to carry waste to the collection chamber. Others feature a "micro-flush," utilizing 1/10th of a quart of water to flush urine only. Foam-flush toilets use a mixture of water and a compost-compatible soap to create a foam blanket that transports waste to the composting unit. With any of these technologies, the end products are either used on-site as fertilizers or hauled offsite to an appropriate handling facility. Depending on the size of the system, the time required for the composting process might range from three months up to several years.

Composting toilets address potential pathogens found in human waste through the process of composting, or through the natural production of predatory organisms toxic to most pathogens that occur during the composting process. One key advantage to composting toilets is that they keep valuable nutrients such as nitrogen and phosphorous in tight biological cycles without causing the potential environmental risks to receiving water bodies inherent in conventional wastewater treatment plant operations.[18]

Advantages/Disadvantages

Because they require little or no water supply, composting toilets are a good fit for geographic locations with limited water resources, such as areas affected by drought.

17 US EPA. Water Efficiency Technology Fact Sheet. Composting Toilets. 1999.

18 US EPA. Water Efficiency Technology Fact Sheet. Composting Toilets. 1999.

Likewise, because they are non-water discharging systems, locations where on-site wastewater management options are limited due to site constraints, high water tables or shallow soils make composting toilets a feasible alternative. In cold climates, composting chambers might need to be heated and/or insulated to ensure optimal temperatures for decomposition and pathogen removal.

Composting toilets are an obvious fit for areas not already serviced by municipal sewers as they eliminate the need for extensive infrastructure brought in to service a building or neighborhood development. Utilizing them in urban locations presents opportunities to reduce demand on existing municipal wastewater treatment infrastructure and extend the life of these systems, which are often maintained and updated through expensive public funding. Composting toilets may be more challenging to incorporate into retrofit applications than new construction due to the space needed for the composting chamber. For retrofits, micro-flush or vacuum-flush toilets can be installed to convey wastes to a composting chamber located outside the building envelope.

Composting toilets are suitable for any building typology, and successful examples exist at all scales. Dry toilets may be best designed into single-family houses, while micro-flush or foam flush models are better suited for multifamily or commercial buildings. Like all decentralized water systems, composting toilets require a commitment by homeowners, building owners and/or maintenance staff to provide management and oversight of the system to ensure proper performance.

Costs

Costs for composting toilets can range from $1,000-$5,000 for individual, self-contained units. Larger scale centralized systems can require a substantial investment on the part of the building owner or developer, though there is great opportunity for considerable savings on water and wastewater utility fees over the life of the system. The payback period on any scale system is highly dependent on water and wastewater rates, with higher rates providing a financial incentive to curb water use altogether. Many commercial scale systems such as those used at the Chesapeake Bay Foundation Headquarters' in Annapolis, Maryland calculated a payback in less than ten years.[19]

Lifecycle costs and paybacks for utilizing composting toilets on a neighborhood-scale project can be minimized when compared to the upfront cost of installing infrastructure needed to convey wastewater from individual buildings to sewer mains, sometimes including the sewer mains to the development altogether.

19 WERF. Modeling Onsite Wastewater Systems at that Watershed Scale: A User's Guide. 2009.

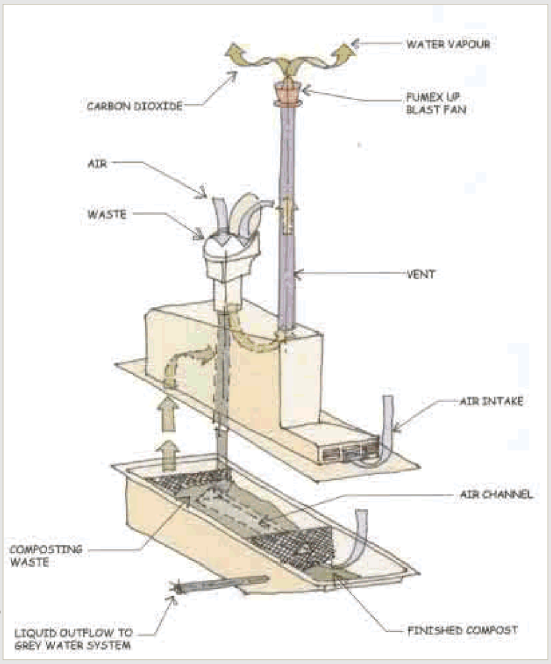
C. K. CHOI BUILDING: THE INSTITUTE OF ASIAN RESEARCH

Date Completed: 1996
Location: Vancouver, British Columbia, Canada
Owner: University of British Columbia
Project Type: Campus / Office Building
Project Size: 34,400-sf
Site Area: 18,000-sf
Capacity: 225,000 uses / year
System Selected: Clivus Multrum
Composting Toilet Model M28



Courtesy of Clivus Multrum

The CK Choi Building was the first of its size to install composting toilets in North America. The building eliminated the need to connect to the campus sewer system and reduced potable water demands by over 99,000 gallons per year. The building has ten composting toilets and three trapless ventilated urinals that require no water. The composting unit's five-tray system allows maintenance staff to add wood chips and red wiggle worms that facilitate the process of turning solid waste into a humus-like topsoil rich in nitrogen and other useful elements. At the time the project was being designed, Vancouver's plumbing code did not address a process for regulatory approvals, and there were no North American precedents to illustrate how the system would perform.



Courtesy of Jim Burns, Stantec.



Courtesy of Clivus Multrum

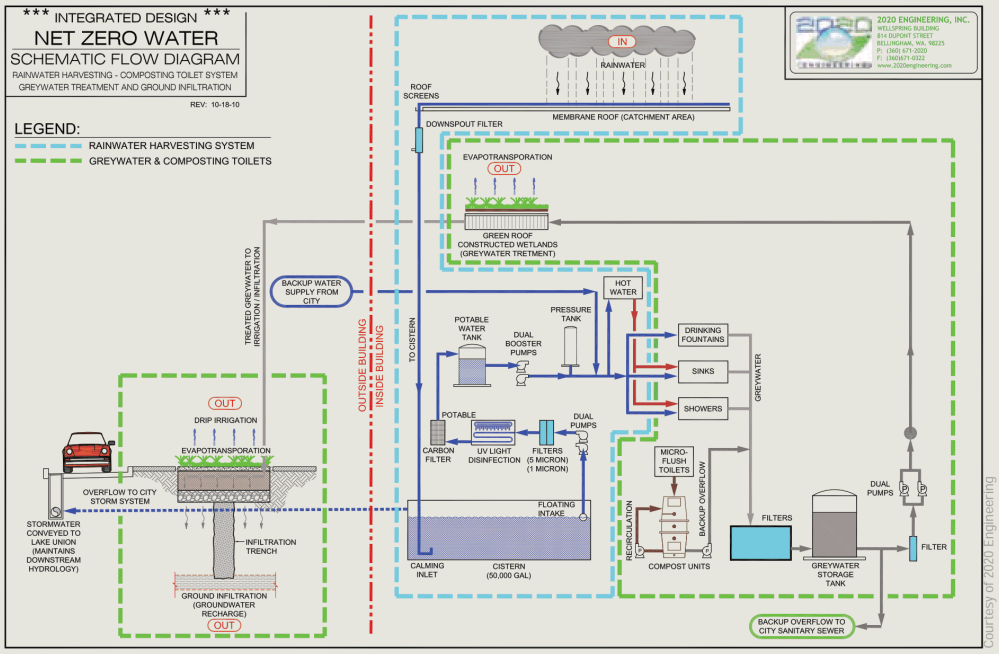
BULLITT CENTER

Date Completed: Late 2012
Location: Seattle, WA
Owner: The Bullitt Foundation
Project Type: Commercial / Office
Project Size: 42,773-sf
Site Area: 10,000-sf
Capacity: 166 daily occupants
System Selected: Phoenix composting unit / constructed wetland



Courtesy of Miller Hull and Point 32

The Bullitt Center includes foam-flush and dry-flush (first floor only) composting toilets on each floor that reduce the building's overall water use and eliminate the discharge of blackwater. Greywater is collected in the basement and pumped up to a recirculating constructed wetland located on the third floor roof that uses natural, chemical, physical and biological treatment processes to treat the daily greywater flows.

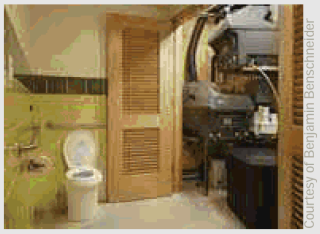


Courtesy of 2020 Engineering

BERTSCHI SCHOOL
LIVING BUILDING SCIENCE WING

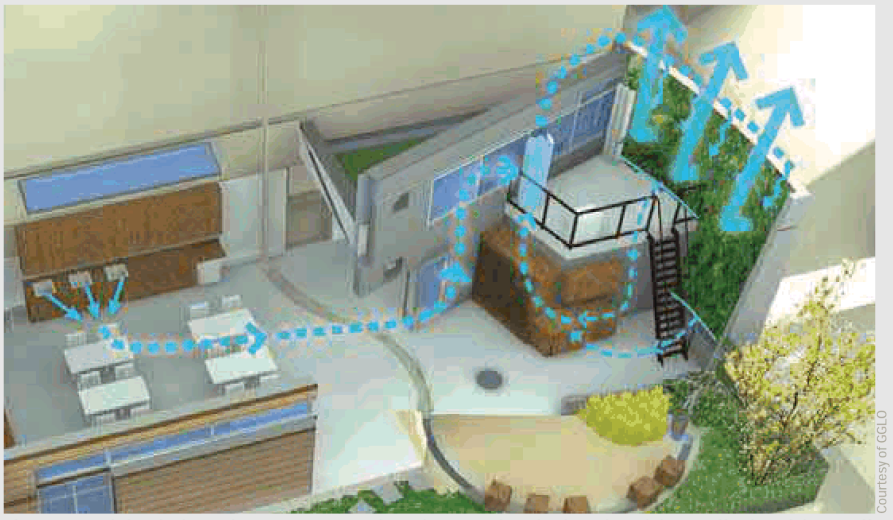
Date Completed: February 2011
Location: Seattle, WA
Owner: Bertschi School
Project Type: Campus
Project Size: 1,425-sf
Site Area: 3,800-sf
Capacity: 17,500 uses/year
System Selected: Aqua2use, G-Sky Living Wall, Envirolet VF 750 FlushSmart





Courtesy of Benjamin Benschneider

The Bertschi School's Living Building Science Wing has a composting toilet and innovative greywater re-use system. Greywater from the sinks and lavatory is routed through a series of filters, and then evapotranspirated by vegetation on the living wall. The project gained approval for the greywater reuse system by installing a conventional overflow to the City's sewer system. The local health department permitted the system through an administrative ruling on the Uniform Plumbing Code. The composting toilet only uses .2L of water per flush, drastically reducing potable water demand. The system aerates and pulverizes waste for faster composting.



Courtesy of GGLO

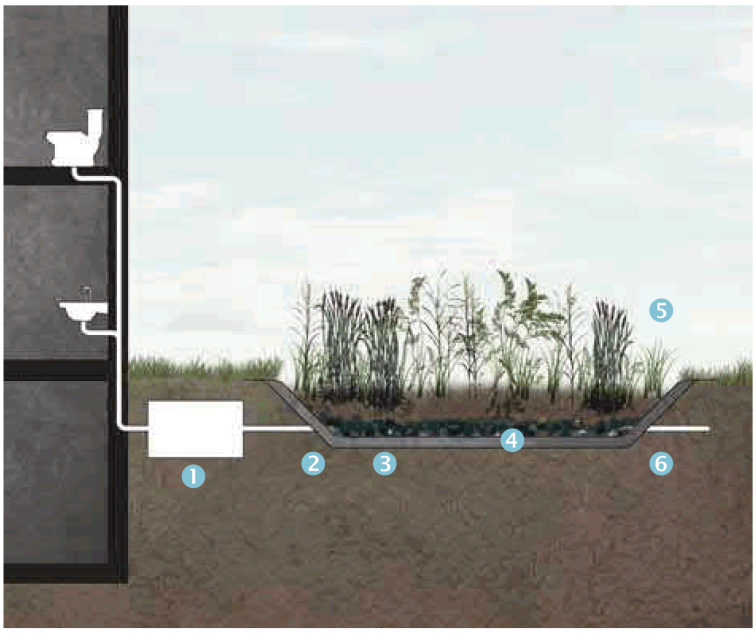
Classroom sinks drain to the greywater tank and pumped to the interior Living Wall. The Living Wall then evapotranspirates the greywater via a drip irrigation system.

CONSTRUCTED WETLANDS

Constructed wetlands treat wastewater by mimicking the biological, chemical and physical processes occurring in natural wetlands. These systems typically require little or no operating energy and can provide ancillary benefits as site amenities.

Constructed wetlands can stand alone as treatment systems or be utilized as a polishing step for improving effluent quality within a larger system. Surface flow wetlands are characterized by shallow, above-ground flooding which produces an anoxic environment to treat wastes. In these systems, the water surface is exposed to the atmosphere and carries the risk of odors, mosquitoes and potential human contact with wastewater. By contrast, subsurface flow constructed wetlands are designed as a bed or channel filled with media such as course sand or gravel. The water surface is maintained below the top of this medium, eliminating some of the risks associated with surface flow wetlands and increasing the treatment efficiency of the system. The following section highlights components and technologies associated with subsurface flow systems only.

FIGURE 1.2: CONSTRUCTED WETLANDS



System Components

1. Primary Clarification Tank
2. Inlet
3. Impermeable Liner
4. Planting Medium
5. Wetland Vegetation
6. Outlet

Systems can range in size from small on-site units to treat waste from individual homes or commercial buildings to large community-scale systems serving entire neighborhoods. In addition, there are more than 100 constructed wetlands in the U.S. treating municipal wastewater, the majority of which treat fewer than one million gallons per day.[20] Smaller scale systems typically treat anywhere from several hundred up to 40,000 gallons per day and are roughly 300-400 square feet in size for a single-family household.

System Components

Primary Clarification Tank
Constructed wetlands are generally preceded by a primary clarification tank for settling of solids. Depending on the geography of the site, primary clarified tank effluent is either pumped or gravity fed into the constructed wetland.

Planting Medium
Constructed wetlands consist of a shallow bed filled with porous packing material that supports wetland vegetation. Gravel and course sand is most often used as the planting medium, ranging in size from fine gravel (less than 0.25 inches) to crushed rock (typically less than one inch). The depth of the planting medium ranges from 1-3 feet deep.

Water level is controlled by the outlet structure and is typically maintained between 4 inches-24 inches below the top of the planting medium. The top of this porous material is typically at the same level as the surrounding terrain and is kept dry to control odor, insects and the potential for human contact with the water during the treatment process.

Wetland Vegetation
The bed is established with vegetation specifically selected to survive in fluctuating wet and dry conditions, and should ideally be native to the region and specific to the watershed, climate and altitude. While the planting medium provides the primary substrate for microbial growth, the vegetation provides additional surface area and supplies oxygen to the root zone.

In addition, the vegetation stabilizes the planting bed, provides a thermal barrier against freezing in cold climates, and improves the wetland aesthetics.[21]

Constructed wetlands are typically planted with a variety of species to provide a resilient and effective treatment process. Typical species include bulrush and reeds. Cattails, while often found in wetlands, are sometimes labeled as a noxious weed because they crowd out more desirable species. In addition, they do not have a favorable root structure for oxygen transfer or ideal root surface area for microbial growth.

20 US EPA. Wastewater Technology Fact Sheet. Wetlands: Subsurface Flow. 2000.

21 California State Water Resources Control Board. Review of Technologies for the Onsite Treatment of Wastewater in California. 2002.

Inlet/Outlet Devices
Inlet and outlet devices and earth berms are used to control the depth of water in the wetland. These controls ensure uniform horizontal and vertical flow patterns through the planting medium and maintain the water level below the surface.

Impermeable Liner
An impermeable liner provides a separation between the wastewater treated in the bed of the wetlands and the surrounding area. The liner prevents leakage and contamination of groundwater. The impermeable layer may consist of an on-site or imported clay layer. In areas with permeable soils, a synthetic membrane or concrete liner is typically used.

Disinfection
Constructed wetlands are adept at nutrient removal and suspended solids reduction. However, like any treatment technology, the effluent from these systems should not be considered disinfected. Depending on the intended reuse application, additional disinfection by ozone, ultra-violet light or chlorine may follow constructed wetlands as a final stage in the treatment process.

Technology

Constructed wetlands are designed to filter and treat contaminated water in much the same way that natural wetlands do. As wastewater enters into the constructed wetland it is treated both aerobically and anaerobically. The submerged plant roots and the surfaces of the gravel particles or other planting medium provide a substrate for the microbial processes necessary for treatment. The level and rate of treatment is proportional to the size of microbe populations and the contact time within the system.

The combination of aerobic and anaerobic environments within a constructed wetland provides comprehensive treatment of wastewater, including removal of nitrogen and biological oxygen demand (BOD). These systems are typically designed to handle fluctuating flows and variable conditions without significant adverse effects on effluent water quality. Systems can be upgraded through the use of mechanical filters and ultraviolet disinfection to allow for water reuse applications.

Design variations for constructed wetlands include how the water flows through the system, either horizontally or vertically, and how the water is introduced such as in a tidal flow or recirculating manner. In a tidal flow wetland, the planting media in which the vegetation grows is completely flooded from below and then allowed to drain, maximizing the treatment capacity per unit volume. Whereas horizontal flow constructed wetlands are typically restricted to a depth approximating the root depth of the vegetation (typically about three feet), vertical flow tidal wetlands can be deeper, and therefore require less land area than conventional systems.

In a recirculating flow constructed wetland, a pump is used to periodically recirculate effluent back into the wetland inlet for additional treatment. As the treated effluent accumulates in the basin, another wetland recirculation cycle begins. Recirculating vertical flow constructed wetlands can remove up to 99% of the fecal bacteria (E. coli) and over 80% of other wastewater constituents prior to discharge.[22]



Courtesy of Whole Water

Constructed wetland in Sun Valley achieves high levels of water quality before infiltrating the processed wastewater at a location close to its source.

Advantages/Disadvantages

Constructed wetlands are appropriate for projects at various scales and within a variety of climates. According to the U.S. EPA, constructed wetlands are best suited for upland locations and outside of floodplains to avoid damage to natural wetlands.[23] However, designers of these systems believe they are logical solutions in wetland areas when effluent is treated to high levels and used to recharge these ecosystems.

While space constraints can limit the application of constructed wetlands, subsurface flow systems are specifically engineered to maximize the amount of treatment capacity in a minimum amount of space — an essential component for utilizing them in more urban applications. Wetlands also can be constructed in multiple cells to accommodate site constraints.

Design flexibility allows constructed wetlands to be modified to meet specific site conditions or target specific pollutant loads. Research has shown that wetlands are also known to sequester metals and are an effective means for removing pharmaceutical compounds, unlike electro-mechanical treatment plants which generally pass through these potentially damaging compounds. This makes constructed wetlands an interesting option for hospitals and other sites where these substances are most prevalent.

Depending on the size of the system, constructed wetlands can be located on a building site or in a centralized location serving multiple buildings. Where elevation allows, they can be located for gravity flow. Otherwise, pumps are required to convey effluent to wetland cells.

22 Garcia-Perez, Alfredo, Don Jones, William Grant, and Mark Harrison. "Recirculating Vertical Flow Constructed Wetlands for Treating Residential Wastewater." Rural Wastewater. 8 Sep 2010.

23 US EPA. Wastewater Technology Fact Sheet. Wetlands: Subsurface Flow. 2000.

Research shows that these systems operate well even in cold climate conditions, though they may require larger surface areas. While they are sometimes enclosed in a greenhouse, it is not a requirement with properly designed systems such as those utilizing plants that thrive in the local climate. In fact, there are built systems operating outside at altitudes of 10,000 feet in locations which receive no direct sunlight in winter and with temperatures routinely dropping to 40 degrees below zero for multiple days in a row.

Constructed wetlands have the advantage of being a potential amenity on a project site by integrating the treatment system into the surrounding landscape design. Constructed wetlands can also be used to treat on-site stormwater runoff, improving water quality and protecting downstream receiving water bodies.

Costs

Constructed wetlands are often less expensive to build than other wastewater treatment options because they are primarily passive systems. They also have lower operating and maintenance expenses.

Total costs for subsurface systems can range from $10,000-$15,000 for an individual home. This cost can be lowered when coupled with composting toilets as the volume of wastewater generated is reduced by roughly 50%, thereby shrinking the required area of the constructed wetland. Costs often differ based on soil conditions, system loading and regulatory requirements.[24] Larger community scale systems can realize lower costs based on economies of scale such as the residential cluster system installed at Lake Elmo, Minnesota which cost an average of $5,700 per home.

Because it has no or few moving parts, constructed wetlands can be more durable than other mechanized systems used to treat wastewater, allowing for longer lifecycles and larger lifecycle cost benefits.

24 California State Water Resources Control Board. Review of Technologies for the Onsite Treatment of Wastewater in California. 2002.

SIDWELL FRIENDS SCHOOL

Date Completed: 2006
Location: Washington, D.C
Owner: Sidwell Friends School
Project Type: Campus
Project Size: 39,000-sf
Site Area: 72,500-sf
Capacity: 3,000 gpd
System Selected: Recirculating sand filters, Trickling filters, Constructed wetland



Wastewater is routed through a subsurface constructed wetland integrated into the landscape. The system includes a primary treatment tank for anaerobic breakdown of solids, a trickling filter and a series of tiered, gravity-fed constructed wetland cells where micro-organisms and wetland plants help break down contaminants in the water. Disinfected water is then reused for irrigation and toilet flushing in the building. The school integrates monitoring of the system in their curriculum.





Courtesy of Andropogon Associates, Ltd. and Kieran Timberlake

ISLANDWOOD

Date Completed: 2002
Location: Bainbridge Island, WA
Owner: IslandWood
Project Type: Campus
Project Size: 70,000-sf
Site Area: 255 acres
Capacity: 3,000 gpd / 36,000 uses/yr
System Selected: Composting toilet / constructed wetlands / Living Machine®



Courtesy of Clivus Multrum

IslandWood treats all greywater and blackwater to tertiary standards on site via a Living Machine, composting toilets and constructed wetlands. Treated greywater is used on-site for toilet flushing and for subsurface irrigation. The facility has integrated its waste treatment systems into its educational programs.

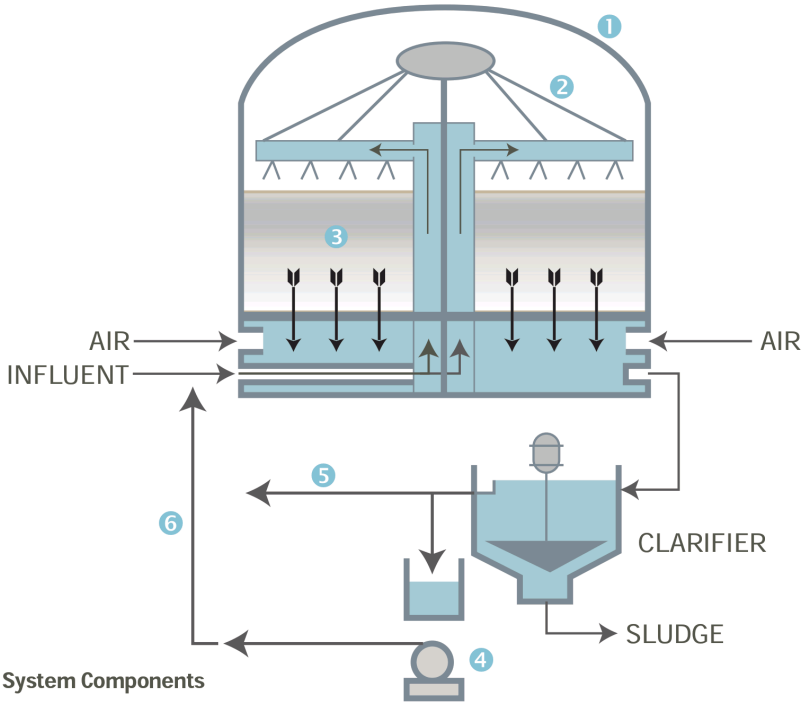


Courtesy of Islandwood

RECIRCULATING BIOFILTERS

Biofilters are among the oldest technologies used for the biological treatment of wastewater. [25] These systems consist of chambers packed with highly porous materials such as plastics or rock. The media in the chamber provides growth surfaces for an active microbial community to treat the water. Biofilters are sometimes referred to as intermittent filters, packed bed filters, attached growth or fixed film processes.

FIGURE 1.3: RECIRCULATING BIOFILTERS



System Components

1. Container
2. Distribution System
3. Support Medium
4. Pump
5. Treated Water
6. Recirculation

25 California State Water Resources Control Board. Review of Technologies for the Onsite Treatment of Wastewater in California. 2002.

System Components

Container
A container is used to house the support medium necessary for the attached growth treatment process. These containers are typically made from concrete, plastics or fiberglass.

Support Medium
The medium housed in the container supports the microbial community within the treatment system and defines the biofilter type. A variety of organic, granular or synthetic materials can be used, such as sand, gravel, crushed glass, expanded aggregates, slag, peat moss, wood chips, rubber, fabric and open-celled foam. The type of materials utilized in biofilters are typically chosen for their surface area, porosity or infiltration capacity characteristics.

Distribution System
A distribution system is used to apply wastewater to the biofilter in such a way to support optimal performance of the system. Several distribution methods can be used, such as orifice systems, spray systems and gravity or pressure-driven dosing systems, and the method is dependent on the infiltration capacity of the support medium. For pressure-driven distribution, pumps or dosing siphons may be used. Control systems can be designed to dose the biofilter either on a timed or an on-demand basis as wastewater is generated.

Collection System
The collection system harvests the treated water and either recirculates it back into the biofilter for further treatment or carries it to separate mixing tanks or soil adsorption areas. The collection system can be a simple effluent drain located under the active biofilter medium. In some cases it is separated from the active medium by a coarse layer of gravel or rock to limit migration of the biofilter material.

Technology

Biofilters utilize an attached growth microbial aerobic process to treat wastewater. In these systems, post-primary settled water is sprayed over the top of the biofilter chamber and the wastewater percolates through the media. This simple process effectively oxidizes and reduces harmful chemical wastewater constituents. Oxidative reactions generally take place near the top of the open-air filter chamber. Oxygen concentrations are consumed by aerobic bacteria and gradually decrease with filter depth. Anaerobic conditions near the base of the chamber provide effective reductive conditions.

Biofilters can be single-pass systems or recirculating (multi-pass) systems. In a single-pass system, the wastewater is applied only once before being collected and conveyed to other treatment tanks or dispersal systems. Recirculating systems are designed to repeat application of the wastewater across the biofilter before it is discharged. In these systems, the return flow is combined with untreated wastewater from the septic tank or primary settling tank, diluting the influent introduced into the system. Recirculating systems can be smaller in size as compared to single-pass systems due to the increased hydraulic loading rate. They also require more energy for pumping and controls whereas single-pass systems can use little or no energy, such as gravity flow systems.

Advantages/Disadvantages

Recirculating biofilters are an extremely robust method of waste treatment. Long-term performance testing has shown they can handle overloading (up to double design capacity) conditions for several months before water quality begins to degrade. They require relatively little power, using a low horsepower pump to gently irrigate media for about 30 seconds every 20 minutes or so. These systems typically are controllable remotely by telephone or the internet, making off-site monitoring and adjustment possible. They are capable of attaining an advanced secondary and tertiary wastewater standard that is upgradable to a water reuse standard by the addition of a tertiary filter and ultraviolet light disinfection. In addition, effluent odors are eliminated, and dissolved oxygen concentration is enhanced in the recirculation process.



Courtesy of Orenco Systems, Inc.

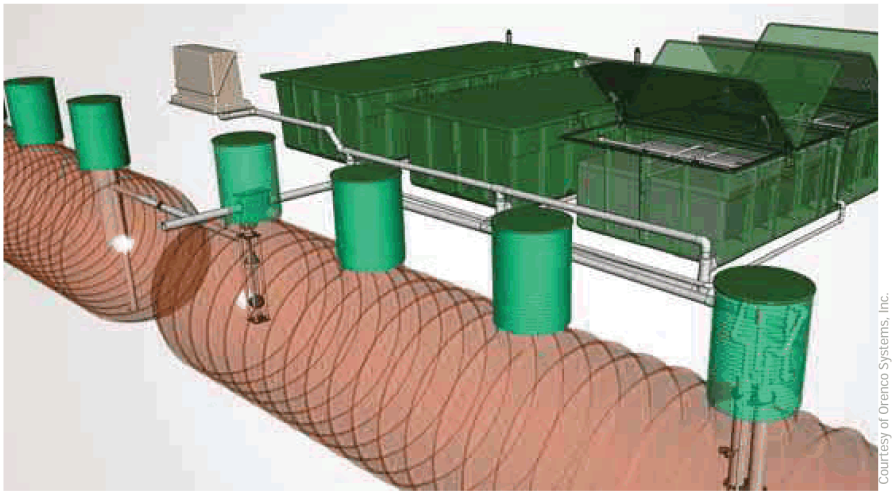
Advantex AX100 Filter Pod with hanging textile sheets.

Biofilter technology can be applied from individual residential projects up to the community scale. Proprietary models are engineered for commercial and industrial applications. Due to their reduced footprint size and ability to provide a reliable and high level of treatment, recirculating biofilters have often been used in areas not conducive to the traditional drainfield applications, such as places with poor permeability, high groundwater, shallow soils and limited drainfield area.

However, space constraints on site can be a limiting factor for biofilter technologies. Recirculating systems have a typical surface area footprint of 100 square feet for an individual home, while proprietary models such as the AdvanTex® system can be as small as 3 feet x 7.5 feet. Larger systems require approximately one square foot of land for every 25 gallons per day treated, making them more compact in size than passive subsurface flow constructed wetlands but less compact than packaged membrane bioreactors.

Costs

Recirculating biofilters can range in cost from $3,000-$10,000 for the biofilter alone, with septic settling tank and dispersal systems adding additional costs. Pumps and electrical components can be assumed to have at least a ten-year life span. Ongoing maintenance of the system is required to keep filters clean and functioning properly, though the level of effort required varies greatly across systems.



Courtesy of Orenco Systems, Inc.

The AdvanTex® filter pod with primary tank, recirculation tank, and vent fan assembly can treat 5000 gpd.

ROCKY BAY

Date Completed: 2007
Location: San Juan Island
Owner: Rocky Bay Residents
Project Type: Clustered Residential
Project Size: 4.87 acres
Site Area: 4.87 acres
Capacity: 3,120 gpd
System Selected: AdvanTex® Treatment System / Recirculating Biofilter

Rocky Bay is the result of hard work and commitment by each person living in the community. Eight homes clustered on site share the responsibility of ensuring that the AdvanTex 20® Pod Treatment system functions properly.





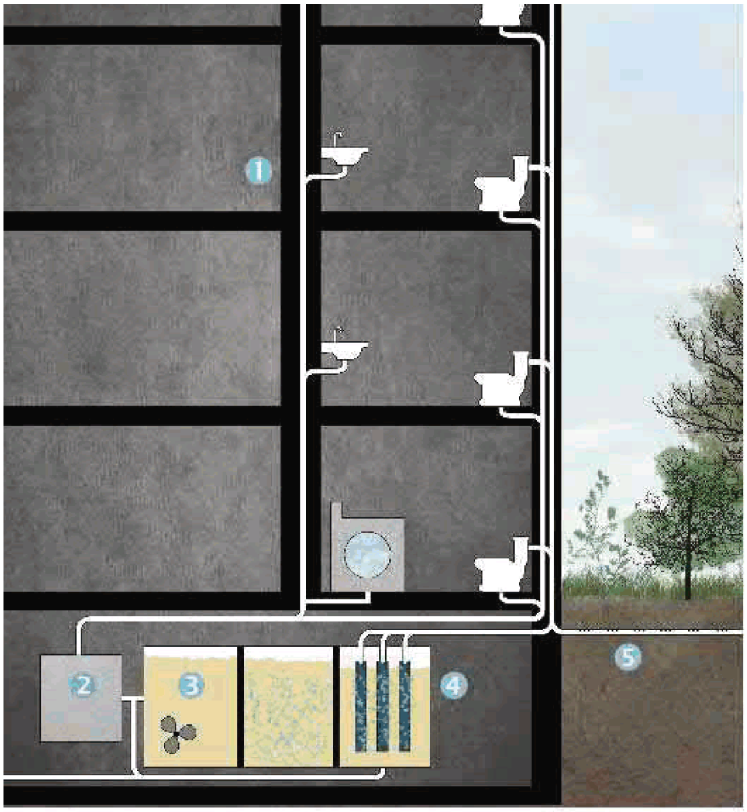


All photos courtesy of Homes for Islanders

MEMBRANE BIOREACTORS

The suspension of wastewater and the organisms used to treat the water in an aerated tank is referred to as an activated sludge process. Membrane bioreactors (MBRs) are packaged activated sludge systems in which the secondary clarifier has been replaced with an ultra-filtration membrane with pores small enough to filter out bacteria, micro-organisms and other insoluble solids. The result is a high-quality effluent without the need for further downstream tertiary treatment systems.

FIGURE 1.4: MEMBRANE BIOREACTORS



System Components

1. Collection System
2. Pretreatment
3. Aeration
4. Membrane
5. Distribution System

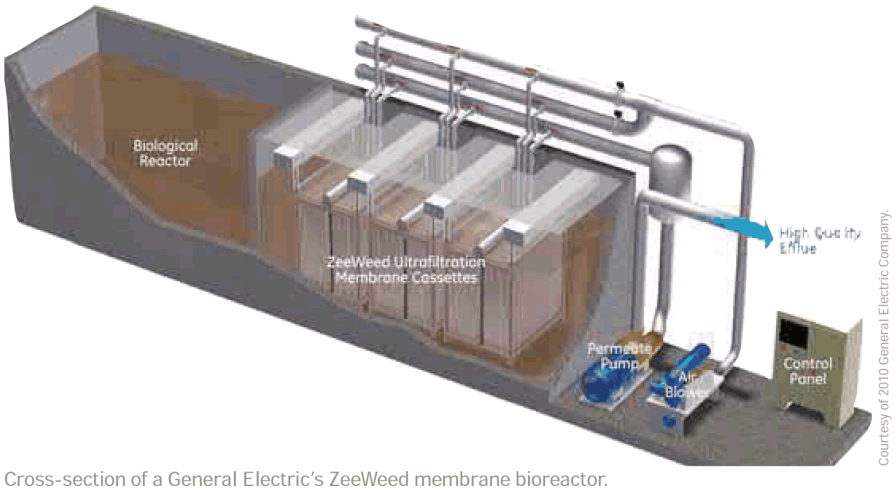
System Components

Pretreatment and Aeration Containers
Processing tank containers typically include a primary separation chamber for pretreatment/settling and an aeration chamber. Aeration chambers are sized to provide sufficient volume for contact with the microbial biomass. Some small- to medium-sized systems do not require a separate pretreatment tank. Fine screens, typically 1-3 mm, are located in the containers after primary settling and before the membranes to prevent clogging.

Membrane
MBR membranes are porous and typically consist of cellulose or other polymer materials. Membranes are configured as hollow fibers grouped in bundles or as flat plates, and are designed to be easily removed for servicing and replacement. Pumps are used to force wastewater through the membrane.

Technology

MBRs are activated sludge systems with fine filters to prevent solids release, allowing these systems to maintain a higher concentration of bacteria as compared to conventional activated sludge systems. MBRs are capable of producing high-quality effluent similar to secondary clarification and microfiltration. The ability to eliminate secondary clarification has a number of benefits, such as shorter hydraulic retention times, less sludge production, simultaneous nitrification and denitrification, low effluent concentrations and comparatively smaller footprint than other conventional treatment technologies.



Cross-section of a General Electric's ZeeWeed membrane bioreactor.

The process consists of conventional extended aeration activated sludge process where the secondary clarifier has been replaced by an ultra-filtration membrane. The membrane pores are typically 0.1 to 0.5 microns in size to inhibit bacteria, micro-orgasms and other insoluble solids from passing through. This eliminates the need for downstream clarification and filtration. The pore size is not a complete barrier to viruses, however, so disinfection is still required.

Advantages/Disadvantages

Advantages of MBRs include high effluent quality, small space requirements and ease of automation. The primary disadvantages of MBR processes are the high cost of membranes, high energy demand, solids management and the potential for membrane fouling. Membrane manufacturers use several techniques to prevent fouling, including coarse air scrubbing and chemical treatment.

Because of their small footprint in comparison with other distributed technologies, MBRs have been used in urban areas as an alternative to discharge wastewater into the traditional sewage system. Their ability to produce high-quality effluent makes them suitable for applications where the treated water will be reused on-site. However, projects pursuing high performance energy use reductions may find that MBRs are not a feasible strategy due to their high energy demand.

Costs

Initial capital costs as well as ongoing operations and maintenance costs for MBR systems are typically much higher than for other wastewater treatment options. Installed costs can range from $7-$20 per gallon treated.[26] The expected life of a membrane is typically only seven to eight years, and may be considerably shorter depending on the propensity of the wastewater to produce fouling conditions.

MBRs require greater operator attention as compared with other decentralized treatment options, in addition to their considerably higher energy costs. Where these systems are used to treat water for reuse applications within buildings or at the community scale, their lifecycle costs may be offset by the reduction in potable water.

26 US EPA. Wastewater Management Fact Sheet. Membrane Bioreactors. 2007.

OREGON HEALTH AND SCIENCE UNIVERSITY CENTER FOR HEALTH AND HEALING

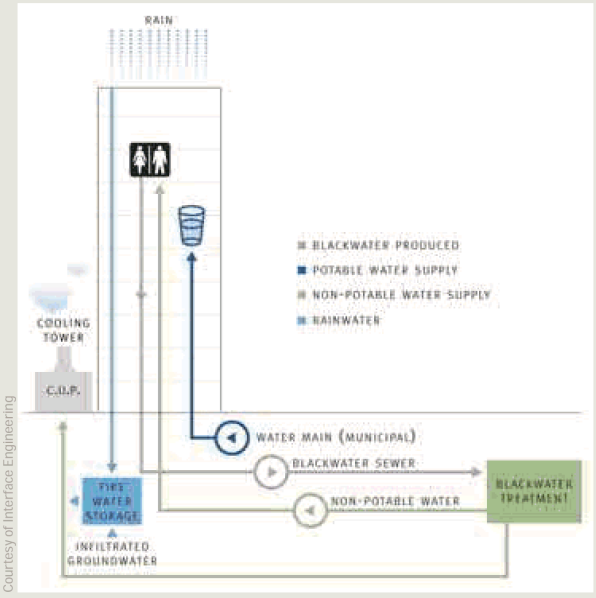
Date Completed: 2006
Location: Portland, OR
Owner: RIMCO LLC
Project Type: Commercial / Office
Project Size: 396,000-sf
Site Area: 20 blocks
Capacity: 35,000 gpd / 1600 average daily users
System Selected: Enviroquip, Inc Membrane Bioreactor

OHSU treats 100% of its building wastewater to nearly Class 4 standards. The reclaimed water is combined with rainwater for use in toilets, cooling towers and landscaping, reducing potable water use by almost 60% compared to a similarly sized conventional building. Approximately 15,000 gpd of excess reclaimed water is discharged to the Willamette River.

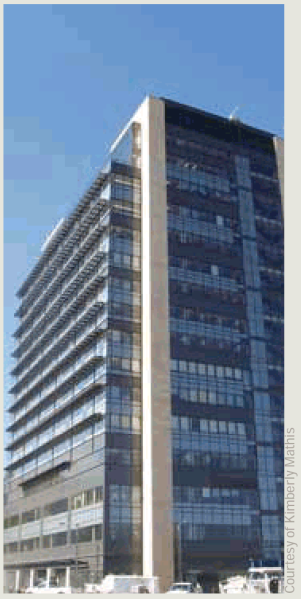


Courtesy of Walker Macy

The OHSU rooftop garden is irrigated by recycled greywater.



Courtesy of Interface Engineering



Courtesy of Kimberly Mathis

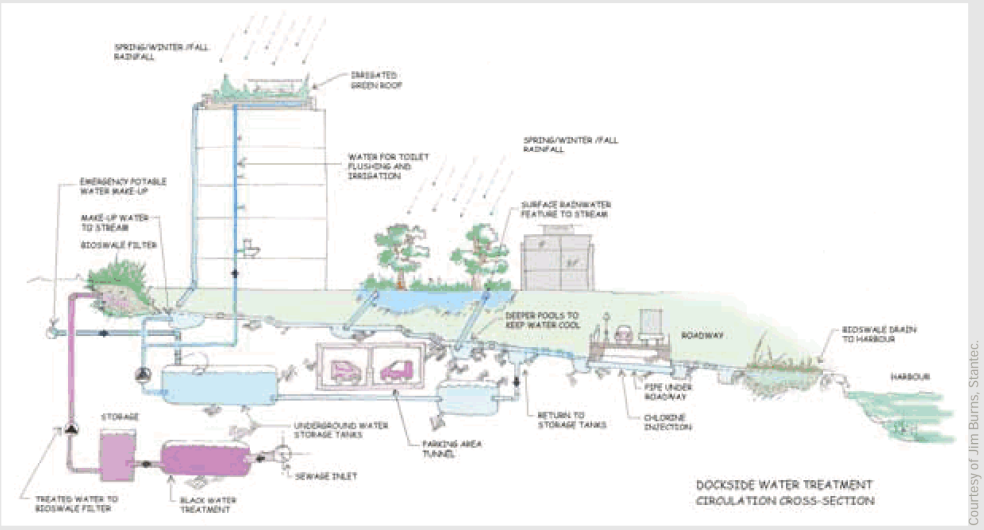
DOCKSIDE GREEN DEVELOPMENT

Date Completed: 2010 (first two phases)
Location: Victoria, B.C., Canada
Owner: Windmill West Development
Project Type: Mixed-Use
Project Size: 1.3 million-sf
Site Area: 16 acre
Capacity: 50,000 gpd
System Selected: GE ZeeWeed Z-Mod Membrane bioreactor

Water-saving fixtures and reuse of greywater reduce the development's municipal water needs by about 65%. An MBR system treats greywater , which is reused for landscape irrigation and toilet flushing. The development is able to sell an additional 18,000 gallons of treated water to nearby industrial users.



Courtesy of Dockside Green Development.



Courtesy of Jim Burns, Stantec.



PART 2

Life-Cycle Analysis

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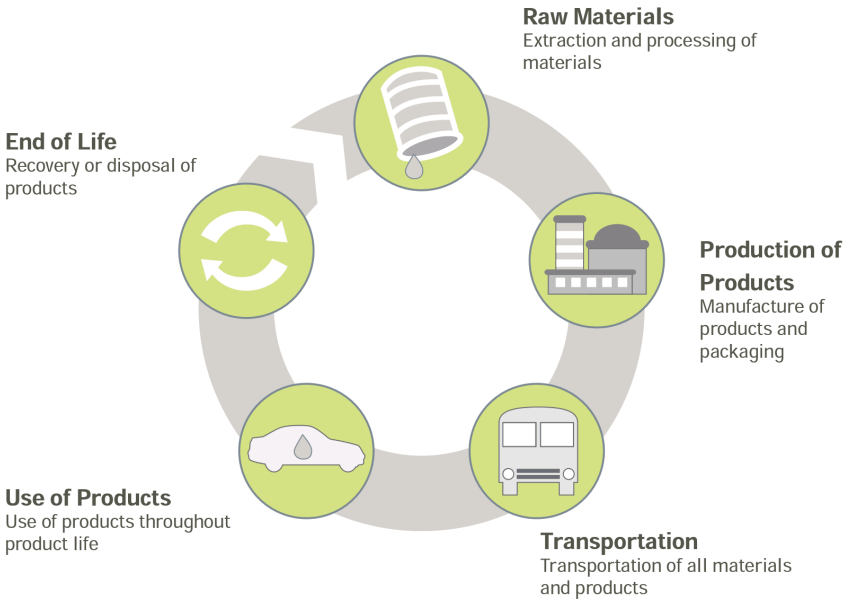
2.1 INTRODUCTION

Life-cycle assessment (LCA) is a tool that evaluates the environmental impacts of a product across its entire life-cycle from materials acquisition to manufacturing, the use of the products, and its final disposal, as shown in Figure 2.1. LCA is performed by first identifying and quantifying the natural resources, energy and materials used, and the wastes and emissions released to the environment. Then their associated impacts to human health and the environment over a variety of impact categories are assessed.

FIGURE 2.1: LIFE-CYCLE STAGES



As defined by International Standards Organization (ISO) standard 14040, life-cycle assessment includes the following four components:

- Goal development and scoping
- Life-cycle inventory (LCI)
- Impact analysis
- Improvement analysis

The assessment begins with the establishment of goals and the definition of considered boundaries. Next, during the life-cycle inventory phase, a catalog of all input/output data for every unit process in the production chain is compiled; energy consumption, chemical use, water requirements, air emissions, solid waste and wastewater are characterized and quantified using algorithms specific to key reporting metrics. In the proceeding step, potential environmental impacts are calculated based on the LCI data during the impact assessment phase. Finally, during the valuation phase, a weighting system can be applied to the environmental and human health impacts to reflect the values of stakeholders.

LCAs can be performed on a single product system to identify and prioritize efforts to improve a product, or can be used to perform comparative assessments of functionally similar products to determine the relative merits of each alternative. LCAs performed on a product life-cycle — from extraction through manufacturing — are termed "cradle-to-gate," while "cradle-to grave" LCAs consider the impacts of the entire products system.

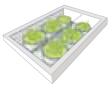
SCOPE

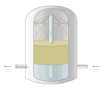
To determine the impacts and potential benefits of decentralized wastewater treatment systems, an LCA was conducted on a centralized treatment facility and a set of alternative distributed treatment options. Included in the analysis were the treatment technologies or set of technologies used to achieve an advanced secondary level of treatment, as well as the necessary conveyance systems for collecting wastewater from its point of generation to its point of treatment. Results of the LCA indicate whether the construction and use of alternative wastewater treatment systems will result in an improvement over traditional practices for conveyance and treatment systems, and whether those benefits are likely to be significant over the system's life-cycle.

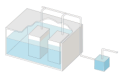
To facilitate the analysis, individual life-cycle scenarios were constructed based on the current treatment system for a mid-sized City in the Puget Sound region[27]. The actual existing conveyance and treatment systems for the City served as a baseline for the analysis. Scenarios for four different distributed treatment strategies were then constructed using the topography and geographical layout of the City as a template.

Decentralized technologies assessed in this report include:


Composting toilets


Constructed wetlands


Recirculating biofilter

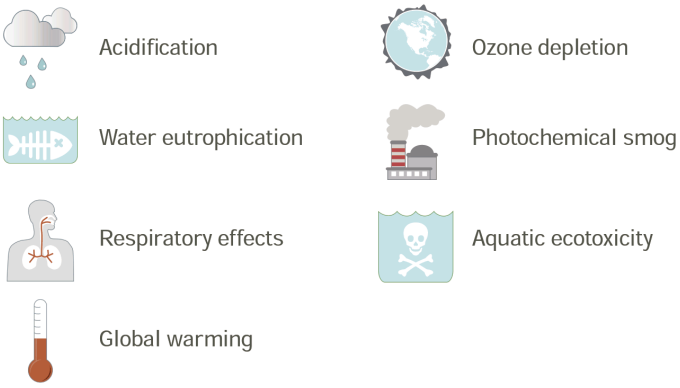

Membrane bioreactor

FUNCTIONAL UNIT

The functional unit describes the parameters that adequately define and quantify the critical function and performance of the product or system under evaluation. This unit serves as the basis by which all alternatives will be compared. The functional unit for each scenario in this study is defined as a system that provides the ability to treat the annual wastewater generated by a population of 83,000 customers over a 50-year time span. The functional unit establishes a fair basis of comparison between the centralized system and each of the distributed treatment systems. Since the treatment capacity of each of the distributed systems varies widely, each scenario required multiple treatment sites to service the required population. A conveyance system for each treatment technology suitable to collect the required amount of wastewater was included. Specific parameters for each of the scenarios are presented in the sections below. A 50-year time span was selected to match the estimated life span of a typical centralized treatment facility.

27 With respect to the City that provided valuable data to support this study, and in order to draw conclusions from the results of this study that apply broadly to a range of other communities throughout Puget Sound, the actual City selected for the baseline evaluation will remain anonymous.

A cradle-to-use analysis was conducted, comparing the environmental impacts of the various treatment systems in each of the following key impact categories:

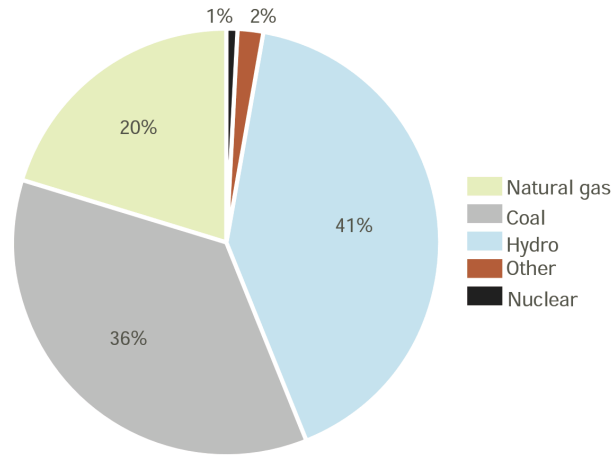


Descriptions of each of the impact categories, including the methods of calculation and the use of equivalencies where applicable, are presented in Appendix C.

DATA SOURCES

In support of the LCA, material breakdowns and key design factors were collected from manufacturers of primary components of both central and distributed treatment systems. Primary inventory data collected from previous evaluations were scaled and used to characterize key processes such as blow molding, metal fabrication and excavation. Secondary data were used to represent all upstream materials extraction and processing responsible for producing the raw materials used for the manufacture of individual treatment and conveyance components, as well as for the PSE energy production grid as shown in Figure 2.2. Sources of life-cycle data include both the GaBi Professional and EcoInvent life-cycle databases.

FIGURE 2.2: PSE POWER GRID, 2008



Methodology

GaBi version 4.3, a life-cycle design toolkit, was used to model the product life-cycles of both the conventional centralized treatment and conveyance systems, as well as each of the distributed treatment scenarios. The toolkit was used to construct models of each of the individual components of the treatment and conveyance systems, which were then combined into a master flow diagram for each system. The Life-Cycle Inventory Analysis for this study covered each of the life-cycle stages as shown in Figure 2.3.

FIGURE 2.3: LIFE-CYCLE INVENTORY ANALYSIS



Materials

Includes raw materials extraction processes for all materials and chemicals in treatment systems

Production

Limited production data for individual components were included for key system and conveyance components. No assembly processes were included.

Transport

Transport of all materials and construction wastes to and from the site of treatment. Average transport profile for US is assumed.

Use

Included replacement of individual treatment components, as well as the energy and materials consumed over the 50-year timeframe.

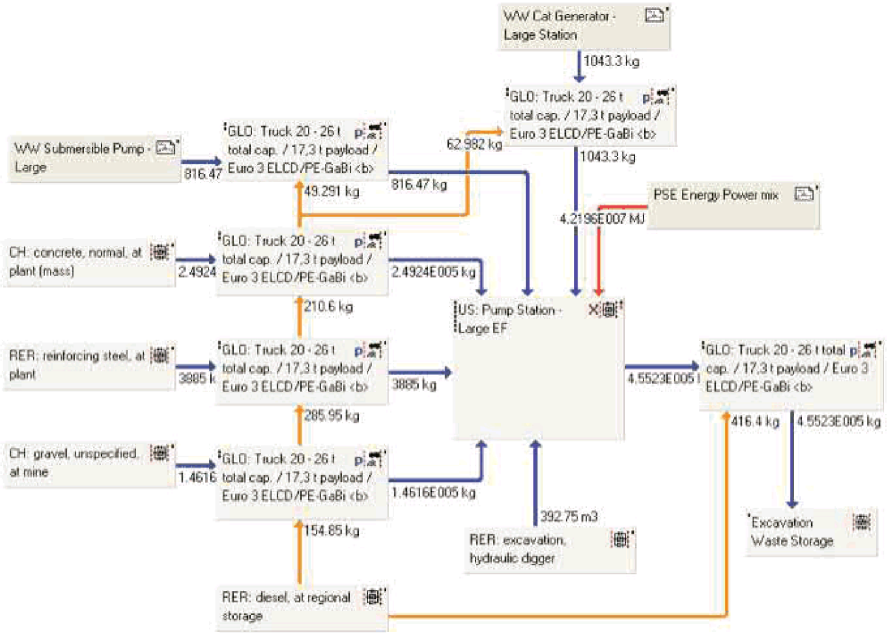
End-of-life

Construction wastes to storage or landfill as appropriate. No other impacts from end-of-life are accounted for in analysis.

LIFE CYCLE INVENTORY ANALYSIS

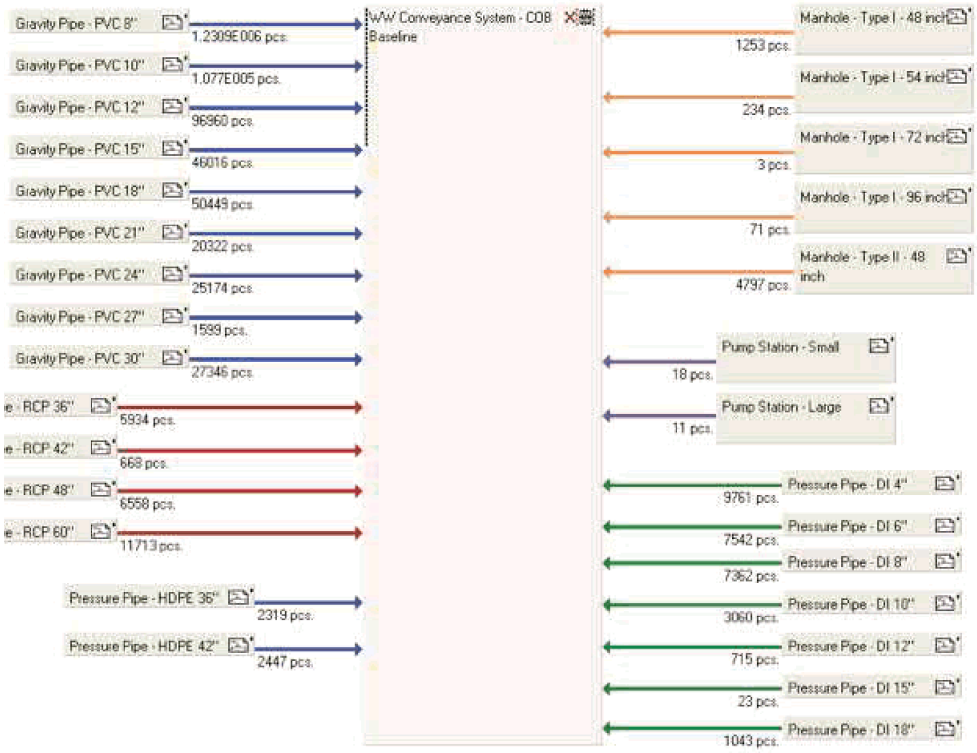
The example diagrams below demonstrate how the GaBi toolkit was used to construct and evaluate each of the scenarios in this study. Each treatment and conveyance system is comprised of components which were individually modeled. Figure 2.4 shows an example of the GaBi model diagram for one component, a large pump station. The model accounts for the production of each of the materials in the pump station (e.g. concrete, steel), as well as the support processes such as transportation and excavation activities required during construction of the station. In addition, the energy consumed during operation of the pump station over the 50-year lifespan of the evaluation was also included. In the model, processes are depicted by gray boxes in the diagram and are labeled for easy identification. Behind each process and flow indicated on the diagrams exists a set of data representing all of the materials, energy, solid waste and emissions generated or consumed by the process, typically normalized to one unit of production (e.g., per kg steel).

FIGURE 2.4: GABI MODEL OF LARGE PUMP STATION



A master diagram was then assembled for each treatment and conveyance system by connecting the individual components and scaling each appropriately. Figure 2.5 depicts the GaBi master flow diagram for the baseline conveyance scenario. The quantity of each flow was determined through an estimate of the Bill of Materials (BOM) and the accumulated material mass for each scenario.

FIGURE 2.5: GABI MASTER FLOW DIAGRAM FOR THE BASELINE CONVEYANCE SYSTEM



2.2 CONVEYANCE ANALYSIS

The conveyance analysis only evaluates the life cycling impacts of the system used to convey wastewater from its point of generation to its point of treatment (including pipe, manholes and pump stations). Life cycle impacts related to the wastewater treatment process is specifically excluded from this portion of the analysis. See Section 2.3 for treatment system LCA and results.

BASELINE SCENARIO

The City chosen for this study is located in the northeast portion of the Puget Sound. The population within City limits was approximately 67,000 in the 2000 census. The City's existing sanitary sewer service area covers over 30 square miles including both the City and the urban growth areas, servicing approximately 83,000 customers. Over 98% of the sanitary sewer conveyance system is operated via gravity flow, with the remainder conveyed via 29 pump stations located throughout the City to lift the sewage over hills and along the bay. Many of the pump stations have fewer than 1,000 linear feet of pressurized conveyance before returning to gravity flow.

Table 2.1 shows the size and length of the gravity and pressure conveyance lines within the City's system.

Both gravity and pressure lines are made of a variety of materials including asbestos cement (AC), cast iron (CI), cast in place pipe (CIPP), concrete (CON), ductile iron (DI), high-density polyethylene (HDPE), and polyvinyl chloride (PVC).

Normalizing to Current Conditions

While existing data on the City's conveyance system was utilized, parts of this system were installed over 60 years ago and do not represent current standards for construction. Some normalization of the system was done in order to assess how a similar system would be built today. The following assumptions were made:

- Portions of the existing gravity system include some older clay pipes (VIT), and some of unknown composition (UNK). If this system were to be built today, the materials of choice would most likely be PVC and reinforced concrete pipe (RCP) for gravity conveyance, and DI and HDPE for pressure mains. These four pipe types were used in the analysis.
- The 4" and 6" diameter pipes in the gravity system are assumed to be a minimum of 8".
- The lengths of 14", 16", 20", 23", and 28" pipes have been added to the next larger respective pipe diameter, to account for current typical pipe sizes.

TABLE 2.1: TOTAL LENGTH OF PIPE BY SIZE

DIAMETER (IN)	GRAVITY PIPE (FT)	PRESSURE PIPE (FT)
4	295	9,761
6	20,435	7,542
8	1,210,209	7,362
10	107,702	3,060
12	96,960	715
14	2,022	-
15	43,994	23
16	997	-
18	49,453	1,043
20	10,666	-
21	9,655	-
23	528	-
24	24,646	-
27	1,599	-
28	8,474	-
30	18,873	-
36	5,934	2,319
42	668	2,447
48	6,558	-
60	11,713	-
TOTAL (ft)	1,631,380	34,272
TOTAL (mi)	308.97	6.49







Courtesy of Hancor



Baseline Bill of Materials Summary

Table 2.2 summarizes the quantified materials used in the baseline conveyance scenario and includes excavation, bedding, backfill volumes and total pipe material weights for the entire pipe network. A full Bill of Materials for the Baseline Conveyance System, including manholes, pump stations and equipment hours is located in Appendix A.

TABLE 2.2: SUMMARY BILL OF MATERIALS FOR BASELINE CONVEYANCE

	EXCAVATION	PEA GRAVEL BEDDING	BACKFILL	RCP MATERIAL	PVC MATERIAL	DI MATERIAL	HDPE MATERIAL
Gravity Pipe	1,101,345	311,603	987,480	14,214	6,006	-	-
Pressure Pipe	24,426	8,769	18,474	-	-	276	278
TOTAL WEIGHT (tons)	1,125,771	320,373	1,005,954	14,214	6,006	276	278

The bill of materials summary includes a total of 6,357 manholes of various sizes located throughout the City. This count has been prorated for each pipe size based on length. Table 2.3 provides a breakdown on the excavation, backfill and concrete weights for all of the manholes.

TABLE 2.3: MANHOLE SUMMARY

	EXCAVATION	BACKFILL	CONCRETE
TOTAL WEIGHT (tons)	88,802	61,568	30,192

Pump Stations

The capacities of the 29 pump stations throughout the City range from 0.12-76 million gallons per day (MGD). For the purposes of this study, each of the 29 stations are classified as either a "small" or "large" pump station.

Eighteen of the 29 pump stations fall into the "small" category, handling less than 0.75 MGD and characterized as having:

- Two 96" diameter wet wells
- Two 25 hp pumps (assume typical submersible Myers pump)
- Control panels with communication capabilities
- No building

Eleven of the City's pump stations handle in excess of 0.75 MGD. These large pump stations are more complex and have more specialized designs unique to each. For the purposes of this study, they have been assumed to include:

- A large wet well
- A dry well
- Three pumps
- Controls
- A backup generator
- A building
- An access road with parking



Table 2.4 summarizes the excavation, backfill, concrete and steel material weights for both small and large pump stations, as well as annual energy demand.

TABLE 2.4: TYPICAL PUMP STATION MATERIAL AND ENERGY USE SUMMARY

	EXCAVATION	BACKFILL	CONCRETE	STEEL	ANNUAL ENERGY DEMAND (KW-HRS)
Small Pump Stations (tons)	506	456	168	-	8,965
Large Pump Stations (tons)	5,520	1,772	3,022	47	234,424
TOTAL WEIGHT (tons)	6,026	2,229	3,190	47	

Items not included in the pump station bill of materials include valves, process piping within the pump station, rails, fittings, controls, furniture, floats, wiring and other small items.

Equipment Hours

Equipment hours were calculated assuming a 50-hour time requirement to lay 1,000 feet of 8" diameter sanitary sewer main; these hours include manhole installations. All equipment is powered with 100 HP engines. Equipment hours for the various pipe diameters were prorated based on the excavation volumes in the tables above. Table 2.5 below includes total equipment hours for both gravity and pressure pipe.

TABLE 2.5: BASELINE CONVEYANCE EQUIPMENT HOURS

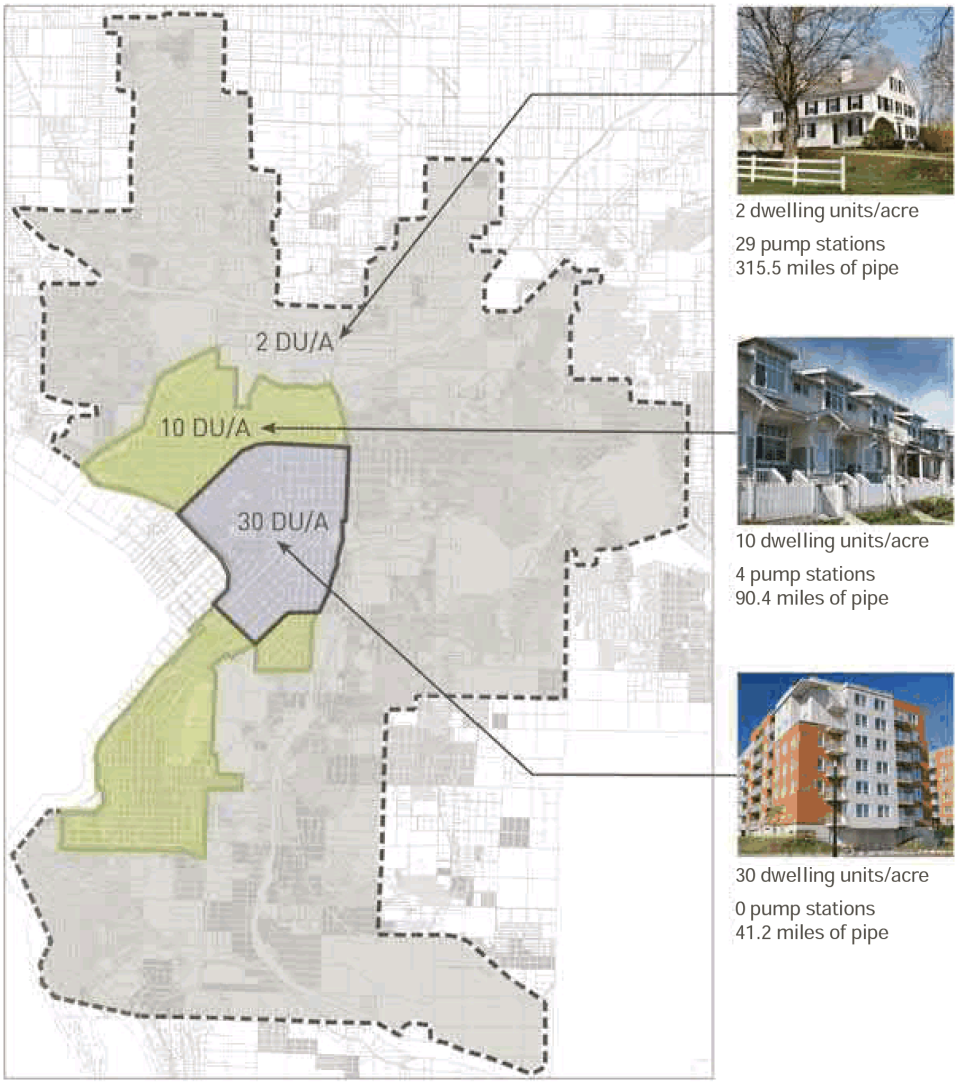
	GRAVITY PIPE	PRESSURE PIPE
Baseline Conveyance	153,571	2,242

ALTERNATIVE DENSITY SCENARIOS

In order to evaluate the results of the conveyance study to a broader range of scales of typical development or communities, two alternative density scenarios were assessed. Density scenarios were calculated by assuming the same population—67,000 residents—located within a smaller service area as shown in Figure 2.6.

Baseline City (Baseline): > 2 dwelling units/acre
Density Scenario 1 (DS1): 10 dwelling units/acre
Density Scenario 2 (DS2): 30 dwelling units/acre

FIGURE 2.6: DENSITY SCENARIOS



Alternative Scenarios Bill of Materials

The bill of materials for DS1 and DS2 are calculated based on the topography and customer base of the baseline City. The annual average flow of 12.5 million gallons per day from 83,000 customers in the baseline City was prorated over each of the smaller areas for both alternative density scenarios. Based on these assumptions, a summary of the quantified materials including excavation, bedding, backfill volumes and total pipe material weights for each alternative conveyance system is shown in Tables 2.6 and 2.7 below.

TABLE 2.6: SUMMARY BILL OF MATERIALS FOR CONVEYANCE IN ALTERNATIVE DENSITY SCENARIOS

	EXCAVATION (TONS)	PEA GRAVEL BEDDING (TONS)	BACKFILL (TONS)	RCP MATERIAL (TONS)	PVC MATERIAL (TONS)	DI MATERIAL (TONS)	HDPE MATERIAL (TONS)
Density Scenario 1	450,156	135,183	385,693	9,925	2,386	31	277
Density Scenario 2	197,595	58,832	173,495	2,576	1,090	-	-

TABLE 2.7: MANHOLE SUMMARY FOR ALTERNATIVE DENSITY SCENARIOS

	EXCAVATION	BACKFILL	CONCRETE
TOTAL WEIGHT (tons)	25,546	17,635	8,610

Density Scenario 1 assumes one small pump station and three large pump stations to convey wastewater to its point of treatment. Materials and energy use from the baseline pump stations in Table 2.4 was used and scaled down to reflect fewer overall stations. Density Scenario 2 is entirely gravity-fed, and therefore includes no pump stations or pressure piping.

Equipment hours for DS1 and DS2 were calculated assuming the same 50-hour time requirement to lay 1,000 feet of 8" Ø sanitary sewer main as used in the baseline scenario. Table 2.8 provides a summary of equipment hours for both gravity and pressure pipe.

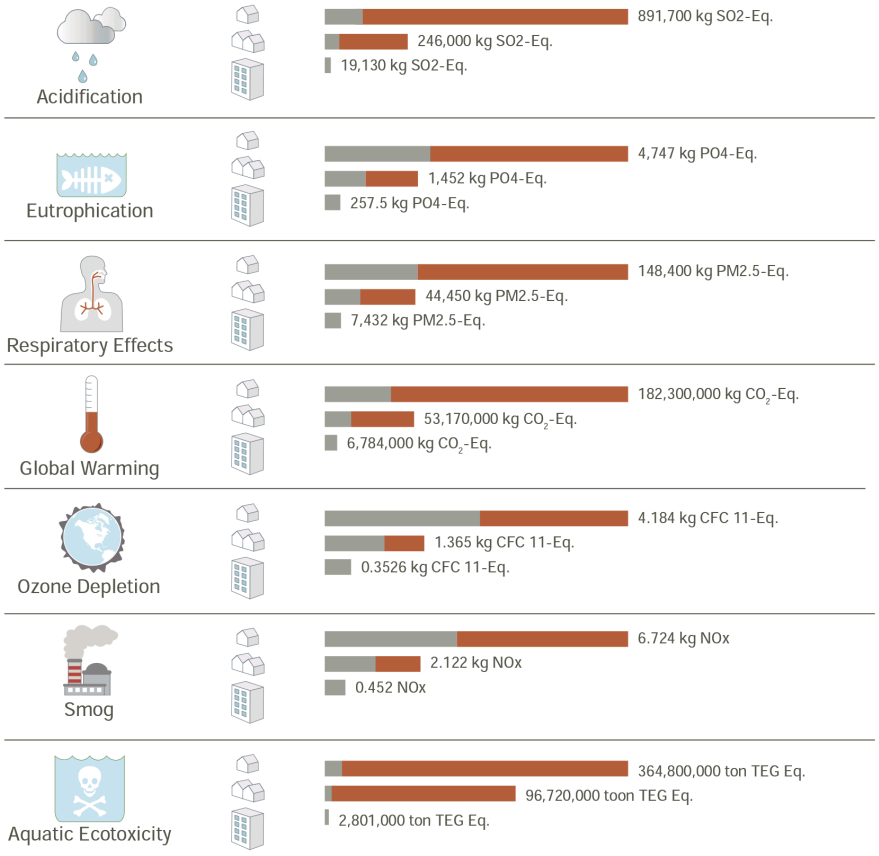
TABLE 2.8: ALTERNATIVE DENSITY SCENARIO EQUIPMENT HOURS

	GRAVITY PIPE	PRESSURE PIPE
DS1	30,732	290
DS2	10,889	-

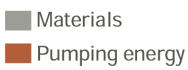
RESULTS

Results of the life-cycle analysis of the conveyance portion of the baseline City's wastewater piping network compared to alternative Density Scenarios 1 and 2 are presented in Table 2.9.

TABLE 2.9: OVERALL LIFE-CYCLE IMPACTS OF CONVEYANCE SYSTEM



Note: Cannot compare across categories. Each row in the table above represents the percent decrease of negative impacts for alternative density scenarios in comparison to the baseline conveyance system.

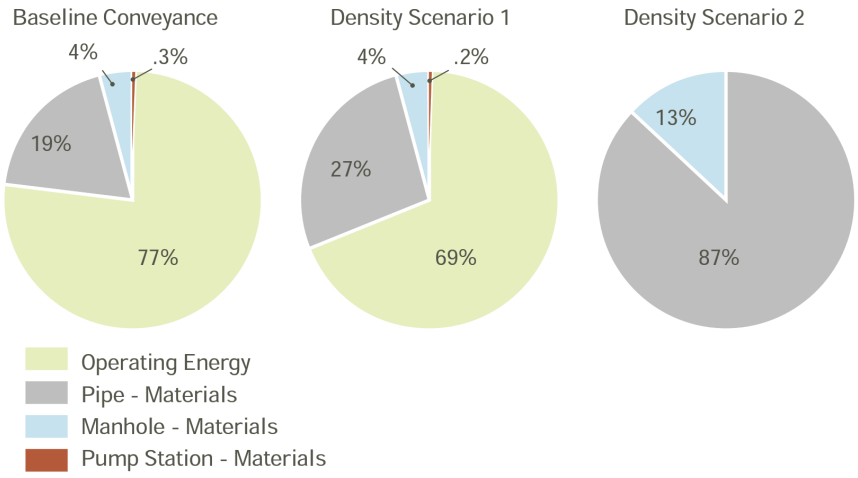




Impacts of the baseline conveyance scenario are higher than both alternative density scenarios across all categories. Impacts associated with Density Scenario 1 are roughly one-third to one-quarter those of the baseline, ranging from a minimum of 67% reduction in the ozone depletion category and up to 72% reduction in aquatic acidification. Density Scenario 2 represents an even greater reduction in impacts compared to the baseline, with results showing between 91%-97% reductions across all categories.

As shown in Figure 2.7, operating energy contributes to the majority of the impacts in the baseline and DS1. Since DS2 is assumed to be an entirely gravity-fed system, 100% of the impacts are associated with materials including excavation, construction impacts and transportation of materials and waste to and from the site. These results show that shorter distances of larger diameter gravity-fed pipes have fewer overall environmental impacts than longer distances of smaller diameter pipe which require energy for conveyance. Conclusions can be drawn to indicate that smaller, more compact development patterns and shorter, gravity-fed conveyance systems for wastewater treatment have less of an environmental impact than the conveyance needed for more sprawling development patterns.

FIGURE 2.7: GLOBAL WARMING IMPACT DRIVERS FOR EACH CONVEYANCE SCENARIO



The impacts associated with materials in each chart above include those from the pipe material, manholes, and pump stations. Of the various pipe types, PVC contributes the largest share of the impacts by far, with RCP making smaller but non-negligible contributions.

Impacts associated with excavation include operation of equipment and transportation of removed waste offsite. Results indicate that the impacts due to excavation activities are relatively low compared to the contributions from other life-cycle stages, with the greatest influence in the respiratory effects category due to particulate matter. These impacts peaked at a little over 14% for the DS2 Scenario. Results in this density scenario were higher in large part due to the larger pipe sizes, the reduced amount of pipe (resulting in less impacts from other material and transportation) and the increased impacts from hauling the waste.

Impacts of Conveyance Per Mile

The impacts of conveyance per mile is determined by dividing the overall impacts by the total distance in miles of conveyance for each scenario as shown in Table 2.10.

When looking at the results of the impacts of conveyance on a per-mile basis, DS2 represents a substantial decrease in impacts across all categories. However, DS1 shows either only a small decrease as is the case with acidification, or a small increase as is the case in all other categories. This is explained by the efficiencies of scale for the baseline conveyance scenario. In this case, the overall impacts are averaged out over a longer distance of pipe. Likewise, while DS1 has fewer overall impacts compared to the baseline density, because it is averaged over a shorter distance of pipe the impacts per mile are roughly equal or slightly higher.

Conclusions can be drawn in cautioning decision-makers in looking at impacts on a per-mile basis rather than as absolute values when comparing across scenarios. The per-mile evaluation may be more informative in assessing efficiencies of scale when either the overall impacts or the distance in pipe is held constant.

Full results from the conveyance analysis are listed in Appendix B.

TABLE 2.10: NORMALIZED LIFE-CYCLE IMPACTS PER MILE OF CONVEYANCE

		BASELINE	DS1		DS2	
IMPACT CATEGORIES				% Difference		% Difference
Acidification	kg SO2-Eq.	2,826	2,745	-2.9%	463.9	-83.6%
Eutrophication	kg PO4-Eq.	15.05	16.07	6.8%	6.24	-58.5%
Respiratory Effects	kg PM2.5-Eq.	470.5	492.0	4.6%	180.2	-61.7%
Global Warming Air	kg CO_2-Eq.	578,000	588,500	1.8%	164,500	-71.5%
Ozone Depletion Air	kg CFC 11-Eq.	0.01327	.01511	13.8%	0.008549	-35.6%
Smog Air	kg NOx-Eq.	0.02132	0.02348	10.2%	0.01095	-48.6%
Aquatic Ecotoxicity	ton TEG Eq.	1,156,000	1,070,000	-7.4%	67,990	-94.1%

2.3 TREATMENT SYSTEM ANALYSIS

BASELINE SCENARIO: CENTRALIZED WASTEWATER TREATMENT

A conventional, centralized wastewater treatment plant was used as the baseline against which the environmental impacts of alternative decentralized treatment strategies were evaluated. The centralized treatment plant evaluated in this study is based on a mid-sized City in the Puget Sound region serving approximately 83,000 customers. The plant's average daily flow is approximately 12.5 million gallons per day (MGD). For the purposes of this study, only components associated with the treatment mechanisms of the plant were evaluated, including components used for odor control, primary screening, primary clarification, secondary treatment and sludge dewatering. Figure 2.8 shows all components inventoried for analysis. Disinfection and solids management, while key components of wastewater treatment processes, were not inventoried in either the baseline or the alternative scenarios. Management of solids was assumed to be similar in scope and scale for all treatment scenarios, allowing it to be excluded for the purposes of this LCA comparison.

Baseline System Summary

Wastewater entering the baseline centralized treatment facility first passes through two concrete carbon beds for odor removal. Wastewater effluent then undergoes primary treatment, beginning with bar screens to separate larger objects, followed by grit removal consisting of three mechanically reciprocating rake steel bar screens, each approximately six feet wide. Two eight-foot wide manually raked aluminum bar screens further screen the water.

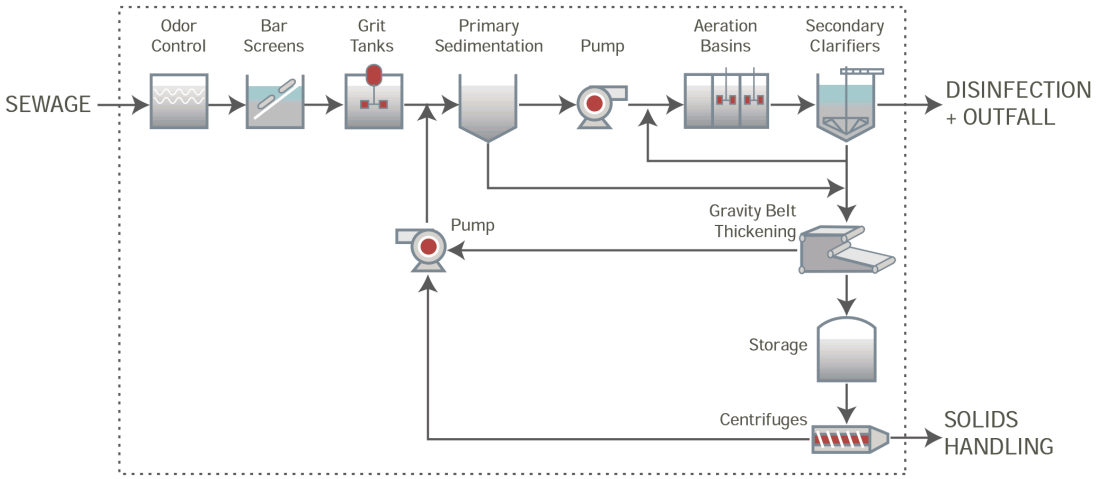
Septage pumps transport the screened water into two 30-foot diameter grit chambers. The resulting grit is classified and partially dewatered in two grit cyclones and two screw conveyors. A grit washdown sump pump and cast iron blowers are also used in the primary treatment system. All removed materials are de-watered in two screen presses; these dewatered materials are then stored and disposed off-site.

Primary clarification is accomplished in two 120-foot diameter clarifiers. Two sludge pumps and one scum pump remove the solid materials from the clarifiers, which are dewatered in two gravity belt thickeners. The clarified effluent is then transported to the secondary treatment system through four primary pumps.

The first part of the secondary treatment employs a high purity oxygen (HPO) activated sludge process, which occurs in two basins, each with three equally sized stages. In each stage of the HPO process the water is either mixed by impellors or oxygenated with aerators.

The basin effluent then enters three secondary 120-foot diameter clarifiers. A portion of the effluent and slurries are recirculated through the HPO basins by two pumps. Two scum pumps transfer slurries to two gravity belt thickeners for dewatering. The thickeners dewater slurries from both the primary and secondary clarifiers before the resulting sludge is stored in two concrete structures. The sludge is then dewatered by two centrifuges and removed by two sludge cake pumps. The plant also uses a polymer system to flocculate suspended solids remaining in the secondary clarifier. Two thickening blowers remove odors associated with the dewatering process.

FIGURE 2.8: BASELINE CENTRALIZED TREATMENT PLANT COMPONENTS



The dotted line shows the boundaries of analysis for the baseline, centralized treatment facility. Disinfection and solids handling components are excluded from the analysis.

Assumptions

An engineering analysis accounted for 100% of the materials in the baseline centralized treatment facility. Approximately 60% of all major components were inventoried based on a site visit to the facility and data provided by the city. The remaining 40% of materials —including concrete conduits, utilidors and on-site buildings — were calculated based on profiles consistent with the characterized materials (primarily concrete and steel). Table 2.11 provides a summary of inventoried materials, with a full bill of materials in Table A.18 located in Appendix A.

Additional assumptions:

- Concrete structures are not expected to require replacement in the assumed 50-year plant life span.
- Pumps have an assumed lifespan of 10 years.
- Other equipment such as screens, macerators and blowers have an assumed lifespan of 25 years; the equipment may outlast the expected 25-year lifespan but routine wear and tear will likely require that many of the major components be replaced.

The baseline centralized wastewater treatment plant's annual energy demand is approximately 8,218,821-kilowatt hours (kWhrs). This estimate was obtained from the municipality and includes only those demands associated with the treatment process. Energy demands associated with conveyance of wastewater to the treatment plant are accounted for in the Conveyance Analysis in the previous section of this report.

TABLE 2.11: SUMMARY OF MATERIALS FOR BASELINE CENTRALIZED TREATMENT

COMPONENT	ESTIMATED WEIGHT
Odor Control	
Activated Carbon	56,000 lbs.
Concrete Carbon Bed	129,000 lbs.
Primary Screening	
Steel Bar Screens	5,513 lbs.
Aluminum Bar Screens	13,000 lbs.
Cast Iron Blowers	850 lbs.
Chrome Iron Grit Pumps	1,700 lbs.
Steel	2,700 lbs.
Cast Iron	890 lbs.
Primary Clarification	
Concrete Clarifiers	8,951,826 lbs.
Cast Iron Primary Sludge Pumps	770 lbs.
Cast Iron Primary Scum Pumps	385 lbs.
Secondary Treatment	
Concrete HPO Basins	8,135,880 lbs.
Concrete Secondary Clarifiers	23,980,023 lbs.
Cast Iron Return Activated Sludge Pumps	30,400 lbs.
Steel	110 lbs.
Cast Iron	370 lbs.
Cast Iron Secondary Scum Pumps	770 lbs.
Aluminum	6,944 lbs.
Cast Iron	39,360 lbs.
Dewatering	
Steel Gravity Belt Thickener	15,400 lbs.
Aluminum	160 lbs.
Cast Iron	930 lbs.
Steel Sludge Dewatering Centrifuges	14,100 lbs.
Aluminum Centrifuge Feed Pumps	1,500 lbs.
Steel Scum Macerator	396 lbs.
Steel Scum Concentrator	15,000 lbs.
Polymer System	
Bulk Polymer	14 lbs./day/ton
Submersible Pump Stations	
Steel	1,050 lbs.
Chrome	8,400 lbs.
Cast Iron	1,050 lbs.
Cast Iron In-Plane Station Pumps	5,625 lbs.
Steel Dewatering Station Pump	9,705 lbs.

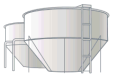
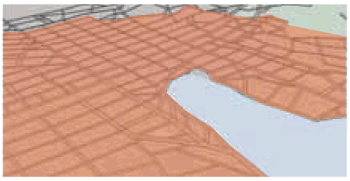
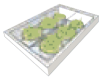
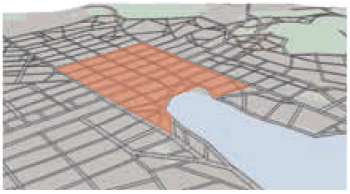
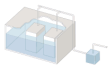
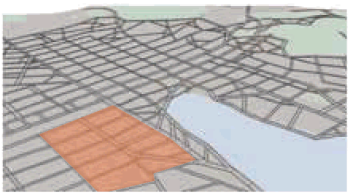
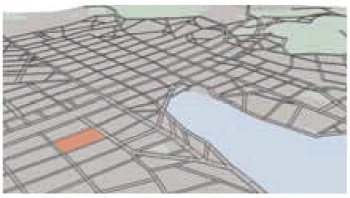
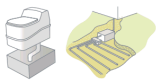
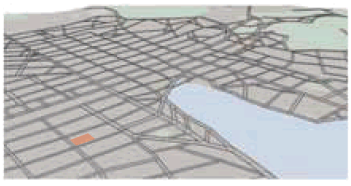
ALTERNATIVE DECENTRALIZED TREATMENT SCENARIOS

Four alternative wastewater treatment strategies were selected in order to compare their overall life cycle environmental impacts to each other as well as against the impacts associated with the baseline centralized treatment system. Each scenario serves 83,000 customers at scales appropriate to the technology employed in each treatment system (see Figure 2.9).

- City scale
  In the baseline scenario, one central treatment facility serves all 83,000 customers.
- District scale
  25 constructed treatment wetlands serve approximately 3,320 customers each.
- Neighborhood scale
  2,500 membrane bioreactor units serve approximately 33 customers each.
- City block scale
  5,000 recirculating biofilter units serve approximately 17 customers each.
- Building scale
  On-site composting toilet and greywater wetland systems serve 1 customer each.

A summary of inventoried materials for conveyance of wastewater in each scenario is located in Tables A.19-A.21 in Appendix A.

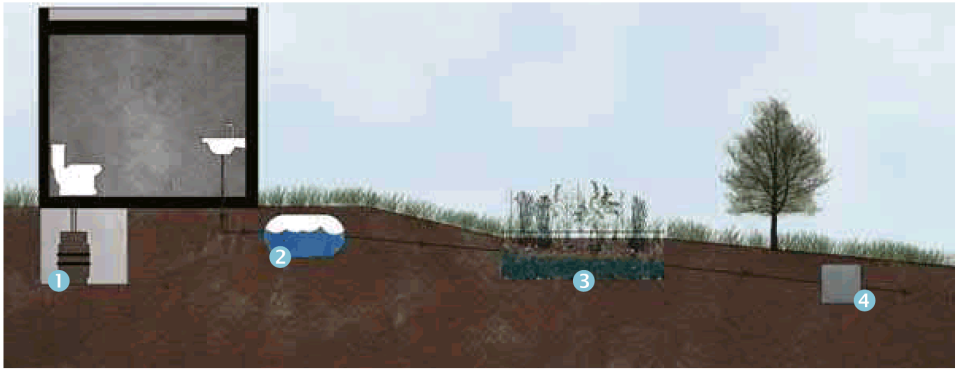
FIGURE 2.9: APPLIED SCALE FOR WASTEWATER TREATMENT

	APPLIED SCALE FOR TREATMENT SYSTEM	# OF TREATMENT SYSTEMS	# OF CUSTOMERS SERVED PER TREATMENT SYSTEM
 Centralized Wastewater Treatment	 City	1	83,000
 Constructed Wetland	 District	25	3,320
 Membrane Bioreactor	 Neighborhood	2,500	33
 Recirculating Biofilter	 Block	5,000	17
 Composting Toilet & Greywater Treatment	 Building	83,000	1

COMPOSTING TOILETS + GREYWATER CONSTRUCTED TREATMENT WETLAND

In this scenario, each customer is served by a composting toilet system coupled with an on-site, gravity-fed constructed treatment wetland and sand filter. The composting system treats liquid and solid wastes from the toilet while the constructed treatment wetland is designed to treat all other wastewater flows including greywater from sinks, showers, laundry machines and dishwashers. The wetland is then followed by a sand filter that polishes the treated water prior to discharge. Figure 2.10 outlines the boundaries of the composting toilet and constructed wetland scenario.

FIGURE 2.10: COMPOSTING TOILET + CONSTRUCTED TREATMENT WETLAND



System Components

1. Composting Toilet Units
2. Primary Tank
3. Treatment Wetland
4. Sand Filter

System Summary and Assumptions

Each customer within the existing wastewater treatment service area is assumed to have one composting unit designed to accommodate 4-8 full time users. Model 201 from the manufacturer Advanced Composting Systems was selected as the typical unit for the purposes of this study. Although the average household does not exceed four people, many commercial customers would potentially require multiple units. In addition, larger units prevent against treatment failure in the event that the units are not adequately maintained. Model 201 was chosen to best address potential variables in customer use. The analysis includes the composting units and all components associated with the composting process but specifically excludes the toilet fixtures themselves, since these are excluded from the baseline and all other alternative scenarios. Material weights and energy demands were supplied by the composting toilet manufacturer.

The composting units are assumed to be placed below grade and housed within a concrete 'basement' structure. Wood shavings are required after every 100 uses. Assuming a household of six and three uses per individual per day, each unit is expected to require 8 lbs. of bulking material added manually to the units on a monthly basis. A small fan is required to ventilate each unit.

Sizing of each constructed wetland to treat all other wastewater was determined by the average capacity of the centralized treatment plant. Based on this average of 12.5 MGD from 83,000 customer connections, the daily average wetland flow is assumed to be approximately 150 GPD/customer (or 12.5 MGD divided by 83,000 customer connections).

An HDPE primary tank was assumed to equalize and store greywater flows prior to entering the HDPE-lined constructed treatment wetland cell. Primary tank effluent is assumed to flow to the constructed treatment wetland via gravity.

The k-C* model (Kadlec and Knight 1996) was used to size the wetland based on the following formula.

$$\text{Area} = \frac{Q \quad \ln\left(\frac{C_i}{C_o}\right)}{K_v h \varepsilon}$$

Where Q= flow, ft^3/day
C_i=influent concentration, mg/l
C_o=effluent concentration, mg/l
k_v= volumetric rate constant, day-1
h= wetland media height, ft
ε= wetland media porosity

Biological oxygen demand (BOD) was used as the sizing nutrient and an influent BOD concentration of 450 mg/l was assumed. This is a conservative assumption, since the wetland is only used for greywater treatment. The wetland media (washed rock) depth and porosity was calculated at 3 ft. and 0.39, respectively. Based on these assumptions, each wetland area is assumed to be 235-ft^2.

Two-inch HDPE laterals evenly distribute the primary effluent over the wetland area. The laterals are covered with approximately 6" of topsoil which aid plant growth and act as a barrier between people and the treatment system.

Lastly, wetland effluent water gravity flows to a slow sand filter for polishing. The HDPE line sand filter was sized assuming a 1.7 gal/ft^2 loading rate with a 3 ft. media depth. These assumptions yielded a 90-ft^2 treatment area for each sand filter. A manifold and 2" HDPE laterals, spaced one foot apart, evenly distribute the wetland effluent over the sand filter.

Table 2.12 summaries the cumulative material weights inventoried for the composting toilet system, constructed wetland and sand filter serving the 83,000 customers. Cumulative annual energy requirements of this scenario are estimated at 3,635,400 kWhr/year.

TABLE 2.12: SUMMARY BILL OF MATERIALS FOR COMPOSTING TOILET SCENARIO

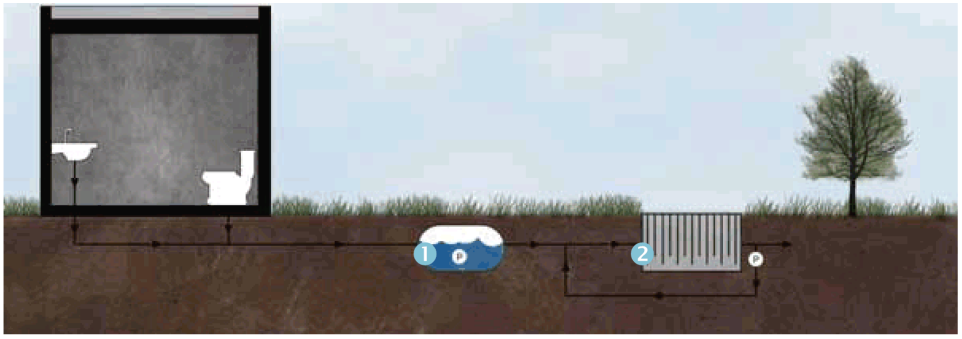
TREATMENT COMPONENT	CUMULATIVE WEIGHT (LBS)
Primary Treatment (primary tank, composting unit, fan)	
Excavation	5,873,089,919
Polyethylene	51,294,000
Polypropylene	581,000
Fiberglass	3,901,000
Nylon	581,000
Aluminum	290,500
Stainless Steel	249,000
Iron	373,500
Acrylonitrile-Butadiene-Styrene	166,000
Poly Vinyl Chloride	249,000
Steel	1,162,000
Wood Shavings (bulking agent)	399,396,000
Secondary Treatment (gravity-fed constructed wetland)	
HDPE	107,553
DR 17 HDPE	17,272,300
Excavation	8,967,735,000
Backfill	4,753,399,000
Rock Infill	4,388,625,000
Topsoil	975,250,000
Post Secondary Treatment (sand filter)	
Excavation	2,016,900,000
HDPE	5,395,000
Sand	2,353,050,000
DR 17 HDPE	5,354,129

RECIRCULATING BIOFILTER

For this scenario, the AdvanTex® Treatment System manufactured by Orenco Systems, Inc.,[28] was selected for analysis. These engineered systems are similar to recirculating sand filters; however, instead of sand, the treatment pods are packed with a textile media. The textile enhances attached growth surfaces, and biological organisms using nutrient-rich wastewater proliferate on the additional surface area, yielding comparatively higher treatment for a defined surface area.

Nozzles uniformly distribute the wastewater at the top of the filter. The wastewater then percolates through the textile media where microorganisms view the nutrients in the water as food. Pumps recirculate the water through the treatment pods several times prior to discharge in order to reach secondary levels of treatment.

FIGURE 2.11: RECIRCULATING BIOFILTER



System Components

1. Primary Tank
2. AdvanTex® Pod

System Summary and Assumptions

In this scenario, AdvanTex® pods are applied at the city block scale and are assumed to be located on each block such that wastewater is conveyed to it by gravity. Each pod treats 2,500 GPD of domestic wastewater. Therefore, approximately 5,000 AdvanTex® treatment pods are required to treat the 12.5 MGD cumulative wastewater flow from the entire service area.

28 Orenco Systems, Inc. www.orenco.com

A dual-compartment fiberglass primary treatment tank precedes each AdvanTex® pod. Water is pumped from the primary tanks to the biofilter where it percolates through engineered polyester fabric media. A second pump is used to recirculate water through the treatment pod approximately three times prior to discharge.

The manufacturer aided in system sizing and estimating weights for the AdvanTex® treatment pods — see Table 2.13 for a summary of materials inventoried. In addition, manufacturer's data was used for calculating this scenario's cumulative annual energy demands of 21,050,000 kWhr/year.

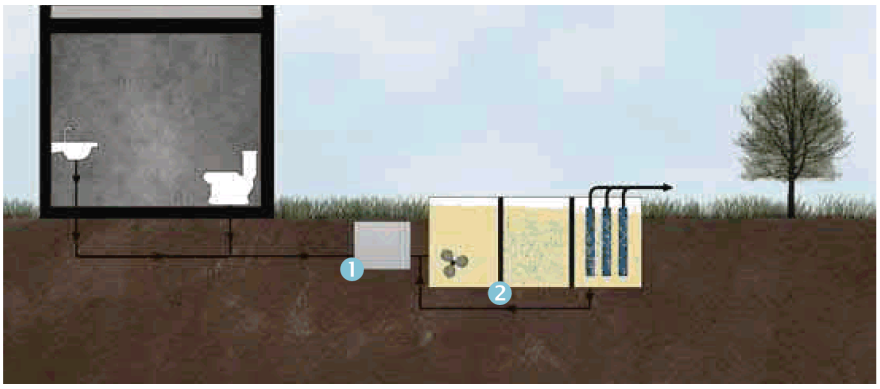
TABLE 2.13. SUMMARY BILL OF MATERIALS FOR RECIRCULATING BIOFILTER SCENARIO

TREATMENT COMPONENT	CUMULATIVE WEIGHT (LBS)
Primary Treatment (primary tank, filter, pump, vault)	
Excavation	1,534,500,000
Fiberglass	9,000,000
Polyethene/Polypropylene	425,000
HDPE	75,000
Steel	2,300,000
Secondary Treatment (AdvanTex Treatment Pod, pump)	
Excavation	238,500,000
Fiberglass	1,250,000
Polyester	8,250,000
HDPE	707,500
Polyethene/Polypropylene	300,000
Stainless Steel	2,300,000

MEMBRANE BIOREACTOR

Membrane bioreactors combine ultra-filtration and biological processes to treat wastewater. After screening, wastewater is mixed in an anoxic chamber where free-floating bacteria consume nutrients and alter the water chemistry. The water then flows through an aeration chamber before entering a third chamber containing the membrane bioreactor. Water is pumped through the fibrous membrane plate where free floating and attached growth microbes use the nutrient-rich wastewater as a food source. The highly-treated water is then discharged. Figure 2.12 shows the boundaries of the membrane bioreactor scenario included in this analysis.

FIGURE 2.12: MEMBRANE BIOREACTOR



System Components

1. Effluent Screen
2. MBR

System Summary and Assumptions

In this scenario, membrane bioreactors are placed at the neighborhood scale, allowing wastewater to be gravity-fed to its point of treatment. Based on manufacturer's suggested sizing, each standard package unit handles 5,000 GPD of wastewater flow. A total of 2,500 treatment units are needed to accommodate the 12.5 MGD cumulative wastewater flow from the city's service area.

Material and energy estimates were obtained from several manufacturers offering systems that use plate technology. Fine steel screens are used for pretreatment prior to entering the membrane bioreactor, eliminating the need for primary settling tanks

and pumps. Each unit sits on a concrete pad and is housed within a steel container. MBR module membranes are made from polyvinylidene fluoride which accounts for less than 1% of total material composition; however, this was not included in the LCA modeling because a suitable material inventory was not available. Sodium hypocholorite is added to the units on a biannual basis for cleaning and was included in the analysis. Table 2.14 summarizes all inventoried materials.

Energy estimates vary significantly from manufacturer to manufacturer of these systems. The cumulative energy demand range for the MBR scenario is estimated at between 62,500,000 kWhrs/yr to 175,260,000 kWhrs/yr. The specific system analyzed for this study is assumed to have a cumulative annual energy requirement of 142,894,763 kWhr/year. This estimate assumes that the units are located slightly below grade to ensure that the influent wastewater will not need to be pumped into the MBR chamber.

TABLE 2.14: SUMMARY BILL OF MATERIALS FOR MEMBRANE BIOREACTOR SCENARIO

TREATMENT COMPONENT	CUMULATIVE WEIGHT (LBS)
Pre-Treatment (screen)	
Steel	750,000
Secondary Treatment (membrane bioreactor)	
Dirt	270,000,000
Concrete	56,875,000
Steel	28,025,000
PVC	177,500
Rubber	750,000
Cast Iron	1,962,500
Polyester	125,000
Sodium Hypochlorite	14,000,000

RECIRCULATING CONSTRUCTED WETLANDS

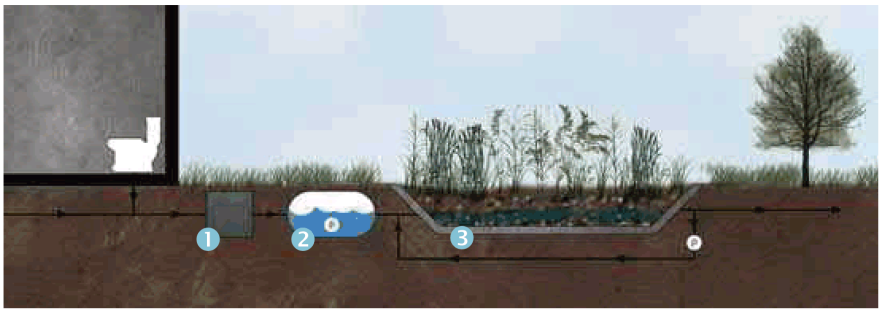
In this scenario, the Living Machine® system was selected as the basis of design for the constructed wetland. Living Machines are proprietary systems that utilize natural, chemical, biological and physical processes to treat wastewater. Figure 2.13 shows system components included in this scenario.

System Summary and Assumptions

Filtered wastewater is evenly distributed throughout the Living Machine approximately six inches below the system's surface. It then percolates through approximately six feet of highly-porous treatment media. Microbes attach to surfaces where they multiply, using the nutrients in wastewater as food. This media significantly increase attached growth surface area over traditional sand or gravel, resulting in higher bacteria growth rates. Since bacteria are largely responsible for wastewater treatment in Living Machines, the system's proliferating microbial community is able to treat wastewater to a higher level than traditional sand filters.

This scenario assumes that 25 Living Machines are strategically placed where the existing pump stations are currently located throughout the city, allowing the conveyance to each to be gravity-fed. The daily flow to each Living Machine is approximately 0.5 MGD (or 12.5 MGD divided by 25 Living Machines). Material quantities and weights were provided by system designers.

FIGURE 2.13: CONSTRUCTED TREATMENT WETLAND



System Components

1. Screw Screen
2. Primary Tank
3. Subsurface Flow Constructed Wetlands

The designed system includes two parallel primary screens, each with the capability of screening 100% of the daily flow. The second screen is intended solely as a backup in the event that the first is taken offline and to ensure that no wastewater backups occur. Wastewater from the conveyance system is gravity-fed through 2-foot wide by 6-inch thick concrete channels to the primary screens. Two 23-foot diameter concrete primary tanks were sized to equalize flow from one day. The base of the primary tanks is assumed to be approximately 18-feet below grade so that the primary screen can pump directly to the tanks.

After the flow is equalized, the wastewater enters the Living Machine where it recirculates eight times in both the stage 1 and stage 2 cells before being discharged. Based on the required flow rates to each wetland, the manufacturer sized the 25 Living Machines at 50,611-ft^2 each, and provided an estimated cumulative annual energy demand of 6,148,750 kWhr/year. Table 2.15 lists a material summary for the constructed wetland scenario.

TABLE 2.15: SUMMARY BILL OF MATERIALS FOR CONSTRUCTED WETLAND SCENARIO

TREATMENT COMPONENT	CUMULATIVE WEIGHT (LBS)
Primary Treatment (primary tank)	
Steel	42,500
Excavation	183,047,500
Concrete	66,570,300
Secondary Treatment (constructed wetland)	
Excavation	574,667,500
Concrete	5,467,500
Polyester	106,525
EPDM	441,325
Vitrified Slate	361,555,000
Washed Rock	69,415,325
Engineered Plastics	3,302,375
Stainless Steel	566,300
PVC	4,950
Fiberglass	450,000
HDPE	822,188

RESULTS

Life-cycle analysis results showing the environmental impacts of treatment and conveyance of the baseline and alternative wastewater treatment systems are presented below. Figure 2.14 shows the absolute impact values for the centralized treatment facility and each of the four distributed technologies over the 50-year life span.

FIGURE 2.14: OVERALL LIFE-CYCLE IMPACTS OF TREATMENT + CONVEYANCE SYSTEMS

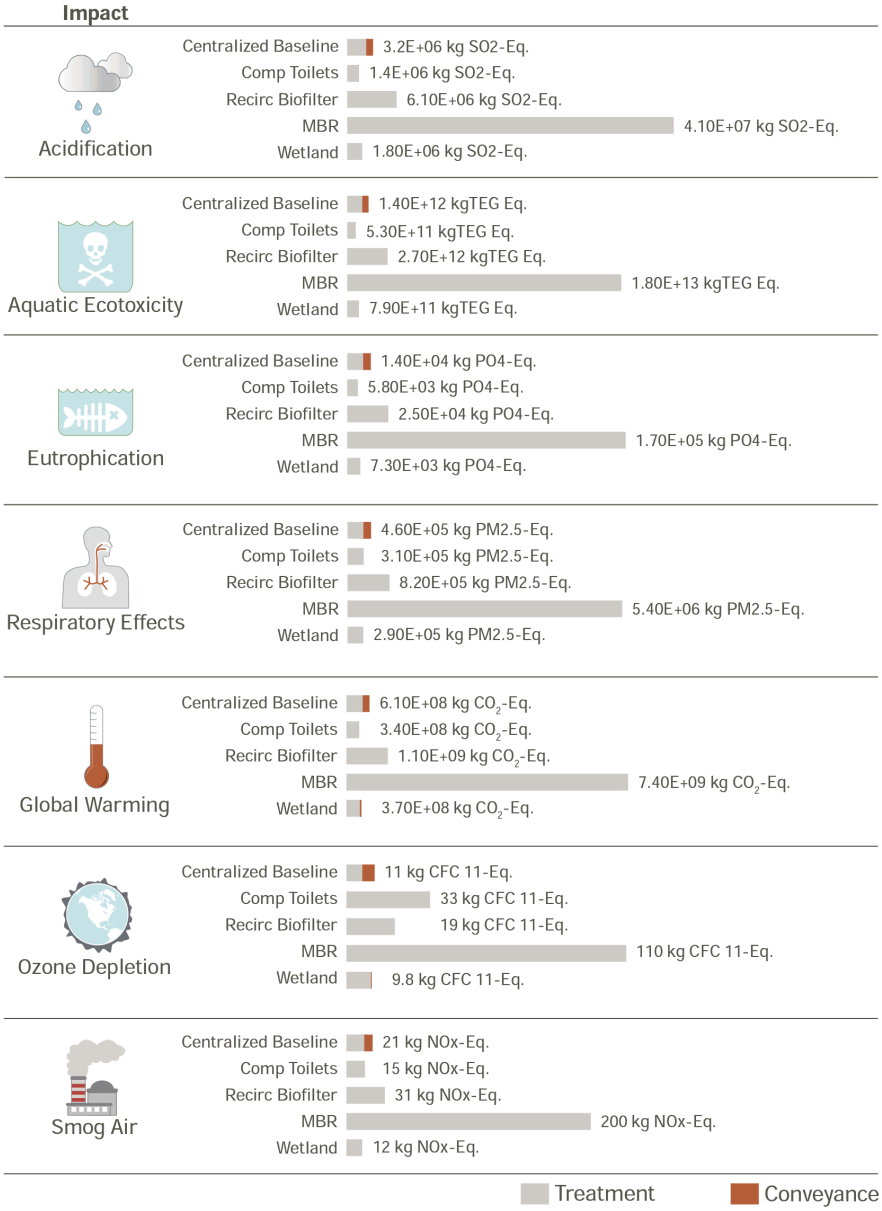


Table 2.16 shows the percent difference in environmental impacts of each of the four alternatives treatment systems compared to the baseline. These percentages take into account only those impacts associated with the treatment of the wastewater, excluding conveyance, in order to evaluate the various technologies themselves. Table 2.17, on the other hand, shows the percent difference in environmental impacts of each system compared to the baseline, taking into account both the treatment technology as well as conveyance of wastewater to its point of treatment.

TABLE 2.16: COMPARISON OF IMPACTS RELATIVE TO BASELINE FOR *TREATMENT SYSTEMS ONLY*

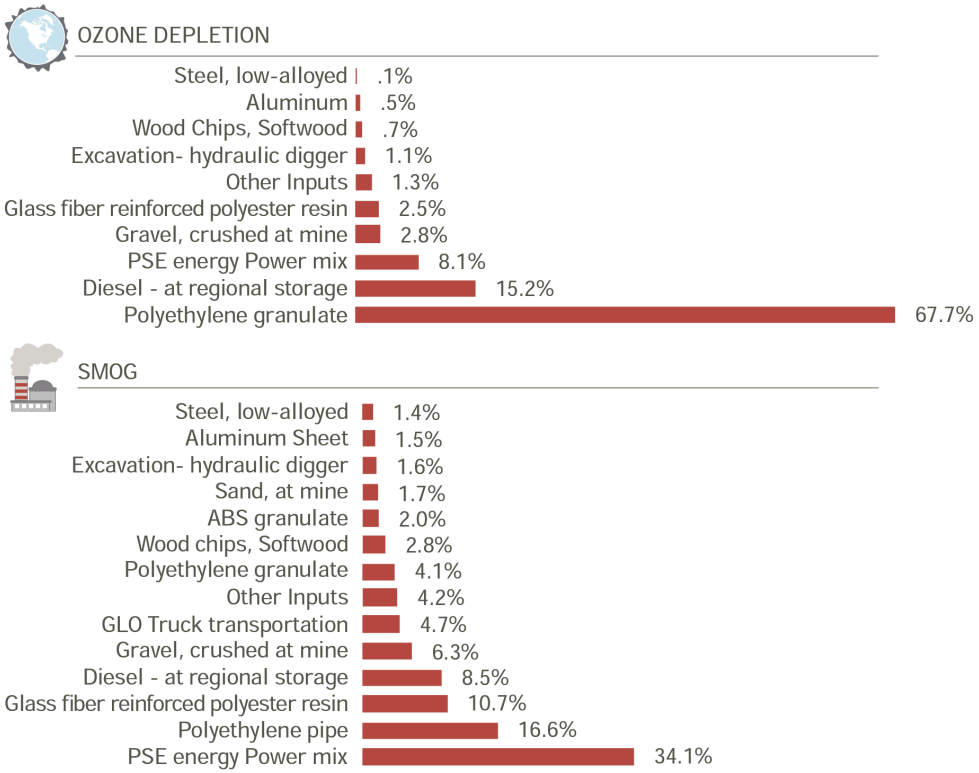
IMPACT	UNITS	COMP TOILETS	MBR	RECIRC. BIOFILTER	WETLAND
Acidification	kg SO2-Eq.	-38%	1640%	160%	-22%
Aq. Ecotoxicity	Kg TEG Eq.	-49%	1645%	159%	-24%
Eutrophication	kg PO4-Eq.	-37%	1709%	166%	-22%
Respiratory Effects	kg PM2.5-Eq.	-1%	1649%	165%	-6%
Global Warming	kg CO_2-Eq.	-19%	1632%	164%	-15%
Ozone Depletion	kg CFC 11-Eq.	437%	1643%	203%	56%
Smog Air	kg NOx-Eq.	6%	1366%	126%	-13%

TABLE 2.17: COMPARISON OF IMPACTS RELATIVE TO BASELINE FOR TREATMENT + CONVEYANCE SYSTEMS

IMPACT	UNITS	COMP TOILETS	MBR	RECIRC BIOFILTER	WETLAND
Acidification	kg SO2-Eq.	-55%	1160%	88%	-43%
Aq. Ecotoxicity	Kg TEG Eq.	-62%	1190%	92%	-43%
Eutrophication	kg PO4-Eq.	-58%	1098%	76%	-48%
Respiratory Effects	kg PM2.5-Eq.	-33%	1083%	79%	-36%
Global Warming	kg CO_2-Eq	-44%	1113%	85%	-40%
Ozone Depletion	kg CFC 11-Eq	221%	942%	81%	-6%
Smog Air	kg NOx-Eq	-29%	887%	52%	-41%

In comparison to the baseline centralized treatment and conveyance, the composting toilet and greywater wetland scenario has the least overall impact of all the alternative scenarios, including a 44% reduction in global warming impacts. The exception is in the ozone depletion category, where composting toilets represent a significantly higher impact over the baseline. This is due to the large quantity of polyethylene that makes up both the composting unit and the greywater wetland's primary treatment tank. Figure 2.15 shows the major drivers of ozone depletion and smog for the composting toilet scenario. If a material other than polyethylene were used, the environmental impact may be dramatically reduced.

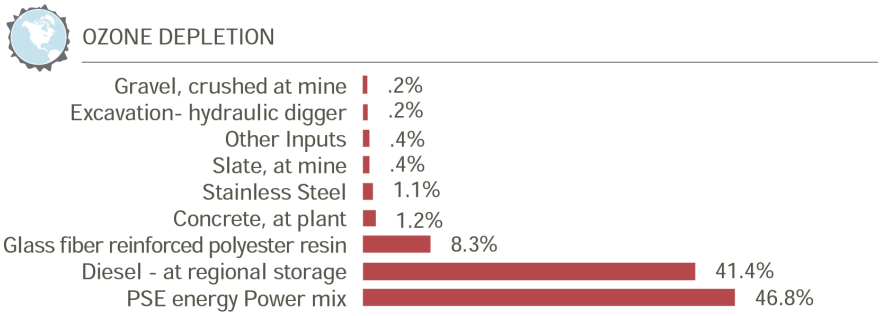
FIGURE 2.15: IMPACT DRIVERS FOR COMPOSTING TOILET SCENARIO



The above charts display the significant drivers of stratospheric ozone depletion and photochemical smog resulting from the manufacture, installation, and use of composting toilet-based treatment systems. Results are expressed in terms of percentage of the overall impact directly attributable to each driver. The top chart indicates that roughly two thirds of the ozone depleting emissions result from the manufacture of the polyethylene granulate used to form the primary tank and the composting unit itself. The bottom chart shows that roughy one third of the photochemical smog impacts are a result of the energy required to operate the system over the 50-year life-span.

Second only to composting toilets, the results indicate that the recirculating constructed wetland scenario had substantially lower environmental impacts compared to the baseline centralized treatment and conveyance system. Across most categories, this scenario represented a 35%-48% reduction in impacts, with 40% fewer global warming impacts than the baseline. Like the composting toilet scenario, ozone depletion impacts associated with the wetlands were notably larger (56% greater for treatment alone, and 6% less when conveyance is added to the analysis). Figure 2.16 shows the major drivers of ozone depletion for the constructed wetland scenario.

FIGURE 2.16: OZONE DEPLETION IMPACT DRIVERS FOR CONSTRUCTED WETLAND SCENARIO



The above chart displays the significant contributors, or drivers, of ozone depletion resulting from the manufacture, installation, and operation of a constructed wetland-based treatment system. Results are expressed in terms of percentage of impact attributable to each driver. The chart indicates that almost 90% of the overall ozone depleting impacts are attributable to the production of energy, either in the form of diesel used to transport the materials to and from the place of installation or as the energy required to operate the system over its lifespan.

The recirculating biofilter and membrane bioreactor scenarios both had much higher environmental impacts in relationship to the baseline. The biofilter was 52%-92% higher across impact categories while the MBR was upwards of 1,000% greater in comparison to the centralized facility. This is due to the fact that energy use was the major driver for both of these scenarios. Table 2.18 summaries the energy demands estimated for each of the scenarios.

TABLE 2.18: ENERGY USE SUMMARIES

SCENARIO	CUMULATIVE ANNUAL ENERGY REQUIREMENT (KW-HR/YEAR) TREATMENT	CONVEYANCE
Centralized Baseline	8,218,821	2,740,034
Composting Toilet + Greywater Wetland	3,635,400	N/A*
Constructed Wetland	6,148,750	N/A*
Recirculating Biofilter	21,050,000	N/A*
Membrane Bioreactor	142,895,000	N/A*
	62,500,000 (low) – 175,260,000 (high)	

* Alternative scenario assumed to be gravity-fed to point of treatment

A sensitivity analysis was run on the membrane bioreactor scenario using both the low and the high ends of the estimated range of energy use provided by system manufacturers. Table 2.19 shows that even when using the lower range of estimated energy consumption, which reduces the MBR impacts by roughly a third, the impacts are still significantly higher — approximately 400% — than those associated with the baseline scenario.

TABLE 2.19: MBR SENSITIVITY ANALYSIS
(TREATMENT + CONVEYANCE RELATIVE TO BASELINE)

IMPACT	MBR MODELED	MBR (LOW)	MBR (HIGH)
Acidification	1160%	453%	1444%
Ecotoxicity	1190%	468%	1481%
Eutrophication	1098%	456%	1357%
Respiratory Effects	1083%	427%	1347%
Global Warming	1113%	435%	1387%
Ozone Depletion	942%	370%	1172%
Smog Air	887%	349%	1104%

GAPS AND LIMITATIONS

In the baseline treatment system, an engineering analysis accounted for 100% of the materials, with 60% inventoried and the remaining 40% calculated based on profiles consistent with the characterized materials, primarily concrete and steel.

More than 99% of all materials in each of the four alternative treatment systems were included in the LCA modeling. Gaps do exist in the modeling, such as the polyvinylidene fluoride membranes in the MBR scenario where no data set was available. However, these gaps comprise a small fraction of the total weights of each alternative system.

A list of all gaps and limitations of the LCA modeling including parameters used to model the transportation of materials is listed in Appendix A, Table A.22.



PART 3
Conclusion

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3.1 CONVEYANCE ANALYSIS

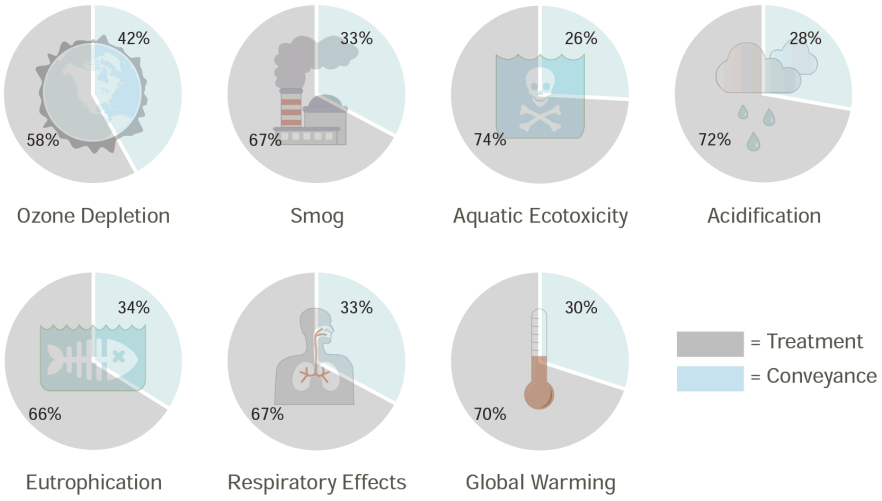
The conveyance analysis in this study looked at the existing network of pipes, manholes and pump stations to convey wastewater from 83,000 customers within a mid-sized Puget Sound-area community to a central location for treatment. Alternative density scenarios were then assessed by determining the conveyance necessary to serve the same number of customers within a smaller service boundary.

Results from the conveyance analysis highlight a number of key conclusions:

CONVEYANCE IMPACTS ARE SIGNIFICANT

For the baseline city studied, conveyance represented a significant portion of the overall impacts of the centralized treatment system — for instance, 30% of global warming and 42% of ozone depletion impacts, as shown in Figure 3.1. This is largely due to the fact that 25% of the energy of the entire system is used for conveyance, which is on the higher end compared to other cities. For communities with greater opportunity to rely on gravity flow, the negative environmental impacts associated with conveyance would likely be substantially less.

FIGURE 3.1: PERCENT CONTRIBUTION OF TREATMENT VERSUS CONVEYANCE IN BASELINE CENTRALIZED SCENARIO



In this study, the PSE 2008 power grid was used as the data source for the life cycle assessment. In this grid, hydroelectric—a comparably clean energy source—provides the majority of power in the baseline city. In areas of the country with dirtier fuel mixes—where coal is the primary energy source, for instance—conveyance will have even greater negative impacts.

For new developments, communities should be looking for ways to greatly reduce or eliminate the need for wastewater conveyance. Not only does this mean fewer negative environmental impacts, it also relates to fewer potential leaks and costly repairs. While the most appropriate technology for managing waste will be dependent on a number of factors including existing infrastructure, building scale and site characteristics, composting toilets (coupled with on-site treatment of greywater) offers a desirable alternative by eliminating the need for conveyance altogether.

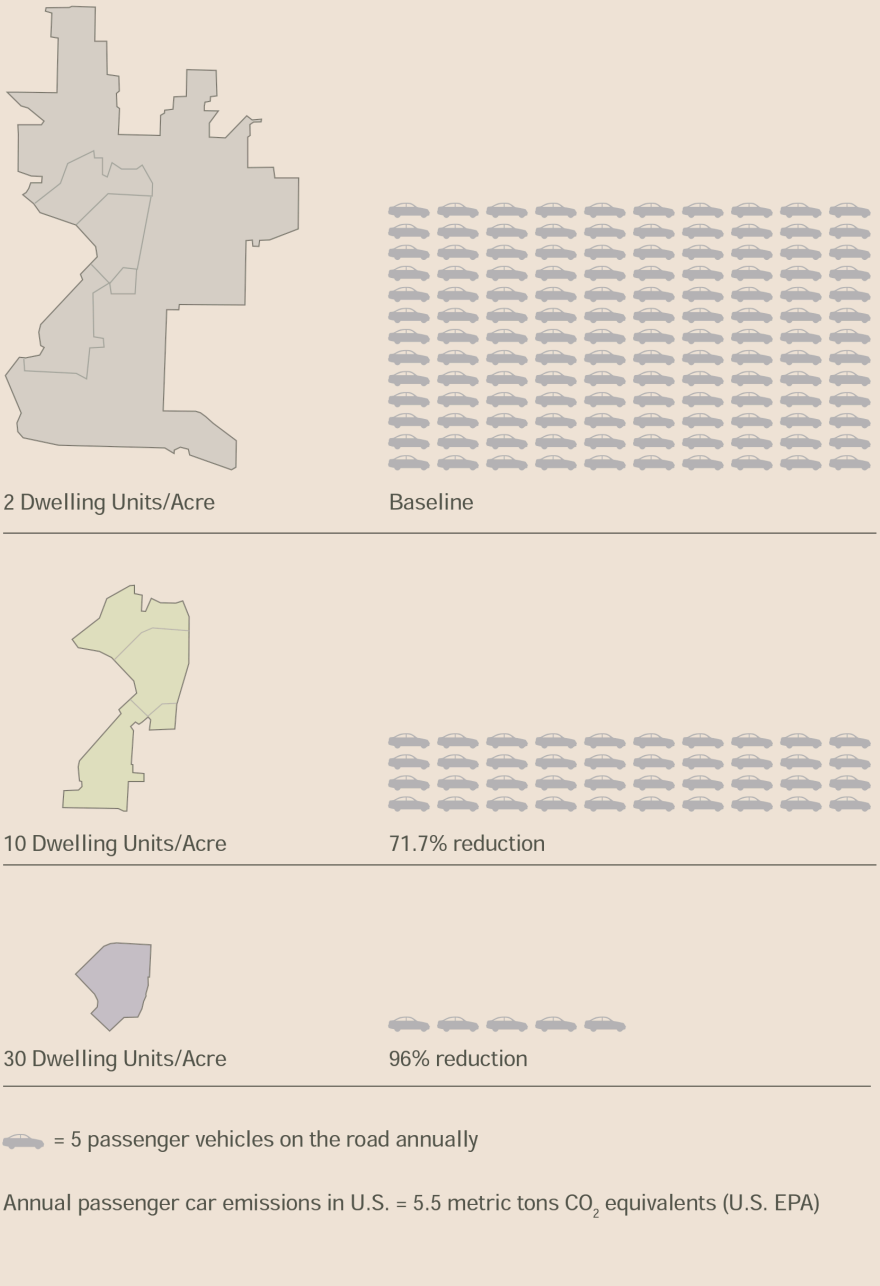
A composting toilet system also significantly reduces the amount of water demand for the building. While outside of the scope of this study, further research is needed comparing the impacts associated with conveying fresh water to buildings for non-potable purposes such as toilet flushing in order to fully assess the value of composting toilets as an alternative.

Density Matters

Increasing the community's density from two dwelling units per acre up to ten dwelling units per acre achieved a 71% reduction in global warming impacts (kg CO_2-Eq.) associated with conveying wastewater. At even higher densities (30 dwelling units per acre), such as those found in more urban core areas, a 96% reduction in global warming impacts was achieved. This translates to removing over 637 passenger vehicles on the road annually for a mid-sized city in the Puget Sound region.

Results from the conveyance analysis can help support decisions around land use planning and wastewater treatment at different scales. Much study and analysis is underway around the relationship between land use planning and vehicle miles traveled as a means for reducing a community's carbon footprint. The results in this report can further support communities seeking to curb sprawling development patterns and incentivize increased density by also addressing the carbon impacts associated with wastewater conveyance.

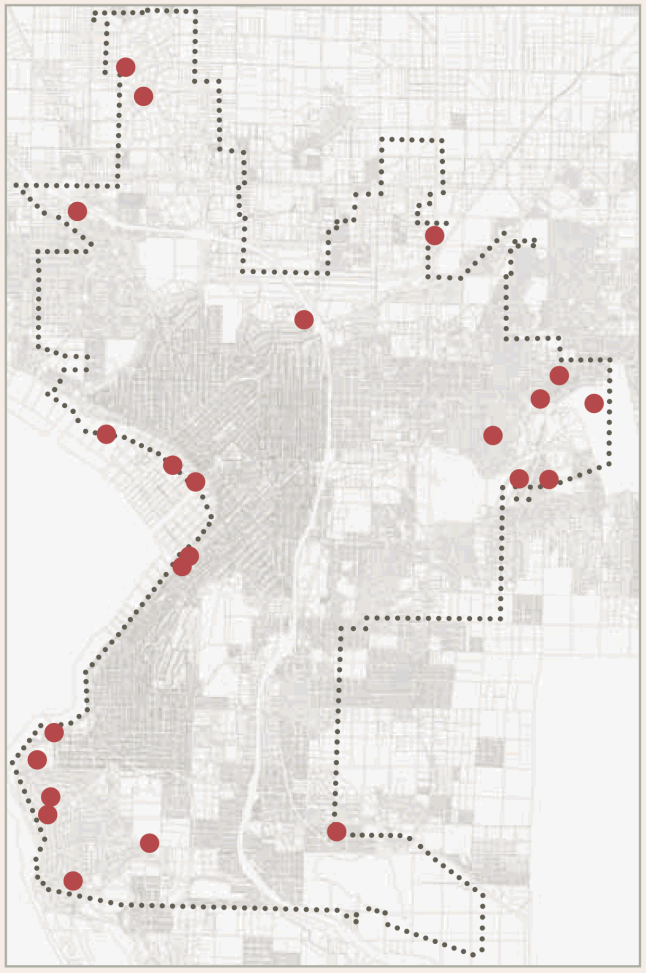
FIGURE 3.2: IMPACT OF DENSITY ON CO_2 EMISSIONS BY WASTEWATER CONVEYANCE (EXPRESSED AS NUMBER OF CARS ON THE ROAD)



PUMPING ENERGY DRIVES CONVEYANCE IMPACTS

For both the baseline conveyance and the ten dwelling units/acre density scenario, the annual operating energy needed to pressurize and pump wastewater to its point of treatment represented the majority of negative environmental impacts across all categories except ozone depletion.

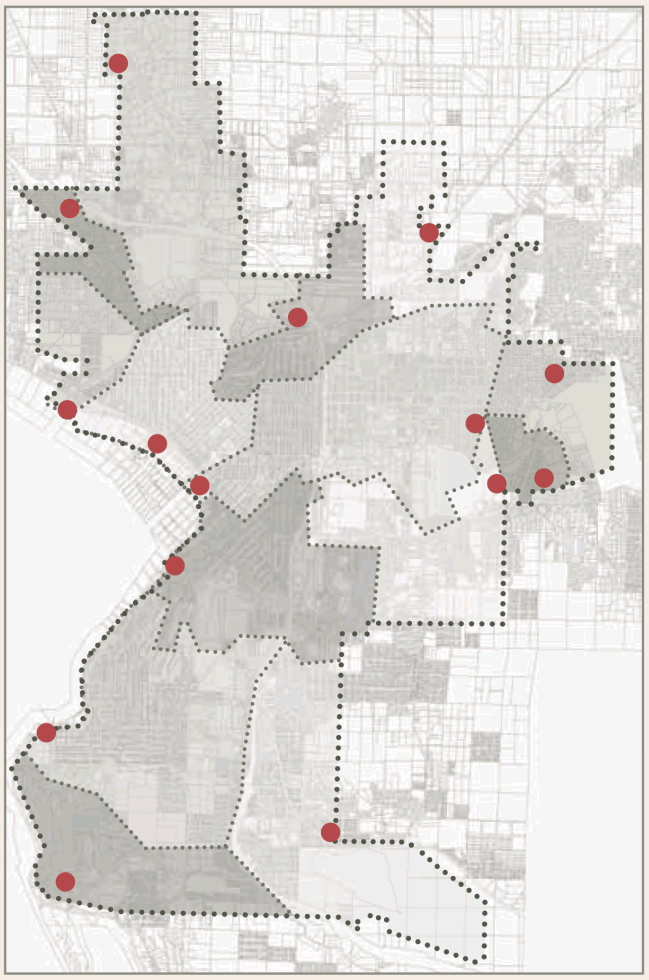
FIGURE 3.3: CENTRALIZED SCENARIO WITH PUMP STATIONS



The current paradigm for centralized wastewater treatment assumes that all buildings, regardless of their location, are best served by conveying wastewater over long distances, even if this requires lift stations to pressurize and pump the water uphill.

It can be concluded that elevation and geography play a major role in assessing the appropriate scale for wastewater conveyance, with the goal of reducing or eliminating the need for pump stations altogether. For the baseline city used in this analysis, Figures 3.3 and 3.4 demonstrate how locations of existing pump stations might serve as optimal locations for distributed treatment systems.

FIGURE 3.4: THEORETICAL WATERSHED BOUNDARIES WITH DISTRIBUTED TREATMENT SYSTEMS



By contrast, more distributed methods of treatment would look at those existing pump station locations and instead, assess them as likely places for smaller-scale treatment systems.

This figure demonstrates the concept of "wastesheds." Looking at treatment technologies such as constructed wetlands that also provide an asset, rather than an eyesore, for the community provides even further benefits.

3.2 TREATMENT SYSTEM ANALYSIS

The treatment analysis in this study evaluates four alternative scale technologies for treatment of wastewater from a mid-sized city in the Puget Sound region. The life cycle impact results from this analysis point toward the following key conclusions.

Treatment Energy Consumption Drives Overall Impacts

Annual operating energy demand can vary widely depending on the treatment technology employed. Further, it was determined that over a 50-year life span, energy demand was the major contributor of negative environmental impacts for each scenario with the exception of composting toilets. Table 3.1 shows the percent of wastewater treatment impacts that are attributed to the energy needed to construct and operate each system over its life span.

Regardless of conveyance, reducing the amount of energy needed to treat the wastewater will have a direct and significant impact on minimizing the negative environmental effects from treatment facilities. From these conclusions, community leaders and water utilities should be looking toward low-energy alternatives for upgrading and expanding their existing centralized treatment facilities.

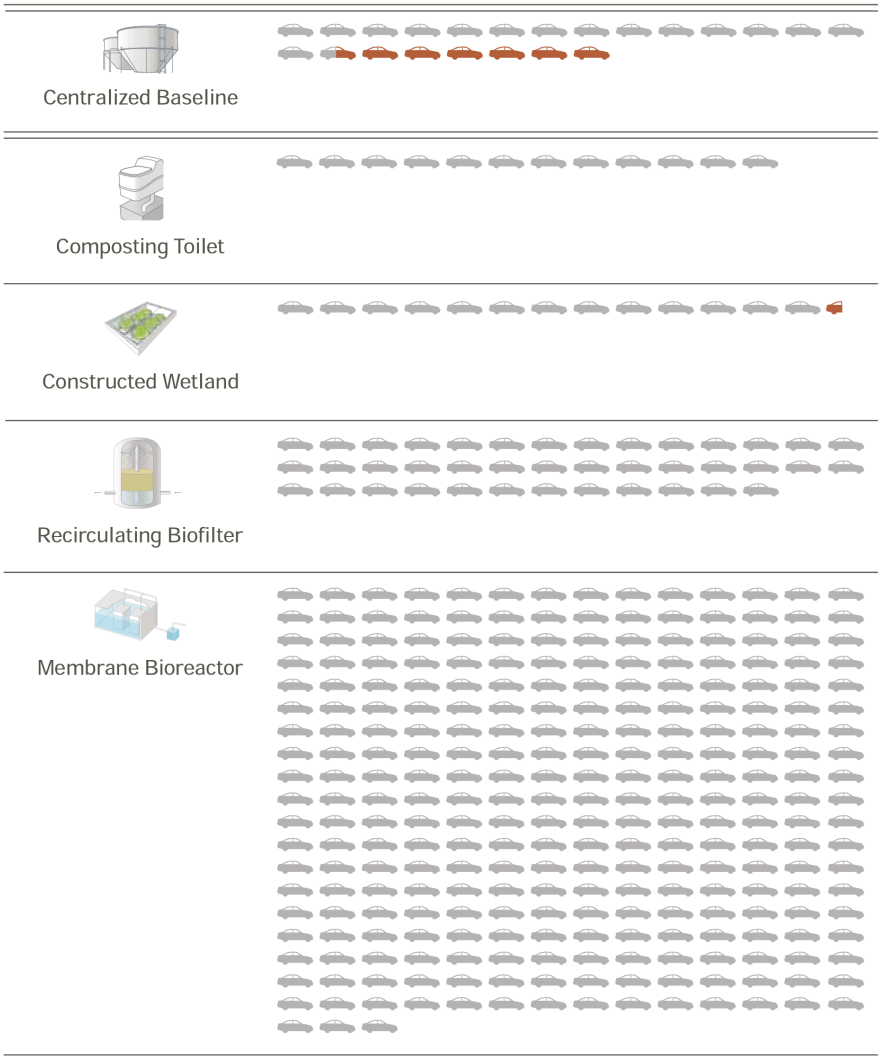
TABLE 3.1: PERCENT OF OVERALL TREATMENT IMPACTS DUE TO ENERGY

IMPACT	UNITS	CENTRALIZED BASELINE	COMP TOILETS	RECIRC BIOFILTER	MBR	WETLAND
Acidification	kg SO2-Eq.	99.80%	71.70%	98.30%	99.80%	95.70%
Aq. Ecotoxicity	kg TEG Eq.	99.80%	86.40%	98.70%	99.50%	97.60%
Eutrophication	kg PO4-Eq.	99.10%	69.90%	95.50%	95.10%	94.20%
Respiratory Effects	kg PM2.5-Eq.	99.10%	44.10%	95.90%	98.50%	78.70%
Global Warming	kg CO_2-Eq	99.00%	54.30%	96.10%	99.40%	86.40%
Ozone Depletion	kg CFC 11-Eq	97.80%	8.10%	82.80%	97.60%	46.40%
Smog Air	kg NOx-Eq	81.80%	34.10%	92.80%	96.90%	69.40%

On-Site Composting Toilets and Greywater Treatment Wetlands Have Lowest Environmental Impacts

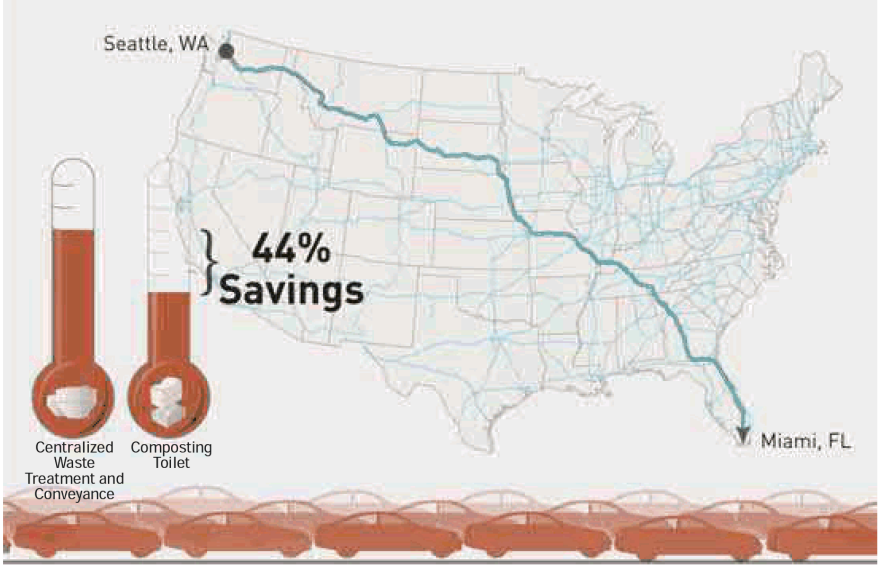
Results from the LCA clearly demonstrate that building-scale, low-energy wastewater treatment systems demonstrated by the composting toilet and greywater treatment wetland scenario have considerably lower impact on the environment compared to our current practices for centralized conveyance and treatment. Figure 3.5 relates the global warming impacts of the baseline and alternative treatment scenarios, including conveyance contributions, to an equivalent number of cars on the road. The composting toilet scenario equates to a 44% reduction in climate change impacts, which is equivalent to removing 1,000 passenger vehicles on the road annually based on a city population of 67,000. As shown in Figures 3.6, if scaled to the entire country, it equates to removing more than three lanes of bumper-to-bumper traffic between Seattle and Miami annually.

FIGURE 3.5: GLOBAL WARMING IMPACTS EXPRESSED AS EQUIVALENT CARBON EMISSIONS FROM PASSENGER VEHICLES ON THE ROAD



In comparison to the baseline centralized scenario, the percent difference for each scenario equates to: Composting Toilets (-44%), Constructed Wetland (-40%), Recirculating Biofilter (+85%), and Membrane Bioreactor (+1113%).

FIGURE 3.6: ESTIMATED CARBON SAVINGS SCALED TO NATIONAL LEVEL*



Annually, centralized waste treatment and conveyance emit 44% more CO_2 than if households switched to composting toilets and greywater treatment wetlands. This equates to the equivalent of removing approximately three lanes of cars stacked bumper to bumper between Seattle and Miami off the road annually.

* Based on findings from global warming impacts related to the baseline city used in this study. Estimated CO_2 savings are scaled up to address national population (2000 US Census). Actual savings may vary.

Based on these results, composting toilets coupled with on-site constructed wetlands to treat greywater prior to discharge should be a key strategy for new buildings and development projects, particularly in areas with increasingly scarce water resources that would especially benefit from systems that eliminate the need for water.

In addition to water conservation, this scenario also offers a range of additional environmental benefits outside the scope of this analysis, such as the ease of reclaiming nutrients from the composting process and integrating greywater into landscape irrigation or for on-site agricultural uses.

The viability of incorporating these systems broadly will be dependent on a number of factors including space constraints, capital costs, ongoing operations and maintenance requirements, regulatory support and public acceptance. These factors are not necessarily prohibitive. For instance, in urban areas where less land is available for on-

site treatment, options include incorporating greywater treatment strategies into interior spaces such as irrigation of vegetated (living) walls or into exterior, rooftop vegetated areas. And, gaining public acceptance may be accomplished through educational outreach focusing on the proven success of the proposed technologies and exemplary models where such a system is already in place.

Constructed Wetlands Offer Benefits at the District Scale

The recirculating constructed wetland scenario evaluated in this study demonstrated a 35%-45% decrease in environmental impacts across almost all impact categories when compared to the baseline centralized treatment and conveyance scenario, including a 40% reduction in global warming impacts.

In this scenario, constructed wetlands were evaluated at the district-scale and strategically placed at locations of existing pump stations. Rather than pressurizing and pumping wastewater to a centralized location, smaller-scale treatment facilities located at these locations can help eliminate the negative impacts associated with energy-intensive conveyance of wastes. When this strategy is coupled with a lower-impact treatment technology such as constructed wetlands, the reductions in impacts are significant. Looking at the treatment systems alone (without conveyance impacts), the wetland system has shown to have 15% less global warming impacts compared to the activated sludge centralized treatment facility.

These results point toward the use of constructed treatment wetlands at the district or neighborhood scale as a viable strategy for communities seeking to lower the negative environmental impacts associated with wastewater treatment. Further assessing their benefits in terms of a low impact stormwater management strategy, as well as their ability to provide public amenities as open space for humans and wildlife, is likely to make them a fundamental part of waste treatment in the future. As such, there is a growing need for policy-makers and regulatory agencies to define standards and increase support for constructed treatment wetlands at the district-scale.

Reuse Potential Must be Considered with Higher Energy Treatment Technologies

Both the recirculating biofilter and the membrane bioreactor scenarios displayed results that greatly under-performed in comparison to the baseline centralized treatment scenario. Further analysis on biofilters may indicate that a community with larger conveyance energy requirements than what was used in this study may show the biofilter scenario in a more favorable light. However, the high-energy demands of these systems mean that they actually have greater negative environmental impacts when compared to a centralized treatment facility with a largely gravity-fed conveyance system.

When membrane bioreactors are used in the comparison, the enormous energy demands of the MBR are so much greater than the baseline that they are unlikely to be viewed as an ideal distributed scale solution for treatment within the boundaries of this study. Further analysis is needed to evaluate under what conditions MBRs are comparable to other alternatives. MBRs are capable of providing very high levels of treated water for the purposes of reuse, and when installed at the building scale they offer the benefit of using the reclaimed water directly on-site, reducing the need for fresh water supplied to the building. This is particularly valuable in locations where water resources are scarce.

It is likely that in a life-cycle analysis that includes wastewater treated to higher levels for reuse purposes and takes into consideration those impacts associated with supplying fresh water from centralized facilities, MBRs may have greater applicability.

3.3 FURTHER RESEARCH

Clean Water, Healthy Sound represents an in-depth investigation of various wastewater treatment and conveyance strategies and their environmental impacts over a 50-year life span. While it provides insight into how decentralized and distributed-scale technologies compare to conventional centralized systems, further research and analysis will provide an even greater level of understanding of impact drivers and how the data in this report can best serve as a resource for decision makers in assessing infrastructure alternatives. Building upon the findings of this study, the following topics highlight areas of further research needs.

Run Sensitivity Analysis for Composting Toilets Scenario
The composting toilet scenario in this analysis showed fewer negative impacts compared to centralized treatment in all categories with the exception of ozone depletion. The large quantity of polyethylene granulate — which makes up the system's piping, wetland liner and composting unit itself — are driving stratospheric ozone depletion impacts over 220% percent higher than the baseline. Further analysis is needed to assess how alternative materials to polyethylene, such as fiberglass tanks or clay liners, may perform differently.

Consider Lower Energy Constructed Wetland Systems
In this analysis, Living Machines were used in the recirculating constructed wetland scenario. Like composting toilets, ozone depletion impacts were higher when compared to the baseline centralized treatment system. Since approximately 90% of the wetland's ozone depleting impacts are attributable to the production of energy — either in the form of diesel used to transport the materials to and from the place of installation or as the energy required to operate the system over the product's lifespan — further sensitivity analysis is needed to determine how alternative wetland designs that require less operating energy will compare.

For Living Building projects that also meet all of their own power needs through on-site renewable energy, such as in the case of the Omega Center (see page 24), the life-cycle environmental impacts of the constructed treatment wetland scenario may vary greatly. Further analysis is needed to determine how net zero energy buildings with on-site constructed treatment wetlands compare to more conventional, centralized approaches.

Further Characterize Centralized Treatment System
Approximately 60% of all materials in the centralized wastewater treatment system were inventoried in the baseline analysis. This inventory was developed through a site visit to the actual facility and engineering estimates of material quantities. Due to the complexity of this large system and limitation of available data provided by the city, the remaining 40% of material composition was extrapolated based on engineering analysis of the existing inventory. Further research is needed to more comprehensively quantify the centralized baseline system in order to provide a more accurate comparison.

Evaluate Alternate Treatment Scenarios at Different Density Scales
The treatment analysis assessed four smaller-scale distributed treatment technologies applied at the baseline density scale of two dwelling units per acre. It is assumed that economies of scale may be realized as these systems are applied at increasing density scales. Further evaluation of the constructed wetland and recirculating biofilter scenarios applied at the ten and 30 dwelling units per acre scale may demonstrate interesting results for comparison to centralized treatment systems.

Expand Boundaries of Study to Include Water Reuse and Nutrient Reclamation
One advantage of smaller-scale treatment systems is the opportunity for treatment of the water for reuse applications either on-site or at the district scale. Analysis of life-cycle impacts associated with water reuse and the offsetting of fresh water supply will provide a more comprehensive understanding of how decentralized systems compare to conventional practices for both water supply and treatment.

Additionally, further research is necessary to assess how smaller-scale systems may provide opportunities for reclaiming valuable nutrients in the waste stream in comparison to reclamation at the centralized scale.



APPENDICES

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APPENDIX A. BILL OF MATERIALS AND ASSUMPTIONS

TABLE A.1: BASELINE CONVEYANCE GRAVITY PIPE MATERIAL SUMMARY

DIAMETER (in)	LENGTH (ft)	NUMBER OF MANHOLES	SIZE AND TYPE OF MANHOLES	DEPTH OF EXCAVATION (ft)	WIDTH OF TRENCH (ft)	VOLUME OF EXCAVATION (cf)	PEA GRAVEL BEDDING (cf)	BACKFILL (CF)	MATERIAL	PVC PIPE WEIGHT PER FOOT (lb/ft) Manufacturer's Data according to ASTM D3034 and F679	RCP PIPE WEIGHT PER FOOT (lb/ft) Manufacturer's Data according to AASHTO M170	POUNDS OF RCP MATERIAL (lbs) LxWeight per Foot	POUNDS OF PVC MATERIAL (lbs) LxWeight per Foot
8	1230940	4797	48" Type II	6.00	2.0	14771276	3673671	10668144	PVC	4.24			5219184
10	107702	420	48" Type I	6.17	2.8	1881795	500740	1322342	PVC	6.64			715142
12	96960	378	48" Type I	6.33	3.0	1842232	505644	1260475	PVC	9.50			921116
15	46016	179	48" Type I	6.58	3.3	984550	280050	648058	PVC	14.19			652966
18	50449	197	48" Type I	6.83	3.5	1206581	352326	765149	PVC	21.43			1081130
21	20322	79	48" Type I	7.08	3.8	539795	160713	330227	PVC	29.88			607212
24	25174	98	54" Type I	7.33	4.0	738440	223042	436351	PVC	38.96			980782
27	1599	6	54" Type I	7.58	4.3	51531	15731	29446	PVC	49.47			79098
30	27346	107	54" Type I	7.83	4.5	963956	296536	533252	PVC	64.18			1755083
36	5934	23	54" Type I	8.33	5.0	247247	76755	128568	RCP		645	3827378	
42	668	3	72" Type I	8.83	5.5	32455	10110	15921	RCP		811	541764	
48	6558	26	96" Type I	9.33	6.0	367256	114374	170512	RCP		1011	6630290	
60	11713	46	96" Type I	10.33	7.0	847222	262073	355287	RCP		1488	17428568	
				TOTAL VOLUME (cf) =		24474334	6471765	16663732					
				TOTAL VOLUME (cy) =		906457	239695	617175					
				TOTAL WEIGHT (lbs) =		2202690087	623206975	1974960821				28428000	12011713
				TOTAL WEIGHT (tons) =		1101345	311603	987480				14214	6006

TABLE A.2: BASELINE CONVEYANCE PRESSURE PIPE MATERIAL SUMMARY

DIAMETER (in)	LENGTH (ft)	DEPTH OF EXCAVATION (ft)	WIDTH OF TRENCH (ft)	VOLUME OF EXCAVATION, VE (cf)	PEA GRAVEL BEDDING (cf)	BACKFILL (cf)	MATERIAL	DI PIPE WEIGHT PER FOOT (LB/ ft)	HDPE PIPE WEIGHT PER FOOT (lb/ft)	POUNDS OF DI MATERIAL (lbs)	POUNDS OF HDPE MATERIAL (lbs)
								Manufacturer's Data according to ANSI/AWWA C151/A21.51	Manufacturer's Data according to DR 17; ANSI/NSF-61	LxWeight per Foot	LxWeight per Foot
4	9761	4.17	3	122010	38192	82967	DI	10.9		106393	
6	7542	4.33	3	98046	32459	64107	DI	16.0		120672	
8	7362	4.50	3	99387	34242	62577	DI	21.1		155339	
10	3060	4.67	3	42837	15161	26008	DI	27.1		82920	
12	715	4.83	3	10366	3728	6076	DI	34.8		24878	
15	23	5.08	3	350	127	195	DI	49.3		1130	
18	1043	5.33	3	16692	5982	8868	DI	57.2		59673	
36	2319	6.83	4	63395	20723	26286	HDPE		98.6		228616
42	2447	7.33	5	89711	31522	34661	HDPE		134.2		328243
		TOTAL VOLUME (cf) =		542793	182135	311745					
		TOTAL VOLUME (cy) =		20103	6746	11546					
		TOTAL WEIGHT (lbs) =		48851397	17538912	36947534				551005	556859
		TOTAL WEIGHT (tons) =		24426	8769	18474				276	278

TABLE A.3: BASELINE CONVEYANCE MANHOLE SUMMARY

SIZE AND TYPE OF MANHOLES	DEPTH OF EXCAVATION (ft)	NUMBER OF MANHOLES	VOLUME OF EXCAVATION (cf)	VOLUME OF BACKFILL (cf)	VOLUME OF CONCRETE (cf)
ø48" Type II	7	4,797	1,220,098	589,901	280,008
ø48" Type I	11	1,253	531,029	311,089	93,040
ø54" Type I	11	234	102,514	56,524	18,058
ø72" Type I	12	3	2,354	1,737	237
ø96" Type I	13	71	117,379	79,709	11,219
		TOTAL VOLUME (cf) =	1,973,375	1,038,959	402,561
		TOTAL VOLUME (cy)=	73,088	38,480	14,910
		TOTAL WEIGHT (lbs)=	177,603,759	123,135,907	60,384,210
		TOTAL WEIGHT (tons)=	88,802	61,568	30,192

TABLE A.4: BASELINE CONVEYANCE SMALL PUMP STATION MATERIALS

	TOTALS	WET WELLS	2 CYLINDERS	TOP SLAB	WET WELL BASES	VOLUME INSIDE WINGS (SF) SEC C-C	VOLUME INSIDE WINGS (SF) SEC B-B	FILLETS
Depth of Excavation (ft)	30							
Volume of Excavation (cf)	11,250							
Volume of Excavation (cy)	417							
Area of Concrete (sf)	519	284.4	53.4	177.6	231.0	15.0	42.4	57.4
Volume of Concrete, Vc (cf)	2,241	1,725.6	1,494.6	207.2	231.0	75.0	233.1	308.1
Weight of Concrete (lbs)	336,151							

TABLE A.5: BASELINE CONVEYANCE SMALL PUMP STATION MATERIALS AND ENERGY SUMMARY

	EXCAVATION	BACKFILL	CONCRETE	ANNUAL ENERGY DEMAND
Wet Wells	11,250	7,703	1,726	
Top Slab	-		207	
Interior Fillets	-		308	
Total Volume (cf) =	11,250	7,703	2,241	8,965 kW-hrs
Total Volume (cy) =	417	285	83	
Total Weight (lbs) =	1,012,500	912,948	336,151	
Total Weight (tons) =	506	456	168	

ASSUMPTIONS:
A=(pi*(Do2-Din2))/4
Do=outer dia of pipe (in)
Di=inner dia of pipe (in)
Vc=volume of concrete
lbs of conc = 150(lbs/cf)*Vc

ITEMS NOT INCLUDED IN ESTIMATE:
fittings
vents
rails
piping

TABLE A.6: BASELINE CONVEYANCE LARGE PUMP STATION MATERIALS

	TOTALS	WET WELL	PUMP STATION
Depth of Excavation (ft)		30	31
Volume of Excavation (cf)	122,665	43,560	79,105
Volume of Excavation (cy)	4,543	1,613	2,930
Volume of Concrete, Vc (cf)	40,295	12,805	27,490
Weight of Concrete (lbs)	604,4250		
Weight of Steel (lbs)	94,214	51,494	42,720
Volume of Backfill (cf)		14,130	15,777
Volume of Backfill (cy)		523	584

TABLE A.7: BASELINE CONVEYANCE LARGE PUMP STATION SUMMARY

	EXCAVATION	BACKFILL	CONCRETE	STEEL	ANNUAL ENERGY DEMAND
Wet Wells	43,560	14,130	12,805	105	
Building and Site	79,105	15,777	27,490	87	
Total Volume (cf) =	122,665	29,907	40,295	192	234,424 kW-hrs
Total Volume (cy) =	4,543	1,108	1,492	7	
Total Weight (lbs) =	11,039,807	3,544,543	6,044,250	94,214	
Total Weight (tons) =	5,520	1,772	3,022	47	

TABLE A.8: DENSITY SCENARIO 1 GRAVITY PIPE MATERIAL SUMMARY

DIAMETER (in)	LENGTH (ft)	Number of Manholes	Size and Type of Manholes	DEPTH OF EXCAVATION (ft)	WIDTH OF TRENCH (ft)	VOLUME OF EXCAVATION (cf)	Pea Gravel Bedding (cf)	Backfill (cf)	MATERIAL	PVC PIPE WEIGHT PER FOOT (lb/ft)	RCP PIPE WEIGHT PER FOOT (lb/ft)	POUNDS OF RCP MATERIAL (lbs)	POUNDS OF PVC MATERIAL (lbs)
										Manufacturer's Data according to ASTM D3034 and F679	Manufacturer's Data according to AASHTO M170	LxWeight per Foot	LxWeight per Foot
12	429,798	1,675	48" Type I	6.33	3.00	8,166,162	2,241,397	5,587,374	PVC	9.50			4,083,081
15	9,726	38	48" Type I	6.58	3.25	208,096	59,192	136,975	PVC	14.19			138,012
18	2,987	12	48" Type I	6.83	3.50	71,439	20,860	45,303	PVC	21.43			64,011
21	4,803	19	48" Type I	7.08	3.75	127,580	37,984	78,049	PVC	29.88			143,514
24	2,585	10	54" Type I	7.33	4.00	75,827	22,903	44,807	PVC	38.96			100,712
27	1,836	7	54" Type I	7.58	4.25	59,173	18,063	33,813	PVC	49.47			90,827
30	2,372	9	54" Type I	7.83	4.50	83,613	25,721	46,254	PVC	64.18			152,235
36	1,879	7	54" Type I	8.33	5.00	78,292	24,305	40,712	RCP		645	1,211,955	
42	0	0	72" Type I	8.83	5.50	0	0	0	RCP		811	0	
48	8,479	33	96" Type I	9.33	6.00	474,824	147,874	220,454	RCP		1,011	8,572,269	
60	6,765	26	96" Type I	10.33	7.00	489,335	151,367	205,205	RCP		1,488	10,066,320	
				TOTAL VOLUME (cf) =		9,834,340	2,749,666	6,438,944					
				TOTAL VOLUME (cy) =		364,235	101,839	238,479					
				TOTAL WEIGHT (lbs) =		885,090,576	264,782,693	763,134,153				19,850,544	4,772,391
				TOTAL WEIGHT (tons) =		442,545	132,391	381,567				9,925	2,386

TABLE A.9: DENSITY SCENARIO 1 PRESSURE PIPE MATERIAL SUMMARY

DIAMETER (in)	LENGTH (ft)	DEPTH OF EXCAVATION (ft)	WIDTH OF TRENCH (ft)	VOLUME OF EXCAVATION, VE (cf)	PEA GRAVEL BEDDING (cf)	BACKFILL (cf)	MATERIAL	DI PIPE WEIGHT PER FOOT (lb/ft)	HDPE PIPE WEIGHT PER FOOT (lb/ft)	POUNDS OF DI MATERIAL (lbs)	POUNDS OF HDPE MATERIAL (lbs)
								Manufacturer's Data according to ANSI/AWWA C151/A21.51	Manufacturer's Data according to DR 17; ANSI/NSF-61	LxWeight per Foot	LxWeight per Foot
18	1,067	5.33	3.0	17,072	6,118	9,070	DI	57		61,032	
36	2,329	6.83	4.0	63,659	20,810	26,395	HDPE		99		229,570
42	2,411	7.33	5.0	88,403	31,063	34,156	HDPE		134		323,460
		TOTAL VOLUME (cf) =		169,135	57,990	69,621					
		TOTAL VOLUME (cy) =		6,264	2,148	2,579					
		TOTAL WEIGHT (lbs) =		15,222,120	5,584,246	8,251,338				61,032	553,029
		TOTAL WEIGHT (tons) =		7,611	2,792	4,126				31	277

TABLE A.10: DENSITY SCENARIO 1 MANHOLE SUMMARY

SIZE AND TYPE OF MANHOLES	DEPTH OF EXCAVATION (ft)	NUMBER OF MANHOLES	VOLUME OF EXCAVATION (cf)	VOLUME OF BACKFILL (cf)	VOLUME OF CONCRETE (cf)
ø48" Type II	7	1,675	426,013	205,971	97,768
ø48" Type I	11	68	28,936	16,951	5,070
ø54" Type I	11	34	14,804	8,162	2,608
ø72" Type I	12	0	0	0	0
ø96" Type I	13	59	97,933	66,504	9,360
		TOTAL VOLUME (cf) =	567,686	297,589	114,806
		TOTAL VOLUME (cy)=	21,025	11,022	4,252
		TOTAL WEIGHT (lbs)=	51,091,725	35,269,778	17,220,852
		S (tons)=	25,546	17,635	8,610

TABLE A.11: DENSITY SCENARIO 2 GRAVITY PIPE MATERIAL SUMMARY

DIAMETER (in)	LENGTH (ft)	NUMBER OF MANHOLES	SIZE AND TYPE OF MANHOLES	DEPTH OF EXCAVATION (ft)	WIDTH OF TRENCH (ft)	VOLUME OF EXCAVATION (cf)	PEA GRAVEL BEDDING (cf)	BACKFILL (cf)	MATERIAL	PVC PIPE WEIGHT PER FOOT (lb/ft)	RCP PIPE WEIGHT PER FOOT (lb/ft)	POUNDS OF RCP MATERIAL (lbs)	POUNDS OF PVC MATERIAL (lbs)
										Manufacturer's Data according to ASTM D3034 and F679	Manufacturer's Data according to AASHTO M170	LxWeight per Foot	LxWeight per Foot
12	197,730	771	48" Type I	6.33	3.0	3,756,870	1,031,162	2,570,490	PVC	9.5			1,878,435
15	6,571	26	48" Type I	6.58	3.3	140,592	39,991	92,542	PVC	14.2			93,242
18	4,235	17	48" Type I	6.83	3.5	101,287	29,576	64,231	PVC	21.4			90,756
21	1,386	5	48" Type I	7.08	3.8	36,816	10,961	22,523	PVC	29.9			41,414
24	803	3	54" Type I	7.33	4.0	23,555	7,115	13,919	PVC	39.0			31,285
27	523	2	54" Type I	7.58	4.3	16,856	5,146	9,632	PVC	49.5			25,873
30	301	1	54" Type I	7.83	4.5	10,610	3,264	5,870	PVC	64.2			19,318
36	1,656	6	54" Type I	8.33	5.0	69,000	21,420	35,880	RCP		645	1,068,120	
42	3,810	15	72" Type I	8.83	5.5	185,103	57,660	90,805	RCP		811	3,089,910	
48	294	1	96" Type I	9.33	6.0	16,464	5,127	7,644	RCP		1,011	297,234	
60	468	2	96" Type I	10.33	7.0	33,852	10,472	14,196	RCP		1,488	696,384	
				TOTAL VOLUME (cf) =		4,391,004	1,221,893	2,927,730					
				TOTAL VOLUME (cy) =		162,630	45,255	108,434					
				TOTAL WEIGHT (lbs) =		395,190,360	117,663,749	346,990,222				5,151,648	2,180,323
				TOTAL WEIGHT (tons) =		197,595	58,832	173,495				2,576	1,090

TABLE A.12: DENSITY SCENARIO 2 MANHOLE SUMMARY

SIZE AND TYPE OF MANHOLES	DEPTH OF EXCAVATION (ft)	NUMBER OF MANHOLES	VOLUME OF EXCAVATION (CF)	VOLUME OF BACKFILL (cf)	VOLUME OF CONCRETE (cf)
ø48" Type II	7	771	195,988	94,758	44,979
ø48" Type I	11	48	20,141	11,799	3,529
ø54" Type I	11	13	5,604	3,090	987
ø72" Type I	12	15	13,427	9,905	1,354
ø96" Type I	13	3	4,895	3,324	468
		TOTAL VOLUME (cf) =	240,057	122,877	51,317
		TOTAL VOLUME (cy)=	8,891	4,551	1,901
		TOTAL WEIGHT (lbs)=	21,605,088	14,563,160	7,697,494
		TOTAL WEIGHT (tons)=	10,803	7,282	3,849

TABLE A.13: ASSUMPTIONS

ASSUMPTIONS
Length of 4" and 6" gravity mains were added to the length of 8", as the smaller mains would not be constructed today
Length of 14" gravity mains were added to the length of 15", as 14" is a non-standard size
Length of 16" gravity mains were added to the length of 18", as 16" is a non-standard size
Length of 20" gravity mains were added to the length of 21", as 20" is a non-standard size
Length of 23" gravity mains were added to the length of 24", as 23" is a non-standard size
Length of 28" gravity mains were added to the length of 30", as 28" is a non-standard size
With a total of 6,357 manholes, the total was prorated based on pipe length for each pipe size
HDPE = High Density Polyethelyne
PVC = Polyvinyl Chloride
DI = Ductile Iron
RCP = Reinforced Concrete Pipe
PVC gravity sewer pipe is SDR 35
SDR= Standard Dimension Ration
SDR= D_o/T
D_o=outer dia of pipe (in)
D_i=inner dia of pipe (in)
T=wall thickness (in)
A=(pi*(Do^2-Din^2))/4
D=density
V_m=volume of material
L=length
V_e=volume of excavation
V_c=volume of concrete
Weight of excavated earth = 90 pcf
Weight of pea gravel bedding= 1.3 ton/cy
Weight of Backfill = 1.6 ton/cy
Weight of Concrete = 150 pcf
Density of Steel = 490 pcf

TABLE A.14: COMPOSTING TOILET/GREYWATER SYSTEMS MATERIAL AND ENERGY SUMMARY

SYSTEM COMPONENT	SYSTEM/MAJOR COMPONENT LIFE EXPECTANCY	MATERIAL	ASSUMPTION	ESTIMATED ITEM WEIGHT INDIVIDUAL/ CUMULATIVE	TOTAL ESTIMATED 50-YR WEIGHT INDIVIDUAL/ CUMULATIVE	ANNUAL KWH INDIVIDUAL/ CUMULATIVE	TOTAL 50-YR KWH INDIVIDUAL/ CUMULATIVE
Primary Treatment: 83,000 Primary Units						43.8 kW-Hrs/yr/3,635,400 kW-hrs/year	2,190 kW-Hrs/181,770,000 kW-hrs
Primary Tank Excavation	50 years	Excavation		12,440 lbs./ 1,032,529,919 lbs.	12,440 lbs./ 1,032,529,919 lbs.		
Dual Compartment Primary Tank	50 years	Polyethylene	Snyder 300 Gallon Dominator Spherical Pump Tank	257lbs./ 21,331,000 lbs.	257lbs./ 21,331,000 lbs.		
Composting Unit Excavation	50 years	Excavation		58,620 lbs./ 4,840,560,000 lbs.	58,620 lbs./ 4,840,560,000 lbs.		
Composting Unit	50 years	Polyethylene	Pheonix Composting Unit, Model 201 (PF or R)	343 lbs./ 28,469,000 lbs.	343 lbs./ 28,469,000 lbs.		
Composting Unit	50 years	Polypropylene		7 lbs./ 581,000 lbs.	7 lbs./ 581,000 lbs.		
Composting Unit	50 years	Fiberglass		47 lbs./ 3,901,000 lbs.	47 lbs./ 3,901,000 lbs.		
Composting Unit	50 years	Nylon		7 lbs./ 581,000 lbs.	7 lbs./ 581,000 lbs.		
Composting Unit	50 years	Aluminum		3.5 lbs./ 290,500 lbs.	3.5 lbs./ 290,500 lbs.		
Composting Unit	50 years	Stainless Steel		3 lbs./ 249,000 lbs.	3 lbs./ 249,000 lbs.		
Composting Unit	50 years	Iron		4.5 lbs./ 373,500 lbs.	4.5 lbs./ 373,500 lbs.		
Composting Unit	50 years	Acrylonitrile-Butadiene-Styrene		2 lbs./ 166,000 lbs.	2 lbs./ 166,000 lbs.		
Composting Unit	50 years	Poly Vinyl Chloride		3 lbs./ 249,000 lbs.	3 lbs./ 249,000 lbs.		
Composting Unit Fan	5 years	Polyethylene & Steel	Pheonix Composting Unit, Model 201 (PF or R)	1.8 lbs. & 1.4 lbs./ 149,900 lbs. & 116,200 lbs.	18 lbs. and 14 lbs./1,494,000 lbs. & 1,162,000 lbs.		
Bulking Material	12 x/year	Wood Shavings		8 lbs./ 665,775 lbs.	4,812 lbs./399,396,000 lbs.		
Secondary Treatment (Constructed Wetland): 83,000 Primary Units							
Flexible Liner	50 years	HDPE	60 mm HDPE Liner	1,295 lbs./ 107,553 lbs.	1,295 lbs./ 107,553 lbs.		
Piping	50 years	DR 17 HDPE	4" diameter for all plumbing from the house to the wetland, 3" diameter for laterals	208 lbs./ 17,272,300 lbs.	208 lbs./ 17,272,300 lbs.		
Soil Excavation	50 years	Excavation		108,045 lbs./ 8,967,735,000 lbs.	108,045 lbs./ 8,967,735,000 lbs.		
Backfill (from excavation)	50 years	Backfill - from excavation	0.5'(h)x7'(w)x49'(l) + edges	57,053 lbs./ 4,753,399,000 lbs.	57,053 lbs./ 4,753,399,000 lbs.		
Gravel/Rock Infill	50 years	Rock Infill	2.5'(h)x5'(w)x47'(l)	52,875 lbs./ 4,388,625,000 lbs.	52,875 lbs./ 4,388,625,000 lbs.		
Soil Infill	50 years	Topsoil - from storage	0.5'(h)x5'(w)x47'(l)	11,750 lbs./ 975,250,000 lbs.	11,750 lbs./ 975,250,000 lbs.		
Plants	10 years	Wetland Plants (i.e. sedges)-not modeled	500 start plants=40 lbs; 1 plant/ft^2	20 lbs./ 1,553,760 lbs.	100 lbs./ 7,768,800 lbs.		
Post Secondary Treatment (Sand Filter): 83,000 Primary Units							
Sand Filter Excavation	50 years	Excavation		24,300 lbs./ 2,016,900,000	24,300 lbs./ 2,016,900,000		
Flexible Liner	50 years	HDPE	60 mm HDPE Liner, 0.3017 lbs/ft^2	65 lbs./ 5,395,000 lbs.	65 lbs./ 5,395,000 lbs.		
Sand	50 years	Sand	3'(h)x15'(w)x6'(l)	28,350 lbs./ 2,353,050,000 lbs.	28,350 lbs./ 2,353,050,000 lbs.		
Piping	50 years	DR 17 HDPE	2" HDPE from LM to Sand Filter and manifold, 1" diameter for laterals	64.5 lbs./ 5,354,129 lbs.	64.5 lbs./ 5,354,129 lbs.		

TABLE A.15: RECIRCULATING BIOFILTER MATERIAL AND ENERGY SUMMARY

SYSTEM COMPONENT	SYSTEM / MAJOR COMPONENT LIFE EXPECTANCY	MATERIAL	ASSUMPTION	ESTIMATED ITEM WEIGHT INDIVIDUAL/ CUMULATIVE	TOTAL ESTIMATED 50-YR WEIGHT INDIVIDUAL/ CUMULATIVE	ANNUAL KWH INDIVIDUAL/ CUMULATIVE	TOTAL 50-YR KWH INDIVIDUAL/ CUMULATIVE
Primary Treatment: 5,000 Primary Treatment Units							
Excavation	50 years	Excavation		306,900 lbs./ 1,534,500,000 lbs.	306,900 lbs./ 1,534,500,000 lbs.	4,210 kW-hrs/yr/21,050,000 kW-hr/yr	210,500 kW-hrs/1,052,500,000 kW-hrs
Dual Compartment Primary Tank	50 years	Fiber Glass	10,000 gallons, 8' Diameter	1,800 lbs./ 9,000,000 lbs.	1,800 lbs./ 9,000,000 lbs.		
Effluent Filter	50years	Polyethene/ Polypropylene	FT1236-54	25 lbs./ 125,000 lbs.	25 lbs./ 125,000 lbs.		
Filter Body	50 years	HDPE		15 lbs./ 75,000 lbs.	16 lbs./ 75,000 lbs.		
Pump	12 years	Steel	PF503012 (Dual Pumps)	110 lbs/ 550,000 lbs.	460 lbs./ 2,300,000 lbs.		
Pump Vault	50 years	Polyethene/ Polypropylene/HDPE	PVU84-2419	60 lbs./ 300,000 lbs.	60 lbs./ 300,000 lbs.		
Secondary Treatment (AdvanTex ® Treatment Pod): 5,000 Primary Treatment Units							
Excavation	50 years	Excavation		56,700 lbs./ 238,500,000 lbs.	56,700 lbs./ 238,500,000 lbs.		
Advantex Filter Holder	50 years	Fiber Glass		500 lbs./ 1,250,000 lbs.	500 lbs./ 1,250,000 lbs.		
Advantex Filter Treatment Media	50 years	Polyester		1,500 lbs./ 8,250,000 lbs.	1,500 lbs./ 8,250,000 lbs.		
Control Panel	25 years	HDPE		20 lbs./ 100,000 lbs.	40 lbs./ 200,000 lbs.		
Float Switch	5 years	HDPE		8 lbs/ 40,000 lbs.	80 lbs/ 400,000 lbs.		
Splice Boxes	50 years	HDPE		2 lbs./ 10,000 lbs.	3 lbs./ 10,000 lbs.		
Discharge Assembly	50 years	HDPE		7 lbs./ 35,000 lbs.	7 lbs./ 35,000 lbs.		
Recirculation Splitter Vlave	50 years	HDPE		25 lbs./ 62,500 lbs.	25 lbs./ 62,500 lbs.		
Pump Vault	50 years	Polyethene/ Polypropylene/HDPE	64" Biotube	60 lbs./ 300,000 lbs.	60 lbs./ 300,000 lbs.		
Pump	12 years	Stainless Steel	PF503012 (Dual Pumps)	110 lbs/ 550,000 lbs.	460 lbs./ 2,300,000 lbs.		

TABLE A.16: MBR SYSTEMS MATERIAL AND ENERGY SUMMARY

SYSTEM COMPONENT	SYSTEM/MAJOR COMPONENT LIFE EXPEC-TANCY	MATERIAL	ASSUMPTION	ESTIMATED ITEM WEIGHT INDIVIDUAL/ CUMULATIVE	TOTAL ESTIMATED 50-YR WEIGHT INDIVIDUAL/ CUMULATIVE	ANNUAL KWH INDIVIDUAL/ CUMULATIVE	TOTAL 50-YR KWH INDIVIDUAL/ CUMULATIVE
Pretreatment: 2,500 MBR							
Fine Screen	50 years	Steel		1,500 lbs/ 3,750,000 lbs.	1,500 lbs/ 750,000 lbs.	57,158 KW-hrs/yr/ 142,895,000 KW-hrs/yr	2,857,900 KW-hrs/ 7,144,750,000 KW-hrs
Secondary Treatment (MBR): 2,500 MBR							
Concrete Pad Excavation	50 years	Dirt	14' wide X 13' long X 0.83' tall	108,000 lbs./ 270,000,000 lbs.	108,000 lbs./ 270,000,000 lbs.		
Concrete Pad	50 years	Concrete	14' wide X 13' long X 0.83' tall	22,750 lbs./ 56,875,000 lbs.	22,750 lbs./ 56,875,000 lbs.		
Steel Container	50 years	Steel	12' wide X 11' long x 11.5' high	7,380 lbs./ 18,450,000 lbs.	7,380 lbs./ 18,450,000 lbs.		
Mixer	10 years	Steel	22 7 /8" propeller diameter	330 lbs./ 825,000 lbs.	1,650 lbs./ 4,125,000 lbs.		
Aeration System Piping	50 years	PVC	3" diameter, 50 LF of piping (WF)	71 lbs./ 177,500 lbs.	71 lbs./ 177,500 lbs.		
Aeration System Rubber Piping	50 years	Rubber - Silicon-based		300 lbs./ 750,000 lbs.	300 lbs./ 750,000 lbs.		
Pump	10 years	Steel		160 lbs./ 400,000 lbs.	800 lbs./ 2,000,000 lbs.		
MBR Module Steel Housing	50 years	Steel	WF Estimate	880 lbs./ 2,200,000 lbs.	830 lbs./ 2,075,000 lbs.		
MBR Module Membranes	10 years	PVDF (Polyvinylidene Fluoride) - Not modelled	3'(l)X2.5'(w)X6.9'(h)	50 lbs./ 125,000 lbs.	250 lbs./ 625,000 lbs.		
Recycle Pump	10 years	Steel		110 lbs/ 275,000 lbs.	550 lbs/ 1,375,000 lbs.		
Air Blower	15 years	Cast Iron	3 Air Blowers	235 lbs./ 587,500 lbs.	785 lbs./ 1,962,500 lbs.		
Controls/Portable Instruments	25 years	Polyester		25 lbs./ 62,500 lbs.	50 lbs./ 125,000 lbs.		
Chemicals	2/year	Sodium Hypochlorite		56 lbs./ 140,000 lbs.	5,600 lbs./ 14,000,000 lbs.		

TABLE A.17: CONSTRUCTED WETLAND MATERIAL AND ENERGY SUMMARY

SYSTEM COMPONENT	SYSTEM/MAJOR COMPONENT LIFE EXPECTANCY	MATERIAL	ASSUMPTION	ESTIMATED ITEM WEIGHT INDIVIDUAL/ CUMULATIVE	TOTAL ESTIMATED 50-YR WEIGHT INDIVIDUAL/ CUMULATIVE	ANNUAL KWH INDIVIDUAL/ CUMULATIVE	TOTAL 50-YR KWH INDIVIDUAL/ CUMULATIVE
Primary Treatment: 25 Constructed Wetlands						245,950 kW-Hr/yr/6,148,750 kW-Hr/yr	12,297,500 kW-Hr/307,437,500 kW-Hr
Screw Screen Compactor	50 Years	Steel		1,700 lbs./ 42,500 lbs.	1,700 lbs./ 42,500 lbs.		
Primary Tank and Channel Excavation (500,000 gallons)	50 Years	Excavation		7,321,900 lbs./ 183,047,500 lbs.	7,321,900 lbs./ 183,047,500 lbs.		
Primary Tank and Channel (500,000 gallons)	50 Years	Concrete		2,662,812lbs./ 66,570,300lbs.	2,662,812lbs./ 66,570,300lbs.		
Secondary Treatment (Constructed Wetland): 25 Constructed Wetlands							
Excavation (Stage 1 and 2 Wetland Cells)	50 years	Excavation		22,986,700 lbs./ 574,667,500 lbs.	22,986,700 lbs./ 574,667,500 lbs.		
Concrete Walls	50 years	Concrete	1,242 ft^3	218,700 lbs./ 5,467,500 lbs.	218,700 lbs./ 5,467,500 lbs.		
GeoTextile	50 years	Polyester	72,480 ft^2	4,261 lbs./ 106,525 lbs.	4,261 lbs./ 106,525 lbs.		
Flexible Liner	50 years	EPDM (Ethylene Propylene Diene Monomer)	72,480 ft^2	17,653 lbs./ 441,325 lbs.	17,653 lbs./ 441,325 lbs.		
Filter Media	50 years	Vitrified Slate or Shale		14,462,220 lbs./ 361,555,000 lbs.	14,462,220 lbs./ 361,555,000 lbs.		
Transition Media	50 years	Washed Rock		2,776,613 lbs./ 69,415,35 lbs.	2,776,613 lbs./ 69,415,35 lbs.		
Plants	10 years	Wetland Specific, Bare Root (not modeled)	38,400 Plants, 0.5 lbs each	25,312 lbs./ 632,800 lbs.	126,560 lbs./ 3,164,000 lbs.		
Recirculation Storage	50 years	Atlantis Raintanks-D (engineered plastic)	34,549 ft^2, 2.9 lbs./ft^2	132,095 lbs./ 3,302,375 lbs.	132,095 lbs./ 3,302,375 lbs.		
Pumps	10 years	Stainless Steel Housing and Impellers	Influent Dosing Pumps (2), Recirculation Pumps (10)	4,270 lbs./ 106,750 lbs.	21,350 lbs./ 533,750 lbs.		
Actuated Valves	50 years	PVC	10 Total to Drain Cells	198 lbs./ 4,950 lbs.	198 lbs./ 4,950 lbs.		
Actuated Valves	50 Years	Stainless Steel		402 lbs./ 10,050 lbs.	402 lbs./ 10,050 lbs.		
Level Sensor	10 years	Stainless Steel housing, polyurethane cord		180 lbs./ 4,500 lbs.	900 lbs./ 22,500 lbs.		
Level Sensor Basins and Overflow	10 years	Fiberglass		3,600 lbs./ 90,000 lbs.	18,000 lbs./ 450,000 lbs.		
Piping	50 years	HDPE	cell penetration and connection	32,888 lbs./ 822,188 lbs.	32,888 lbs./ 822,188 lbs.		

TABLE A.18: SUMMARY BILL OF MATERIALS FOR BASELINE CENTRALIZED TREATMENT

COMPONENT	ESTIMATED WEIGHT
Odor Control	
Activated Carbon	56,000 lbs.
Concrete Carbon Bed	129,000 lbs.
Steel Fans	N/I
Primary Screening	
Steel Bar Screens	5,513 lbs.
Aluminum Bar Screens	13,000 lbs.
Screen Presses	N/I
Cast Iron Blowers	850 lbs.
Septage Pumps	N/I
Grit Chambers	N/I
Chrome Iron Grit Pumps	1,700 lbs.
Grit Cyclones	
Steel	2,700 lbs.
Cast Iron	890 lbs.
Grit Classifiers	N/I
Washdown Area Pump	N/I
Primary Clarification	
Concrete Clarifiers	8,951,826 lbs.
Cast Iron Primary Sludge Pumps	770 lbs.
Cast Iron Primary Scum Pumps	385 lbs.
Primary Effluent Pumps	N/I
Secondary Treatment	
Concrete HPO Basins	8,135,880 lbs.
Concrete Secondary Clarifiers	23,980,023 lbs.
Cast Iron Return Activated Sludge Pumps	30,400 lbs.
Waste Activated Sludge Pumps	
Steel	110 lbs.
Cast Iron	370 lbs.
Pressure Tanks	N/I
Cast Iron Secondary Scum Pumps	770 lbs.
Blowers	N/I
Emergency Generator	
Aluminum	6,944 lbs.
Cast Iron	39,360 lbs.
Fuel Tanks	N/I

COMPONENT	ESTIMATED WEIGHT
Dewatering	
Steel Gravity Belt Thickener	15,400 lbs.
Sludge Storage	N/I
Thickening Blowers	
Aluminum	160 lbs.
Cast Iron	930 lbs.
Steel Sludge Dewatering Centrifuges	14,100 lbs.
Aluminum Centrifuge Feed Pumps	1,500 lbs.
Scum Storage	N/I
Scum Concentrator Feed Pumps	N/I
Steel Scum Macerator	396 lbs.
Steel Scum Concentrator	15,000 lbs.
Polymer System	
Bulk Polymer Storage	N/I
Polymer Hopper	N/I
Liquid Feed Pump	N/I
Transfer Pump	N/I
Mix Tank	N/I
Feed Tank	N/I
Feed Pumps Odor Control	N/I
Bulk Polymer	14 lbs./day/ton
Submersible Pump Stations:	
Raw Sewage Station Pumps	
Steel	1,050 lbs.
Chrome	8,400 lbs.
Cast Iron	1,050 lbs.
Cast Iron In-Plane Station Pumps	5,625 lbs.
Steel Dewatering Station Pump	9,705 lbs.

N/I: Materials not inventoried. All N/I materials assumed to be primarily concrete and steel and their weights extrapolated from inventoried materials.

TABLE A.19: CONSTRUCTED WETLAND CONVEYANCE MATERIAL SUMMARY

DIAMETER (in)	LENGTH (ft)	NUMBER OF MANHOLES	SIZE AND TYPE OF MANHOLES	DEPTH OF EXCAVATION (ft)	WIDTH OF TRENCH (ft)	VOLUME OF EXCAVATION (cf)	PEA GRAVEL BEDDING (cf)	BACKFILL (cf)	MATERIAL	PVC PIPE WEIGHT PER FOOT (lb/ft)	POUNDS OF PVC MATERIAL (lbs)
8	49,238	192	48" Type II	6.00	2.0	590,851	146,947	426,726	PVC	4.24	108,767
10	4,308	17	48" Type I	6.17	2.8	75,272	20,030	52,894	PVC	6.64	28,606
12	3,878	15	48" Type I	6.33	3.0	73,689	20,226	50,419	PVC	9.50	36,845
15	1,841	7	48" Type I	6.58	3.3	39,382	11,202	25,922	PVC	14.19	26,119
18	2,018	8	48" Type I	6.83	3.5	48,263	14,093	30,606	PVC	21.43	43,245
21	813	3	48" Type I	7.08	3.8	21,592	6,429	13,209	PVC	29.88	24,288
24	1,007	4	54" Type I	7.33	4.0	29,538	8,922	17,454	PVC	38.96	39,231
27	64	0	54" Type I	7.58	4.3	2,061	629	1,178	PVC	49.47	3,164
30	1,094	4	54" Type I	7.83	4.5	38,558	11,861	21,330	PVC	64.18	70,203
					TOTAL VOLUME (cf) =	22,980,155	6,008,453	15,993,444			
					TOTAL VOLUME (cy) =	851,117	222,535	592,350			
					TOTAL WEIGHT (lbs) =	2,068,213,909	578,591,769	1,895,519,283			12,011,713
					TOTAL WEIGHT (tons) =	1,034,107	289,296	947,760			6,006

TABLE A.20: RECIRCULATING BIOFILTER CONVEYANCE MATERIAL SUMMARY

DIAMETER (in)	LENGTH (ft)	NUMBER OF MANHOLES	SIZE AND TYPE OF MANHOLES	DEPTH OF EXCAVATION (ft)	WIDTH OF TRENCH (ft)	VOLUME OF EXCAVATION (cf)	PEA GRAVEL BEDDING (cf)	BACKFILL (cf)	MATERIAL	PVC PIPE WEIGHT PER FOOT (lb/ft)	POUNDS OF PVC MATERIAL (lbs)
8	500	1	48" Type II	6.00	2.0	6,000	1,492	4,333	PVC	4.24	2120
					TOTAL VOLUME (cf) =	30,000,000	7,461,111	21,666,667			
					TOTAL VOLUME (cy) =	1,111,111	276,337	802,469			
					TOTAL WEIGHT (lbs) =	2,700,000,000	718,477,366	2,567,901,235			10,600,000
					TOTAL WEIGHT (tons) =	1,350,000	359,239	1,283,951			5,300

TABLE A.21: MEMBRANE BIOREACTOR CONVEYANCE MATERIAL SUMMARY

DIAMETER (in)	LENGTH (ft)	NUMBER OF MANHOLES	SIZE AND TYPE OF MANHOLES	DEPTH OF EXCAVATION (ft)	WIDTH OF TRENCH (ft)	VOLUME OF EXCAVATION (cf)	PEA GRAVEL BEDDING (cf)	BACKFILL (cf)	MATERIAL	PVC PIPE WEIGHT PER FOOT (lb/ft)	POUNDS OF PVC MATERIAL (lbs)
8	1,000	2	48" Type II	6.00	2.0	12,000	2,984	8,667	PVC	4.24	4,240
					TOTAL VOLUME (cf) =	30,000,000	7,461,111	21,666,667			
					TOTAL VOLUME (cy) =	1,111,111	276,337	802,469			
					TOTAL WEIGHT (lbs) =	2,700,000,000	718,477,366	2,567,901,235			10,600,000
					TOTAL WEIGHT (tons) =	1,350,000	359,239	1,283,951			5,300

TABLE A.22: LIFE-CYCLE ANALYSIS GAPS AND LIMITATIONS

CENTRALIZED BASELINE
Model accounted for an estimated 60 percent of the Bill of Materials for the system.
Inventory for the model was adjusted to account for missing 40 percent assuming an inventory profile consistent with the characterized materials
Composting Toilet Scenario
Model accounted for more than 99.9 percent of the Bill of Materials for the system
No inventory was identified for Wetland Plants, which were not accounted for in the model
On-site excavation material was assumed to be used for backfill
Remaining excavation material was assumed to go to storage for reuse elsewhere
Topsoil was assumed to come from off-site storage, meaning there were no upstream impacts associated with its production
Constructed Wetland Scenario
Model accounted for more than 99.9 percent of the Bill of Materials for the system
No inventory was identified for Wetland Plants, which were not accounted for in the model
Atlantis Rain Tanks were assumed to be made of an engineered plastic, consistent with that suitable for use in underground storage tanks.
Recirculating Biofilter Scenario
Model accounted for 100 percent of the Bill of Materials for the system
Polyethylene/polypropylene blends were assumed to be 80/20 blends
Membrane Bioreactor Scenario
Model accounted for more than 99.5 percent of the Bill of Materials for the system
No inventory was identified for PVDF (polyvinylidene fluoride), which was not accounted for in the model
Rubber was modeled as Silicon-based rubber (SBR).

TABLE A. 23: TRANSPORTATION DISTANCES

MATERIAL	DISTANCE	% OF FULL LOAD
Metals		
Steel	2,400 miles	85%
Cast Iron	2,400 miles	85%
Aluminum	2,000 miles	85%
Plastics		
All plastics	2,000 miles	85%
Stone/Sand/Soil		
Slate	1,500 miles	85%
Stone, Aggregate	30 miles	85%
Sand/Soil	30 miles	85%
Concrete	60 miles	95%
Chemicals	2,000 miles	85%
Excavation Waste	30 miles	95%

APPENDIX B. LIFE-CYCLE ASSESSMENT FULL RESULTS

CONVEYANCE ANALYSIS

The following are the results of a life-cycle analysis of the conveyance portion of wastewater systems only (excluding treatment). The results are organized and presented in response to specific questions posed by the research team. These results reflect three modeling scenarios, including the current conveyance system used for the Baseline City (Baseline) as well as two alternative scenarios that contemplate the conveyance needed at alternative density scales.

Baseline – Analysis modeled after Baseline City's existing conveyance system (2 DU/A)
DS1 – Density Scenario 1, slightly more dense population (10 DU/A)
DS2 – Density Scenario 2, dense population (30 DU/A)

TABLE B.1: OVERALL LIFE-CYCLE IMPACTS OF CONVEYANCE SYSTEM (BY SCENARIO)

IMPACT CATEGORIES	BASELINE	DS1	% FROM BASELINE	DS2	% FROM BASELINE
Aquatic acidification [kg SO2-Eq.]	891,700	248,000	-72.2%	19,130	-97.9%
Aquatic Ecotoxicity [ton TEG Eq.]	364,800,000	96,720,000	-73.5%	2,801,000	-99.2%
Aquatic Eutrophication [kg PO4-Eq.]	4,747	1,452	-69.4%	257.5	-94.6%
Respiratory effects [kg PM2.5-Eq.]	148,400	44,450	-70.1%	7,432	-95.0%
Global Warming Air [kg CO_2-Eq.]	182,300,000	53,170,000	-70.8%	6,784,000	-96.3%
Ozone Depletion Air [kg CFC 11-Eq.]	4.187	1.365	-67.4%	0.3526	-91.6%
Smog Air [kg NOx-Eq.]	6.724	2.122	-68.4%	0.452	-93.3%

Impacts of Conveyance Per Mile- Results

Results of the baseline modeling divided by the distance in miles of the overall conveyance system for each scenario.

Total Miles of conveyance per scenario: Baseline – 315.5 miles
DS1 – 90.4 miles
DS2 – 41.2 miles

TABLE B.2: NORMALIZED LIFE-CYCLE IMPACTS PER MILE OF CONVEYANCE (BY SCENARIO)

IMPACT CATEGORIES	BASELINE	DS1	% FROM BASELINE	DS2	% FROM BASELINE
Aquatic acidification [kg SO2-Eq.]	2,826	2,745	-2.9%	463.9	-83.6%
Aquatic Ecotoxicity [Ton TEG Eq.]	1,156,000	1,070,000	-7.4%	67,990	-94.1%
Aquatic Eutrophication [kg PO4-Eq.]	15.05	16.07	6.8%	6.24	-58.5%
Respiratory effects [kg PM2.5-Eq.]	470.5	492.0	4.6%	180.2	-61.7%
Global Warming Air [kg CO_2-Equiv.]	578,000	588,500	1.8%	164,500	-71.5%
Ozone Depletion Air [kg CFC 11-Equiv.]	0.01327	.01511	13.8%	0.008549	-35.6%
Smog Air [kg NOx-Equiv.]	0.02132	0.02348	10.2%	0.01095	-48.6%

Pumping Energy Relative to the Embodied Energy of the System – Results

Results display the overall impacts associated with the operation of the conveyance system (i.e. pumping energy). Results were calculated by modeling the impacts associated with the entire system (baseline model) minus the contribution associated with the production of the energy consumed (found under the pumping station model).

Annual energy consumption per pump station:

Small Pump stations
448,250 kWh over 50 yr lifespan

Large Pump stations
11,721,200 kWh over 50 yr lifespan

TABLE B.3: PERCENT CONTRIBUTION TO OVERALL IMPACTS – OPERATING ENERGY

	BASELINE			DS1		
RESULTS	OVERALL	OPERATING	% CONT	OVERALL	OPERATING	% CONT
Acidification [kg SO2]	8.92E+05	7.79E+05	87.3	2.48E+05	2.02E+05	81.6
Aquatic Ecotoxicity [Ton TEG Eq.]	3.65E+08	3.45E+08	94.5	9.67E+07	8.96E+07	92.7
Eutrophication[kg PO4]	4.75E+03	3.08E+03	64.8	1.45E+03	8.00E+02	55.1
Respiratory [kg PM2.5]	1.48E+05	1.02E+05	69.0	4.44E+04	2.66E+04	59.9
Global Warming [kg CO_2]	1.82E+08	1.41E+08	77.3	5.32E+07	3.66E+07	68.9
Ozone Depletion [kg CFC 11]	4.19E+00	2.03E+00	48.4	1.36E+00	5.27E-01	38.6
Smog [kg NOx]	6.72E+00	3.78E+00	56.2	2.12E+00	9.82E-01	46.3

Pumping Stations Relative to the Overall Impacts of the System

Analysis assessed the impact of the entire pump station including materials and operating energy. Results were calculated by totaling all of the impacts associated with the pump stations and comparing them to the overall impacts of the entire conveyance system.

TABLE B.4: PERCENT CONTRIBUTION TO OVERALL IMPACTS – OPERATING ENERGY PUMP STATIONS

	BASELINE			DS1		
RESULTS	OVERALL	OPERATING	% CONT	OVERALL	OPERATING	% CONT
Acidification [kg SO2]	8.92E+05	7.79E+05	87.4	2.48E+05	2.03E+05	81.7
Aquatic Ecotoxicity [Ton TEG Eq.]	3.65E+08	3.46E+08	94.8	9.67E+07	8.98E+07	92.9
Eutrophication[kg PO4]	4.75E+03	3.11E+03	65.6	1.45E+03	8.09E+02	55.7
Respiratory [kg PM2.5]	1.48E+05	1.03E+05	69.4	4.44E+04	2.68E+04	60.2
Global Warming [kg CO_2]	1.82E+08	1.41E+08	77.6	5.32E+07	3.68E+07	69.1
Ozone Depletion [kg CFC 11]	4.19E+00	2.06E+00	49.1	1.36E+00	5.34E-01	39.1
Smog [kg NOx]	6.72E+00	3.82E+00	56.8	2.12E+00	9.92E-01	46.8

Impacts from Excavation

This analysis identifies and totals the impacts associated directly with excavation of the conveyance system. Impacts include operation of equipment and transportation of removed waste. Results were calculated by totaling the life-cycle impact contributions from both the excavation and hauling of waste associated with each component, and then comparing those total impacts to the overall impacts of the system. Results are expressed as a percent of overall life-cycle impacts.

TABLE B.5: PERCENT CONTRIBUTION OF EXCAVATION AND TRANSPORTATION OF WASTE TO OVERALL LIFE-CYCLE IMPACTS OF CONVEYANCE SCENARIOS

	BASELINE		DS1		DS2	
IMPACT CATEGORIES	EXCAVATION	TRANS	EXCAVATION	TRANS	EXCAVATION	TRANS
Aquatic acidification [kg SO2-Eq. to air]	0.12%	0.02%	0.16%	0.02%	0.92%	0.12%
Aquatic Eutrophication [kg PO4-Eq.]	0.33%	0	0.42%	0	1.03%	0
Respiratory effects [kg PM2.5-Eq. to air]	1.25%	2.90%	1.61%	3.80%	4.24%	9.87%
Global Warming Air [kg CO_2-Equiv.]	0.37%	1.77%	0.49%	2.38%	0.22%	1.04%
Ozone Depletion Air [kg CFC 11-Equiv.]	1.99%	0	2.35%	0	4.01%	0
Smog Air [kg NOx-Equiv.]	0.79%	1.40%	0.97%	1.73%	2.00%	3.54%

Impacts Associated with Piping

Results display the percentage of impacts associated with piping (including manholes) and pump stations (including operating energy). Results were calculated by modeling the impacts associated with the entire system (baseline model) and totaling the impacts associated with each category. Results are expressed as percentages of the total. Results for DS2 are excluded since there are no pumping stations in the scenario and the impacts from type of pipe are not the focus of this analysis.

TABLE B.6: PERCENT IMPACTS OF PIPING FOR SYSTEM – BASELINE

IMPACT CATEGORIES	PVC	RCP	DI	HDPE	MANHOLES	PUMP STATIONS
Aquatic acidification [kg SO2-Eq]	10.7%	0.4%	0.1%	0.3%	1.1%	87.4%
Aquatic Eutrophication [kg PO4-Eq]	15.9%	5.1%	0.7%	0.0%	12.7%	65.6%
Respiratory effects [kg PM2.5-Eq]	21.7%	2.0%	0.8%	0.4%	5.7%	69.4%
Global Warming Air [kg CO_2-Equiv.]	16.4%	1.6%	0.3%	0.4%	3.7%	77.6%
Ozone Depletion Air [kg CFC 11-Equiv.]	36.7%	4.2%	1.1%	0.3%	8.6%	49.1%
Smog Air [kg NOx-Equiv.]	25.5%	3.4%	1.7%	1.0%	11.7%	56.8%

TABLE B.7: PERCENT IMPACTS OF PIPING FOR SYSTEM – DS1

IMPACT CATEGORIES	PVC	RCP	DI	HDPE	MANHOLES	PUMP STATIONS
Aquatic acidification -[kg SO2-Eq.]	15.2%	1.0%	0.1%	1.0%	1.1%	81.7%
Aquatic Eutrophication [kg PO4-Eq.]	20.4%	11.7%	0.2%	0.1%	11.9%	55.7%
Respiratory effects -[kg PM2.5-Eq.]	28.1%	4.7%	0.3%	1.2%	5.4%	60.3%
Global Warming Air [kg CO_2-Equiv.]	21.9%	3.7%	0.1%	1.4%	3.7%	69.2%
Ozone Depletion Air [kg CFC 11-Equiv.]	41.1%	8.9%	0.3%	3.2%	7.5%	39.1%
Smog Air [kg NOx-Equiv.]	33.5%	7.5%	0.6%	1.0%	10.6%	46.8%

TABLE B.8: LCA IMPACTS OF TREATMENT SYSTEMS ONLY – ABSOLUTE VALUES

IMPACT	UNITS	CENTRALIZED BASELINE	COMP TOILETS	MBR	RECIRC BIOFILTER	WETLAND
Acidification	kg SO2-Eq.	2.30E+06	1.40E+06	4.10E+07	6.10E+06	1.80E+06
Aq. Ecotoxicity	kg TEG Eq.	1.00E+12	5.30E+11	1.80E+13	2.70E+12	7.90E+11
Eutrophication	kg PO4-Eq.	9.30E+03	5.80E+03	1.70E+05	2.50E+04	7.30E+03
Respiratory Effects	kg PM2.5-Eq.	3.10E+05	3.10E+05	5.40E+06	8.20E+05	2.90E+05
Global Warming	kg CO_2-Eq.	4.30E+08	3.40E+08	7.40E+09	1.10E+09	3.60E+08
Ozone Depletion	kg CFC 11-Eq.	6.20E+00	3.30E+01	1.10E+02	1.90E+01	9.70E+00
Smog Air	kg NOx-Eq.	1.40E+01	1.50E+01	2+00E+02	3.10E+01	1.20E+01

TABLE B.9: COMPARISON OF TREATMENT SYSTEMS ONLY IMPACTS TO CENTRALIZED BASELINE

IMPACT	UNITS	COMP TOILETS	MBR	RECIRC. BIOFILTER	WETLAND
Acidification	kg SO2-Eq.	-38%	1640%	160%	-22%
Aq. Ecotoxicity	Kg TEG Eq.	-49%	1645%	159%	-24%
Eutrophication	kg PO4-Eq.	-37%	1709%	166%	-22%
Respiratory Effects	kg PM2.5-Eq.	-1%	1649%	165%	-6%
Global Warming	kg CO_2-Eq.	-19%	1632%	164%	-15%
Ozone Depletion	kg CFC 11-Eq.	437%	1643%	203%	56%
Smog Air	kg NOx-Eq.	6%	1366%	126%	-13%

TABLE B.10: LCA IMPACTS OF ALL TREATMENT SYSTEMS + CONVEYANCE – ABSOLUTE VALUES

IMPACT	UNITS	CENTRALIZED BASELINE	COMP TOILETS	MBR	RECIRC. BIOFILTER	WETLAND
Acidification	kg SO2-Eq.	3.20E+06	1.40E+06	4.10E+07	6.10E+06	1.80E+06
Aq. Ecotoxicity	kg TEG Eq.	1.40E+12	5.30E+11	1.80E+13	2.70E+12	7.90E+11
Eutrophication	kg PO4-Eq.	1.40E+04	5.80E+03	1.70E+05	2.50E+04	7.30E+03
Respiratory Effects	kg PM2.5-Eq.	4.60E+05	3.10E+05	5.40E+06	8.20E+05	2.90E+05
Global Warming	kg CO_2-Eq.	6.10E+08	3.40E+08	7.40E+09	1.10E+09	3.70E+08
Ozone Depletion	kg CFC 11-Eq.	1.10E+01	3.30E+01	1.10E+02	1.90E+01	9.80E+00
Smog Air	kg NOx-Eq.	2.10E+01	1.50E+01	2+00E+02	3.10E+01	1.20E+01

TABLE B.11: TREATMENT + CONVEYANCE RELATIVE TO CENTRALIZED BASELINE-NEW

IMPACT	UNITS	COMP TOILETS	MBR	RECIRC BIOFILTER	WETLAND
Acidification	kg SO2-Eq.	-55%	1160%	88%	-43%
Aq. Ecotoxicity	Kg TEG Eq.	-62%	1190%	92%	-43%
Eutrophication	kg PO4-Eq.	-58%	1098%	76%	-48%
Respiratory Effects	kg PM2.5-Eq.	-33%	1083%	79%	-36%
Global Warming	kg CO_2-Eq	-44%	1113%	85%	-40%
Ozone Depletion	kg CFC 11-Eq	221%	942%	81%	-6%
Smog Air	kg NOx-Eq	-29%	887%	52%	-41%

TABLE B.12: MBR SENSITIVITY RESULTS – (TREATMENT + CONVEYANCE RELATIVE TO CENTRALIZED BASELINE)

IMPACT	CENTRALIZED BASELINE	MBR	MBR + CONVEYANCE (low)	MBR + CONVEYANCE (high)
Acidification	3.20E+06	1160%	453%	1444%
Ecotoxicity	1.40E+12	1190%	468%	1481%
Eutrophication	1.40E+04	1098%	456%	1357%
Respiratory Effects	4.60E+05	1083%	427%	1347%
Global Warming	6.10E+08	1113%	435%	1387%
Ozone Depletion	1.00E+01	942%	370%	1172%
Smog Air	2.10E+01	887%	349%	1104%

Low and High scenarios reflect range of values for energy consumption received from manufacturers of MBR technologies. All other BOM materials entries are identical to baseline MBR.

TABLE B.13: PERCENT CONTRIBUTION OF TREATMENT VERSUS CONVEYANCE

IMPACT	CENTRALIZED BASELINE	COMP TOILETS	MBR	RECIRC BIOFILTER	WETLAND
Acidification	72/28	100/0	100/0	100/0	99.8/0.2
Aq. Ecotoxicity	74/26	100/0	100/0	100/0	99.9/0.1
Eutrophication	66/34	100/0	100/0	100/0	99.3/0.7
Respiratory Effects	67/33	100/0	100/0	100/0	99.4/0.6
Global Warming	70/30	100/0	100/0	100/0	99.6/0.4
Ozone Depletion	58/42	100/0	100/0	100/0	99.2/0.8
Smog Air	67/33	100/0	100/0	100/0	99.2/0.8

TABLE B.14: PERCENT OF OVERALL TREATMENT IMPACTS DUE TO ENERGY

IMPACT	UNITS	CENTRALIZED BASELINE	COMP TOILETS	RECIRC BIOFILTER	MBR	WETLAND
Acidification	kg SO2-Eq.	99.80%	71.70%	98.30%	99.80%	95.70%
Aq. Ecotoxicity	kg TEG Eq.	99.80%	86.40%	98.70%	99.50%	97.60%
Eutrophication	kg PO4-Eq.	99.10%	69.90%	95.50%	95.10%	94.20%
Respiratory Effects	kg PM2.5-Eq.	99.10%	44.10%	95.90%	98.50%	78.70%
Global Warming	kg CO_2-Eq	99.00%	54.30%	96.10%	99.40%	86.40%
Ozone Depletion	kg CFC 11-Eq	97.80%	8.10%	82.80%	97.60%	46.40%
Smog Air	kg NOx-Eq	81.80%	34.10%	92.80%	96.90%	69.40%

TABLE B.15: PERCENT OVERALL IMPACTS DUE TO ENERGY - TREATMENT + CONVEYANCE

IMPACT	UNITS	CENTRALIZED BASELINE	COMP TOILETS	MBR	RECIRC BIOFILTER	WETLAND
Acidification	kg SO2-Eq.	96.4	71.7	99.8	98.3	95.7
Aq. Ecotoxicity	kg TEG Eq.	98.5	86.4	99.5	98.7	97.6
Eutrophication	kg PO4-Eq.	87.5	69.9	95.1	95.5	94.2
Respiratory Effects	kg PM2.5-Eq.	89.3	44.1	98.5	95.9	78.7
Global Warming	kg CO_2-Eq	92.6	54.3	99.4	96.1	86.4
Ozone Depletion	kg CFC 11-Eq	78	8.1	97.6	82.8	46.4
Smog Air	kg NOx-Eq	73.5	34.1	96.9	92.8	69.4

APPENDIX C. LIFE-CYCLE IMPACT CATEGORY METHODOLOGIES

Several key life-cycle impact category methodologies were used during the assessment of the environmental impacts of the wastewater treatment technologies in this report. A brief description of each and how the impact data are calculated is presented here.

TABLE C.1: IMPACT CATEGORIES

IMPACT CATEGORY	SOURCE	TYPE	UNITS/EQUIVALENTS
Aquatic acidification	IO2+ v2.1	Midpoint	kg SO2-Eq.
Aquatic Ecotoxicity	IO2+ v2.1	Midpoint	kg TEG-Eq
Aquatic Eutrophication	IO2+ v2.1	Midpoint	kg PO4-Eq.
Respiratory effects	IO2+ v2.1	Midpoint	kg PM2.5 Eq
Global Warming Air	Traci	Midpoint	kg CO_2-Eq
Ozone Depletion Air	Traci	Midpoint	kg CFC 11-Eq
Smog Air	Traci	Midpoint	kg NOx-Eq

Eutrophication

Eutrophication (nutrient enrichment) impacts to water are based on the identity and concentrations of eutrophication chemicals released to surface water after treatment. Equivalency factors for eutrophication have been developed assuming nitrogen (N) and phosphorus (P) are the two major limiting nutrients. Therefore, the partial equivalencies are based on the ratio of N to P in the average composition of algae (C106H263O110N16P) compared to the reference compound phosphate (PO4 3-) (Heijungs et al., 1992; Lindfors et al., 1995). If the wastewater stream is first sent to a publicly-owned treatment works (POTW), treatment is considered as a separate process, and the impact score would be based on releases from the POTW to surface waters. Impact characterization is based on eutrophication potentials (EP) and the inventory amount:

$$(ISEUTR)i = (EFEP \times AmtEC)i$$

where:

ISEUTR equals the impact score for regional water quality impacts from chemical i (kg phosphate equivalents) per functional unit;

EFEP equals the EP equivalency factor for chemical i (phosphate equivalents); and

AmtEC equals the inventory mass (kg) of chemical i per functional unit of eutrophication chemical in a wastewater stream released to surface water after any treatment, if applicable.

Global Warming Potential

The build-up of carbon dioxide (CO_2) and other greenhouse gases in the atmosphere generates a "greenhouse effect" of rising temperature and climate change. Global Warming Potential (GWP) refers to the warming, relative to CO_2, that chemicals contribute to this effect by trapping the Earth's heat. The impact scores for the effects of global warming and climate change are calculated using the mass of a global warming gas released to air, modified by a GWP equivalency factor. The GWP equivalency factor is an estimate of a chemical's atmospheric lifetime and radiative forcing that may contribute to global climate change compared to the reference chemical CO_2; therefore, GWPs are in units of CO_2 equivalents. GWPs having effects in the 100-year time horizon were used in this analysis. The equation to calculate the GWP impact score for an individual chemical is as follows:

$$(ISGW)i = (EFGWP \times AmtGG)i$$

where:

ISGW equals the global warming impact score for greenhouse gas chemical i (kg CO_2 equivalents) per functional unit;

EFGWP equals the GWP equivalency factor for greenhouse gas chemical i (CO_2 equivalents, 100-year time horizon); and

AmtGG equals the inventory amount of greenhouse gas chemical i released to air (kg) per functional unit.

Respiratory Effects caused by Air Particulate Impacts

Air particulate impacts refer to the release and build-up of particulate matter primarily from combustion processes. Impact scores are based on the amount released to the air of particulate matter (PM) with average aerodynamic diameter less than 2.5 micrometers (PM2.5), the size of particulate matter that is most damaging to the respiratory system. Air particulate releases may cause decreased respiratory capacity and may trigger respiratory distress in populations with current respiratory illness. Impact characterization is based on the inventory amount of particulates released to air. This loading impact score is calculated by:

$$IS_{PM} = Amt_{PM}$$

where:

IS_{PM} equals the impact score for particulate (kg $PM_{2.5}$) per functional unit; and

Amt_{PM} equals the inventory amount of particulate release ($PM_{2.5}$) to the air (kg) per functional unit.

Photochemical Smog Impacts

Photochemical oxidants are produced in the atmosphere from sunlight reacting with hydrocarbons and nitrogen oxides. At higher concentrations they may cause or aggravate health problems, plant toxicity and deterioration of certain materials. Photochemical oxidant creation potential (POCP) refers to the release of chemicals that contribute to this effect. The POCP is based on simulated trajectories of tropospheric ozone production both with and without volatile organic carbons (VOCs) present. The POCP is a measure of a specific chemical compared to the reference chemical ethene (Heijungs et al., 1992). Photochemical smog impacts are based on partial equivalency because some chemicals cannot be converted into POCP equivalency factors. For example, nitrogen oxides do not have a POCP; however, VOCs are assumed to be the limiting factor, and if VOCs are present there is a potential impact. Impact scores are based on the identity and amount of chemicals with POCP equivalency factors released to the air and the chemical-specific equivalency factor:

$$(IS_{POCP})_i = (EF_{POCP} \times Amt_{POC})_i$$

where:

IS_{POCP} equals the photochemical smog (POCP) impact score for chemical *i* (kg ethene equivalents) per functional unit;

EF_{POCP} equals the POCP equivalency factor for chemical *i* (ethene equivalents); and

Amt_{POC} equals the amount of photochemical smog-creating oxidant *i* released to the air (kg) per functional unit.

Acidification

Acidification impacts refer to the release of chemicals that may contribute to the formation of acid precipitation. Impact characterization is based on the amount of a chemical released to air that would cause acidification and the acidification potentials (AP) equivalency factor for that chemical. The AP equivalency factor is the number of hydrogen ions that can theoretically be formed per mass unit of the pollutant being released compared to sulfur dioxide (SO2) (Heijungs et al., 1992; Hauschild and Wenzel, 1997). The impact score is calculated by:

$$(ISAP)_i = (EFAP \times AmtAC)_i$$

where:

ISAP equals the impact score for acidification for chemical *i* (kg SO2 equivalents) per functional unit;

EFAP equals the AP equivalency factor for chemical *i* (SO2 equivalents); and

AmtAC equals the amount of acidification chemical *i* released to the air (kg) per functional unit.

Aquatic Ecotoxicity

Aquatic ecotoxicity refers to the release of potentially toxic substances and their impacts on fresh water ecosystems. Impact characterization is based on the amount of chemical released into air, water or soil that would contribute to increased toxicity in the receiving waters, along with the characterization factors (CF) for each chemical. The CF for each chemical is then expressed in terms of the reference chemical triethylene glycol (TEG) equivalents. The impact score is calculated by:

$$(ISAE)i = (CFAE \times AmtAE)i$$

where:

ISAE equals the impact score for aquatic ecotoxicity for chemical *i* (kg TEG equivalents) per functional unit;

CFAE equals the CF for chemical *i* (TEG equivalents); and

AmtAE equals the amount of aquatic ecotoxin chemical *i* released to the air, water or ground (kg) per functional unit.

Emissions into ocean can be considered as having no fresh water aquatic ecotoxicity. No specific CFs for ocean emissions are currently available. Aquatic ecotoxicity characterization factors for heavy metals only apply for metals emitted in dissolved form (ions).

Ozone Depletion

The stratospheric ozone layer filters out harmful ultraviolet radiation from the sun. Chemicals such as chlorofluorocarbons, if released to the atmosphere, may result in ozone-destroying chemical reactions. Stratospheric ozone depletion refers to the release of chemicals that may contribute to this effect. Impact scores are based on the identity and amount of ozone depleting chemicals released to air. Currently identified ozone depleting chemicals are those with ozone depletion potential (ODP), which measure the change in the ozone column in the equilibrium state of a substance compared to the reference chemical chlorofluorocarbon (CFC), CFC-11 (trichlorofluromethane) (Heijungs et al., 1992; CAAA, 1990). The individual chemical impact score for stratospheric ozone depletion is based on the ODP and inventory amount of the chemical:

$$(ISOD)i = (EFODP \times AmtODC)i$$

where:

ISOD equals the ozone depletion (OD) impact score for chemical *i* (kg CFC-11 equivalents) per functional unit;

EFODP equals the ODP equivalency factor for chemical *i* (CFC-11 equivalents); and

AmtODC equals the amount of ozone depleting chemical *i* released to air (kg) per functional unit.

APPENDIX D. PROJECT HIGHLIGHTS DESIGN TEAMS

Bertschi School Living Building Science Wing
Restorative Design Collaborative: KMD Architects / 2020 Engineering / GGLO / GeoEngineers / Quantum Consulting Engineers / Rushing / O'Brien and Company / Back To Nature Design LLC / Parsons Public Relations / Skanska

Bullitt Center
The Miller | Hull Partnership / 2020 Engineering / PAE Consulting Engineers / The Berger Partnership / Integrated Design Lab / Schuchart Construction Co. / The University of Washington's Integrated Design Lab

C. K. Choi Building: The Institute of Asian Research
Matsuzaki Wright Architects Inc. / Keen Engineering / BNIM Architects / Country West Construction, Ltd.

Dockside Green Development
Busby Perkins + Will / Stantec / PWL Landscape Architects / Farmer Constructors / Aqua-Tex / BuildGreen Consulting

IslandWood
Mithun / KEEN Engineering / 2020 Engineering / The Berger Partnership / Archemy Consulting

Omega Center for Sustainable Living
BNIM Architects / John Todd Ecological Design, Inc / Natural Systems International / Conservation Design Forum / Tipping Mar + associates / BGR Engineers / The Chazen Companies / Dave Sember Construction

Oregon Health and Science University: Center for center for Health and Healing
Gerding Edlen Development / GBD Architects / Interface Engineers / Renee Worme / Peterson Kolberg Associates / KPFF / Otak / Walker Macy / Hoffman Construction / Brightworks

Rocky Bay
Orcas Sewage Design

Sidwell Friends School
Kieran Timberlake Associates, LLP / Natural Systems International / Andropogon Associates

Tyson Living Learning Center
Hellmuth + Bicknese, Solutions AEC, Williams Creek Consulting, ASDG LLC, Bingman Construction

APPENDIX E. GLOSSARY OF TERMS

5-tray system – Special tray system designed to utilize composting worms in processing waste, usually comprised of five trays stacked on top of each other.
Acidification – The lowering of the pH in water due to chemical inputs or biochemical processes.
Activated sludge – A method of aerobic wastewater treatment wherein microbial flocs leaving a mixed aeration treatment tank are settled in a clarifier and concentrated as a sludge, followed by returning a high fraction to the aeration tank. This increases the concentration of microorganisms in the aeration treatment tank to more rapidly biodegrade the organic content of the wastewater.
Aerator – An apparatus that adds air to water.
Aerobic – A condition in which oxygen is present or required.
Anaerobic – A condition in which oxygen is not present or required.
Anoxic – A condition in which water lacks significant oxygen, but has aqueous nitrate-nitrogen.
Aquatic ecotoxicity – The effects of water-borne pollutants on the environment.
Bar screen – A stationary screen comprising longitudinal bars, spaced at intervals, onto which the material to be screened is fed at the upper end.
Biochemical oxygen demand (BOD) – The amount of oxygen used by microorganisms to stabilize a given volume of wastewater with decomposable organic matter under aerobic conditions.
Bill of materials – A specification of the materials authorized for production of a specific item.
Blackwater – Water containing human waste from toilets and urinals. Black water contains pathogens that must be neutralized before the water can be safely reused.
Carbon bed – A layer of carbon in a reservoir or tank, used to filter water or wastewater.
Carbon positive – A description for any item or event that takes more greenhouse gases out of the atmosphere than it emits.
Cast-in-place pipe (CIPP) – Cementitious mixture that is deposited as plastic concrete and hardens as a pipe.
Clean Water Act – The primary federal law in the United States governing water pollution.
Closed-loop water system – A water loop is defined to be "closed," for water treatment purposes, if the make-up rate is less than 10% of the system capacity per year.
Combined sewer overflow – An event that takes place, often with the aid of a control device, that allows for a combined stormwater and wastewater sewer to overflow into area waterways in order to prevent flooding.
Composting toilet – A non-water discharging toilet waste system designed to aerobically biodegrade human waste.
Constructed wetland – A system that mimics the processes of a natural wetland used to treat wastewater.
Conveyance – A means of transporting water or wastewater.
Daylighting – The exposing of streams currently running through culverts to a more natural setting.

Decentralized wastewater management – A system that provides collection, treatment and dispersal or reuse of wastewater from individual buildings or clusters of buildings at or near the location where the waste is generated. These types of systems may treat sewage on-site through natural and/or mechanical processes, or may utilize more distributed management systems to collect and treat waste at a neighborhood, district or small community scale.
Dewatering – The process of removing water from waste solids.
Disinfection – The destruction of pathogenic and other kinds of microorganisms by physical or chemical means.
Drainfield – The network of pipes in a septic system through which wastewater is dispersed into the soil.
Dry well – An underground storage and infiltration system used for stormwater.
Ductile iron (DI) – A type of iron used for water mains that generally has the properties of high strength, ductility and resistance to impact.
Earth berm – A bank of earth constructed for a specific purpose, generally water or land control.
Eco Machine – A wastewater system that uses aquatic plants and microorganisms to treat water, sometimes in a greenhouse.
Effluent – Liquid waste discharged from a processing facility.
Eutrophication – The accumulation of high enough concentrations of nutrients in a body of water to lead to excessive algae growth and depletion of oxygen levels in the water.
Evapotranspiration – The process by which water is transferred from the land to the atmosphere by evaporation from the soil and other surfaces and by transpiration from plants.
Exfiltration – Wastewater leaking from a sewer pipe into the surrounding soil.
Flocculate – Formation of small clumps of organisms in water.
Foam flush – The use of a mixture of compostable soap and water to moves waste down a composting toilet.
Global warming – An increase in the temperature of the air near the surface of the earth thought to be caused by human activities.
Gravity belt thickener – A machine used to drain water from sludge, thereby reducing the sludge volume.
Green building – A comprehensive process of design and construction that employs techniques to minimize adverse environmental impacts and reduce the energy consumption of a building.
Greywater – Wastewater stemming from non-fecal contaminated activities such as laundering clothes or bathing.
Grit – Small, loose, dense particles present in wastewater.
Grit cyclone – A system that separates the lighter substances of organics and excess water from the denser grit.
Grit washdown sump pump – A sump pump that removes grit after it settles in a tank.
Groundwater – Water held underground in saturated soil or in pores and crevices in rock.
High-density polyethylene (HDPE) – A polyethylene thermoplastic made from petroleum, used in some wastewater pipes.

High purity oxygen (HPO) – A gas that is 99.99 percent oxygen.
Humus – The organic component of soil, formed by the decomposition of leaves and other plant material by soil microorganisms.
Impact analysis – Any assessment in which the environmental impacts of a process, product or facility are determined.
Incinerating toilet – An independent unit that receives and incinerates waste into water and a clean ash.
Intermittent sand filter – A bed of sand with microbes to filter and treat measured intermittent doses of wastewater.
Life-cycle analysis – A tool that evaluates the environmental impacts of a product across its entire life-cycle.
Life-cycle inventory (LCI) – An accounting of the energy and waste associated with the creation of a new product through use and disposal.
Liquid scrubber system – A system that removes pollutants from a waste stream, generally gas, by running the gas through a stream of liquid.
Living Machine® – A trademark and brand name for a form of biological wastewater treatment designed to mimic the cleansing functions of wetlands, developed and marketed by Worrell Water Technologies.
Macerator – A pump that is constructed to empty holding tanks and grind waste down to small particle size.
Membrane bioreactor – A packaged activated-sludge system in which the secondary clarifier has been replaced with an ultra-filtration membrane with pores small enough to filter out bacteria, micro-organisms and other insoluble solids.
Nutrient cycle – A pathway by which a chemical element or molecule moves through the environment.
Night soil – Human excrement generally used for fertilizer.
Open-celled foam – Foam containing pores that are connected to each other and form an interconnected structure, such as soap.
Oscillatoria rubescens – A blue-green algae from the cyanobacterium phylum sometimes responsible for algae blooms.
Oxidative reaction – The process or result of oxidizing or being oxidized.
Ozone depletion – The reduction of the protective layer of ozone in the upper atmosphere by chemical pollution.
Passive system – A system that does not use external mechanical power.
Photochemical smog – Air pollution produced by the action of sunlight on hydrocarbons, nitrogen oxides and other pollutants.
Polymer hopper – A structure used for the storage of polyelectrolytes in the polymer system.
Polymer system – A system that uses polyelectrolytes to initiate flocculation in wastewater.
Polyvinyl chloride (PVC) – A chemically-resistant plastic often used in pipes.
Polyvinylidene fluoride – A thermoplastic fluoropolymer of high purity and resistance to solvents, acids and alkalis.
Primary clarification – A process in which the rate of flow of the raw wastewater is greatly reduced and solids are allowed to settle out.

Privy vault – A cistern filled with wastewater; synonymous with cesspool.
Reciprocating rake bar screen – a type of mechanical bar screen that simulates the movement of a person raking the bar screen.
Recirculating biofilter – A system of chambers with highly-porous materials that provide growth surface for an active microbial community to treat the water multiple times.
Redlist chemical – Referred to here as a list of chemicals deemed hazardous as defined by the Living Building Challenge Imperative 11.
Respiratory effects – Negative impacts on the action of breathing.
Screw conveyor – A device for moving loose materials that consists of a shaft with a broad, helically-wound blade rotating in a tube or trough.
Scum pump – A suction pump that removes the filmy layer of organic matter that rises to the surface of a wastewater tank.
Septage pump – A pump that removes the partially-treated waste stored in a septic tank.
Septic tank – A tank, typically underground, in which sewage is collected and allowed to settle and decompose through passive bacterial activity before draining to a leaching field.
Sodium hypochlorite – An unstable oxidizing salt (NaOCl) used as a bleaching agent and disinfectant.
Stormwater – Runoff from urban areas that is not absorbed into the ground but rather is conveyed to waterways by natural and man-made conduits and drains.
Suspended solids – Small particles of solid materials suspended in water that cause cloudiness or turbidity.
Thickening blower – A blower used in wastewater treatment to dewater the sludge.
Trapless ventilated urinal – A nonstandard urinal, missing the dipped section of pipe that always contains water, used in composting toilets.
Sludge cake pump – A pump that moves sludge that has been dewatered by a treatment process to a moisture content of 60-85%, depending on the type of sludge and manner of treatment.
Ultra-filtration membrane – A device that forces water under high pressure through a 0.1 micron membrane to catch small particles (including bacteria).
Utilidor – A utility corridor built underground or above ground to carry utility lines such as electricity, water and sewer.
Wastewater treatment –The process of removing or reducing hazards in water, typically including some or all of the following steps:
Primary treatment – A physical treatment process, with or without chemical assistance, in which some heavy metals are removed.
Secondary treatment – A process using biological treatment and sedimentation that removes dissolved and suspended solids ; such as biodegradable organics, volatile organics and some nitrogen and phosphorus.
Tertiary treatment – A process that may include filtration, membrane filtration, and detention in lagoons or wetlands, and is usually combined with coagulation, sedimentation, filtration and disinfection; it removes more nitrogen and phosphorus, dissolved solids and heavy metals.
Wet well – A tank containing a submersible pump for holding and pumping water or sewage.

APPENDIX F. REFERENCES

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APPENDIX G. RESEARCH PROJECT TEAM

CASCADIA GREEN BUILDING COUNCIL

Founded in 1999, Cascadia is a chapter of both the Canada and U.S. Green Building Councils and serves the green building movement in Alaska, British Columbia, Washington and Oregon. Cascadia's mission is to lead a transformation toward a built environment that is socially just, culturally rich and ecologically restorative. Through an extensive network of partners, Cascadia advocates for progressive policies at the local and state levels and provides valuable research to help decision makers make informed decisions for the health of their communities and the environment.

In 2009, Cascadia launched the International Living Building Institute. The Institute is dedicated to encouraging the creation of Living Buildings, Sites and Communities in countries around the world while inspiring, educating and motivating a global audience about the need for fundamental and transformative change.

ECOFORM

Ecoform is the leading technical analysis company in the United States that focuses on the environmental performance of companies and their products and processes. Founded in 2006, Ecoform takes pride in its ability to work with leading corporations across multiple industry sectors providing critical information that can be used to shape corporate policy. Through services such as Life-Cycle Assessment, Ecoform assists organizations with the tools necessary for lowering their environmental footprint, enhancing their market brand and public perception and often saving valuable financial resources.

2020 ENGINEERING

2020 ENGINEERING is at the forefront of research and design of more sustainable methods and systems that reduce material consumption and waste, restore and protect ecological systems and create and maintain healthy communities. Based in the Puget Sound region but working nationally, 2020 ENGINEERING has a track record of over 100 projects that have utilized sustainable and low-impact development methods at residential, commercial, educational and municipal scales. 2020 ENGINEERING has been a leader in promoting the Living Building Challenge and in designing water systems that support net zero water goals and innovative, on-site wastewater treatment and reuse.

Submission No: 008	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	John
Last name	Ascroft
Email	[redacted]
Street name and number	[redacted]
Suburb	[redacted]
Town/City	Christchurch
Postcode	8051
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat agree
Comment	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	Goals seem unrealistic. More provision for cycling and walking, less emphasis on shared public transport.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Somewhat agree
Comment	
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Agree
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	

Agree/disagree	Agree
Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat disagree
Comment	The central city is too car centric, and there are too many buses. The central city should be a walking and cycling area as much as possible. Heavy investment in public transport distorts the development choices and encourages sprawl. More cycle lanes would cost a fraction of the cost of PT and deliver significant benefits.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Somewhat agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	Less focus on motorised transport - private cars and buses - more on cycling and walking.
Attachments	

Submission No: 011	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Randal
Last name	Inch
Email	[redacted]
Street name and number	[redacted]
Suburb	[redacted]
Town/City	Rangiora
Postcode	[redacted]
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree.
Comment	I believe that further Greenfield land is required to the EAST of Rangiora to provide sufficient capacity for housing growth and to balance the Rangiora township. I support and encourage the fast tracking of changes to the Regional Policy Statement so the Waimakariri District Council (WDC) can consider this land for rezoning and thus provide the Council with sufficient land for housing and infrastructure development, which can be released and completed in a timely manner.
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Neither agree nor disagree
Comment	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	No comment
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	
Comment	No Comment
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	
Comment	No comment

Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Neither agree nor disagree
Comment	I believe, a better basis to assess demand on, is to reflect upon the significant growth that Rangiora has experienced since the Christchurch Earthquakes - which demonstrates high demand.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	
Comment	No comment
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	I strongly support the identification of further Greenfield areas which can easily be serviced with infrastructure. The areas that have been identified in Rangiora fall within the projected infrastructure boundary in the Regional Policy Statement. It is my understanding that this area has been flagged for growth since the initial proposal to establish the urban limit through Proposed Plan Change 1 in 2007. Removing the current constraints on development of the identified areas offers the most resourceful way for Council to meet its development capacity obligations.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	I support the areas selected for inclusion in the RPS as 'Future Development Areas' and support the fast tracking of any amendment necessary to that document to remove current constraints on developing those sights. I would encourage the Panel of members of the Greater Christchurch Partnership to consider the proposal to defer decisions on 'when future development areas' may be developed at the District Plan Review level carefully. I believe to defer these decisions to the District Plan Stage risks adding significant delays to the release of land, and thus may impact on the Councils abilities to meet their obligations under the National Policy Statement on Urban Development Capacity. I believe greater certainty for landowners and the community should be given careful consideration.
Attachments	

Submission No: 012	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Pat
Last name	McIntosh
Email	[redacted]
Street name and number	[redacted]
Suburb	[redacted]
Town/City	Christchurch
Postcode	[redacted]
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree.
Comment	This is very old fashioned thinking. We should be planning for sustainability and improved environments not growth. It does not make sense to promote encroaching on productive farmland to produce suburban sprawl. Satellite towns lead to increased travel costs (private and public) and reduced sense of community.
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree
Comment	See above. There is no need to encourage growth.
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	Rent to buy schemes, shared equity, new building of higher density housing on brownfield sites.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Somewhat agree
Comment	No need for additional centres.
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Neither agree nor disagree
Comment	

Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	
Comment	This is responsive rather than value led. Suggested growth is mostly related to immigration rather than indigenous population increase which is likely to reduce with time. Immigration levels are political y controlled and not likely in my view to continue at the current rate.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	I do not agree with the growth projections.
Attachments	

Submission No: 013	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Andrew
Last name	Long
Email	[redacted]
Street name and number	
Suburb	
Town/City	Christchurch
Postcode	
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree
Comment	There is no justification for doing so. These towns clearly do not have employment sufficient for their populations, as the 100000 vehicle trips per day shows. the plan includes very little in terms of additional business land or encouragement for businesses to locate there. the shortfall in housing predicted is premised on commuting to christchurch, not any demand from industry. it isn't sustainable in terms of the RMA or in any other way, including fossil fuel use, emissions, road network capacity. do you actually hate polar bears? 30000 more houses is a significant amount. PT uptake in these places is very low.
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat agree
Comment	agree in relation to the city. selwyn and waimak don't need any more housing, as above.
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	distribution of units within GC and in relation to shops/services, and urban design.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Agree
Comment	office space at the airport should be capped at currentl levels to encourage development in the city centre
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	

Agree/disagree	Somewhat disagree
Comment	as above, selwyn and waiak have a massive employment shortfall, resulting in 100000vpd into christchurch. there is evidently insufficient industrial or other activities on these districts.
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Do not agree
Comment	as above, 100000vpd into christchurch daily for work would suggest insufficient employment base in selwyn and waimak, so whay make it worse worth 30000 more houses. are you expecting taxpayers and ratepayers to pay for the lifestyle choices of selwyn and waimak residents.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat disagree
Comment	RT is fine but are ccc ratepayers going to bear the brunt of that cost? i don't see why they should when the benefits will largely be to selwyn and waimak commuters. also given low PT uptake, i'd suggest it won't be used and people will till commute from selwyn and waimak by car. transport within the city - phasing of traffic signals is a massive problem in the city. it seems they are phased to disrupt and slow traffic in peak hours to encourage use of bikes or PT and then they stay phased like that outside peak hours. uses more fuel, creates more emissions and slows bus trips.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Neither agree nor disagree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	selwyn and waimak seem to contain very few hazards, including appearing immune to sea level rise or tsunami. selwyn and wamak reisdents don't contribute to providing or operating costs of ccc assets.
Attachments	

Submission No: 014	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Michael
Last name	Steadman
Email	[redacted]
Street name and number	
Suburb	
Town/City	
Postcode	
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat disagree
Comment	Our soils must be protected. We don't have transport methods ready for this sort of growth; this must only be done once we have rapid transport in place, else Christchurch will be gridlocked as commuters drive in from all these satellite towns. Further, the air quality will be greatly diminished by many more cars on the road. Do what is done in Auckland and build medium density around mass transit centres, like Mt Eden station and New Lynn.
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	We need higher density housing.
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	Should be done in partnership with a separated rapid transport network - like Kiwibuild apartments along the future light rail corridor in Auckland.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Somewhat agree
Comment	
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Agree

Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Agree
Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	Absolutely agree. Christchurch has no hope of remaining a good city to live in if proper mass transit is not pursued. These proposals have been a long time coming and they must have business cases drawn up before greenfield development is permitted.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	The biggest point to make is that our soils are a finite resource. The class 1 and 2 soils must be protected - no more motorway or pavements over them. As the price of emissions increases there will be a massive incentive to move away from livestock and to vege farming - this can only be done with these high quality soils. Destroying the soils means removing any ability for lower carbon self-sustaining food production for Christchurch.
Attachments	

Submission No: 017	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Steve
Last name	Holland
Email	[redacted]
Street name and number	[redacted]
Suburb	[redacted]
Town/City	Christchurch
Postcode	[redacted]
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	Social housing should be spread across greater Christchurch and not grouped in any area. I don't want to see future slum areas.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Agree
Comment	
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Agree
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	

Agree/disagree	Agree
Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat agree
Comment	I want to see existing heavy rail used for commuters and tourists. I like the light rail to Halswell Prebbleton and Lincoln. We need to put aside transport corridors now and protect what exists. We need to plan for more public transport options and less reliance on cars we need to promote electric transport options privately and publicly.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	
Attachments	

Submission No: 029		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Cathy	
Last name	Campbell	
Email	[redacted]	
Street name and number		
Suburb		
Town/City		
Postcode		
I am completing this submission	On behalf of a group or organisation Role: Senior Resource Management Planner	Inovo Projects
Hearings		
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings	
Phone number		
Preferred location to be heard		
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Do not agree	
Comment	While on the face of things it would appear that there is land available within Christchurch City for green fields development, we are aware of a number of areas where to develop the land for residential are currently unsuitable from a geotechnical perspective. To enable them to be developed requires substantial earthworks which at times may mean that the area is not economically viable for residential development. Therefore, consider that additional green fields areas my be necessary within the City. We are also of the view that there may be a desire for growth within other townships, such as West Melton, which are within commuting distance of the City. Therefore in our view additional green fields developments may be required in areas such as West Melton	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat disagree	
Comment	The approach of requiring a diverse range of housing is supported. However, the approach used currently within the CRPS of requiring a density of 15 households /ha means that developers are unable to get a diversely of housing types and densities. This is because each development has to achieve the 15 households/ha it means that developments don't have a diverse range of housing types/sizes	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment		
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		

Agree/disagree	Neither agree nor disagree
Comment	We support the need for certain types of commercial activities to be located within the main town centres like office space and retail. However, some commercial activities may be better to be located outside these areas
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Neither agree nor disagree
Comment	The approach being used is based on 'best guesses' at this point in time. Events outside anyones control can/have changed how the City and surrounding area has developed and the pace of this development.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Neither agree nor disagree
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Neither agree nor disagree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	
Attachments	

Submission No: 032

SUBMISSION ON *DRAFT* OUR SPACE 2018-2048 - GREATER CHRISTCHURCH SETTLEMENT PATTERN UPDATE

TO:	Our Space Consultation Greater Christchurch Partnership PO Box 73012 Christchurch 8154 Via email: ourspace@greaterchristchurch.org.nz
SUBMISSION ON:	Our Space 2018-2048: Greater Christchurch Settlement Pattern Update – Draft for consultation
SUBMISSION BY:	Infinity Investment Group Holdings Limited
SUBMITTER ADDRESS:	
HEARINGS:	We do not wish to be heard at the hearings.

1. INTRODUCTION

1.1. This submission is made by Infinity Investment Group Holdings Limited (Infinity Group).

1.2. This submission provides feedback on the *draft* Our Space 2018-2048: Greater Christchurch Settlement Pattern Update ('Draft Strategy').

2. STATEMENT OF INTEREST

Background

2.1. Infinity Group is a property investment and development group based in Wanaka in the South Island of New Zealand. Founded in 1999 by Bob and Jen Robertson, the Group has grown into a well-respected New Zealand property developer.

2.2. The core business of the group is the master planning and development of residential community subdivisions and fully master planned towns.

2.3. Infinity Group has concentrated on high-end and affordable residential developments and master-planned towns. The key point of difference is the focus not just on selling sections, but on selling lifestyles - creating attractive and well-presented developments that protect and rejuvenate their natural environments and that provide residents with an array of lifestyle amenities.

2.4. Infinity Group takes a very long-term view of both its developments and its customer relationships. Part of the vision and culture of the Group is the desire to consistently meet customer expectations and deliver a product that creates not just satisfaction but delight. Key strengths are the company's innovative marketing and sales initiatives and a talented and dedicated team of people who foster a culture of excellence and continuous improvement.

Infinity Group Land Interests in Greater Christchurch

2.5. Infinity Group is currently undertaking two master-planned residential/commercial developments within Greater Christchurch, being the Yaldhurst Park development within Christchurch City and Ravenswood in the Waimakariri District.

2.6. Both developments are described below.

Yaldhurst Park, Christchurch

2.7. Located within established suburbs on over 28 hectares of land, Yaldhurst Park is a master-planned residential and commercial development with 254 freehold residential sections ranging in size from 100m² to 700m².

2.8. The development includes a 5-hectare retail/commercial precinct located within walking distance of all houses which will offer a range of cafes, restaurants, convenience outlets, and services such as multipurpose medical and childcare centres. The scale of the retail and commercial zone is made possible by Yaldhurst Park's proximity to the major arterial roads that service expanded retail catchments.

2.9. The neighbourhood zone offers the opportunity to plan and develop a mixed-density and mixed-use residential neighbourhood in an integrated and comprehensive way, allowing a flexible response to the treatment of the urban/rural interface.

2.10. Yaldhurst Park is conveniently located a short five-minute drive from Christchurch Airport, 15 minutes from Riccarton Mall, and is close to New Zealand's largest secondary school Burnside High. Connecting directly to Christchurch's new motorway system and arterial roads, you can be in any part of the city in a matter of minutes, or a world away in the country.

Ravenswood, North Canterbury

2.11. Located in the Waimakariri district, Ravenswood is approximately 25kms north of Christchurch, just north of Woodend and west of State Highway 1. Ravenswood is a new master-planned community, designed to offer family living at an affordable price with all the benefits of a thriving community.

2.12. Experience a semi-rural lifestyle - fresh country air, open spaces, green areas, neighbouring walkways and nearby golf course and beaches - with the convenience of a commercial centre offering a New World supermarket, BP service station and Wild Bean Cafe, McDonald's restaurant, and a wide range of other retailers within the development.

2.13. Ravenswood is a fully master-planned community with a total land area of 150ha. This includes 1,350 residential sections ranging in size from 310m² to 700+m² and plans for approximately 13 hectares of commercial land that includes a mix of retail and light industrial sites and a retail precinct.

2.14. This submission primarily focuses on the Ravenswood development in North Canterbury.

3. SUBMISSION

3.1. Infinity Group has reviewed the Draft Strategy and identified the following areas of concern.

Demand Based on Population Projection

3.2. We understand that the Draft Strategy is required to demonstrate that sufficient, feasible development capacity is available to support future housing and business growth.

3.3. This requirement is understood to originate from the National Policy Statement on Urban Development Capacity (NPS-UDC) which requires high growth councils to produce a 'future

development strategy' that shows there will be sufficient, feasible development capacity to support projected growth needs and demand.

3.4. Utilising Statistics NZ's medium population and household projection for Christchurch City and the medium-high projections for both Selwyn and Waimakariri, page 10 of the Draft Strategy details the projected demand for housing over the next 30 years.

3.5. Factoring in buffers required under UDS-NPS policies, the projected number of additional houses required to service the population of Greater Christchurch by 2048 is just under 87,000. Table 1 illustrates that the Waimakariri District will require up to 16,000 of these houses to accommodate Statistics NZ's growth projections. This consists of up to 6,300 houses in the medium term (2018-2028) and an additional 9,700 in the long term (2028-2048). Based on these figures, the Waimakariri District's share of the growth in Greater Christchurch is approximately 19.5% in the medium term and 18% in the long term.

3.6. In contrast, Page 19 of the Draft Strategy sets out the 'preferred' settlement pattern for Greater Christchurch made by the Greater Christchurch Partners. In this section of the Draft Strategy the population projections have been modified to provide more long-term growth for Christchurch City, while at the same time reducing the long-term growth for the Waimakariri District from 18% to 13%.

3.7. This equates to a significant under-supply of the projected number of houses required to support Statistic NZ's growth projections.

3.8. Based on our experience of building communities, we consider that if people want to live in a certain area, allocation of the housing supply should follow. It is clear from the projections that this is not being provided for under the 'preferred' approach. This has the potential to undermine current and future investment in both residential and business development across the Waimakariri District.

3.9. For these reasons, we request that the Strategy is altered to enable a more responsive, demand-based allocation of housing stock, at the very least, in accordance with the medium and long-term projections of Statistics NZ.

3.10. Additional implications of this are discussed in the following section.

Growth Issues for Greater Christchurch

3.11. Pages 15 and 16 of the Draft Strategy set out the key growth issues for Greater Christchurch.

3.12. Of particular relevance to our interests are:

- Meeting the current housing needs and preferences of for current and future residents;
- Recognising post-earthquake trends;
- Integrating land use and transport planning; and
- Fostering equitable approach to planning across communities.

3.13. Ravenswood is a new residential development, designed to offer family living at an affordable price with all the benefits of a thriving community.

3.14. Over the last six months we have seen a significant increase in demand for sections. Stage 1a at Ravenswood which consists of 93 sections is now fully sold and we only have 16 sections remaining for sale in Stage 1b out of 104 available sections. At the beginning of November 2018, we launched Stage 2 which consists of 139 sections and we already have 35 under contract.

3.15. Likewise, we have recently launched the first stage of Yaldhurst consisting of 45 sections and we already have 26 under contract.

3.16. The demand appears to be coming from first home buyers and people looking to downsize. Sections that are sized between 350-500m² seems to be the most popular section size. I believe this is mainly driven by affordability.

3.17. Further, our analysis and sales to date indicate that there is a strong demand for housing in close proximity to places of employment and lifestyle.

4. CLOSING COMMENTS

4.1. Overall, we are concerned that the preferred approach doesn't reflect the market reality.

4.2. People will always want to move to areas that they determine provide the best outcome for them and their families therefore there needs to be greater flexibility to allow the market to determine where people want to live.

4.3. On a personal note I believe Canterbury will experience a significant increase in demand for sections over the next 3-5 years. This will be driven by people relocating from North Island cities and the Central Lakes region where people will see that Canterbury provides a much better choice and lifestyle for their families. The main driver for this will be affordability as Canterbury has not had the significant price escalation that the rest of New Zealand has experienced due to the over-supply caused by the earthquakes. If you add to this a new CBD and roading infrastructure that will be completed over the same period, the demand for sections in the future may surprise everybody.

4.4. Land allocation should follow where demand exists and where people want to live.

Submission No: 034		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Geoff	
Last name	Marks	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	Rolleston	
Town/City		
Postcode		
I am completing this submission	For myself	
Hearings		
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings	
Phone number		
Preferred location to be heard		
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat agree	
Comment		
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	
Comment	Consederation need to be made for the development of "Tiny House Communities" as new houlsing type. This will provide much need boost for young people wanting to step onto the housing ladder.	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment	Consederation need to be made for the development of "Tiny House Communities" as new houlsing type. This will provide much need boost for young people wanting to step onto the housing ladder.	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Neither agree nor disagree	
Comment		
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*		
Agree/disagree	Neither agree nor disagree	
Comment		

Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Somewhat agree
Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	Consederation need to be made for the development of "Tiny House Communities" as new houlsing type. This will provide much need boost for young people wanting to step onto the housing ladder.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Neither agree nor disagree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	Consederation need to be made for the development of "Tiny House Communities" as new houlsing type. This will provide much need boost for young people wanting to step onto the housing ladder.
Attachments	

Submission No: 044		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Simon	
Last name	Britten	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Christchurch	
Postcode	[redacted]	
I am completing this submission	For myself	
Hearings		
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings	
Phone number		
Preferred location to be heard		
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	
Comment		
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	
Comment		
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment	A more creative and flexible approach to affordable housing, specifically a relaxation of the current compliance regime in relation to tiny houses etc (see response to q.9 for more comments on this).	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Agree	
Comment		
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*		
Agree/disagree	Neither agree nor disagree	
Comment		
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely		

changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Agree
Comment	
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	I would like to see ongoing significant investment into infrastructure that supports active transport modes and public transport, and a move away from the prioritisation of the (mostly) single-occupant motor vehicle.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	A number of the 'key factors' listed on p.11 of the consultation document (specifically: growth in single-person households; smaller average household sizes; decrease in home ownership; need for more affordable options) all align with a need for a more supportive compliance regime in relation to creative affordable solutions such as (but not limited to) tiny houses. It is disappointing that the Christchurch City Council amended the District Plan to add cost and complexity to such solutions, and an honest approach the the current situation would see 'District Plan rules' included as a barrier in the table on p.20.
Attachments	

Submission No: 045		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Tony	
Last name	Dale	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Christchurch	
Postcode	[redacted]	
I am completing this submission	For myself	
Hearings		
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings	
Phone number		
Preferred location to be heard		
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Do not agree	
Comment	Christchurch city currently has a housing surplus, and your predictions (to 2048!) for a large population increase are probably wrong. Don't waste highly productive agricultural land surrounding Christchurch - instead, please try and get more people back to the city, especially inside the four avenues (Bealey, Fitzgerald, Moorehouse and Rolleston).	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	
Comment	The intensification you desire has already been occurring in our own area, north of Riccarton Road to Matai Street, with the construction of town houses, small unit complexes for, eg: older residents, and so on. This has happened within the existing zoning and resource consent framework. So I suppose this is a success. But what are you going to do about the moribund city centre? You really need to find ways to encourage the construction of housing that attracts the population back inside the four avenues.	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment	Put this housing inside the four avenues. It is well known that a mixture of young families, older citizens and other social types living close together makes for a healthy community. Social/affordable housing should support such a community, as a strategy to revitalize the city centre.	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and		

town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Agree
Comment	You need to direct commercial development towards the city centre, especially.
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Agree
Comment	Eastern Christchurch, especially, still has many buildings standing that once housed thriving industrial enterprises, now defunct. It would be heartening indeed to see some of them converted back to industry from their current functions as art spaces, cafes and second-hand shops.
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Do not agree
Comment	Your projections of demographic changes out to 2048 are certainly wrong. A far less risky approach would be to plan now for changes out to 2030, and regard anything further out as a "blue skies" scenario.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree
Comment	Please don't encourage high population density around suburban centres while the city centre remains moribund. You need to concentrate on moving commerce and population back inside the four avenues.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	In fact you are not doing enough of this. It should be your highest priority.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	It's especially disappointing to see a continuing emphasis on supporting key activity centres in the suburbs. This is inappropriate while the centre of Christchurch continues to decline - something caused in large part by the growth of these suburban centres. I want our city centre to be a place I drive to, not drive through.
Attachments	

Submission No: 048	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Olly
Last name	Powell
Email	[redacted]
Street name and number	[redacted]
Suburb	[redacted]
Town/City	Christchurch
Postcode	[redacted]
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree
Comment	I would prefer the city was kept to a size I could bike across easily.
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	Anything to reduce car dependence is good.
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	Ensuring that rentals are up to a good standard of health and energy efficiency.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Agree
Comment	
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Neither agree nor disagree
Comment	
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Somewhat disagree

Comment	You are missing the bigger question. Why do we need Christchurch to be bigger? It is already a good size, and would be a less pleasant place with this growth. There is no guts here to ask the awkward question why new growth needs to be specifically in Christchurch, not in struggling smaller centres like Ashburton.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	I would prefer a plan that questions the need for Christchurch to grow at all, and looks for ways we could achieve the tricky result of both affordable housing without the endless growth predicted and assumed here. I realise this is more a thing for central government, but it is also my observation that governments of any nation in the world have proved an unlikely source of pragmatic and dignified leadership on this subject (regardless of political differences).
Attachments	

Submission No: 049

Daniel Hamilton
Tel: (
Emai

30 November 2018

Greater Christchurch Partnership
PO Box 73012
Christchurch 8154

Delivered via email to: ourspace@greaterchristchurch.org.nz

To whom it may concern,

TRANSPOWER FEEDBACK ON 'OUR SPACE 2018-2048: Greater Christchurch Settlement Pattern Update

Transpower New Zealand Limited (Transpower) appreciates the opportunity to make a submission on the Greater Christchurch Settlement Pattern Update. Transpower understands that there is a critical need to ensure sufficient developable land is available to meet housing and business demand in accordance with the National Policy Statement on Urban Development Capacity 2016 (NPSUDC).

Transpower is the State-Owned Enterprise that plans, builds, maintains and operates New Zealand's high voltage transmission network (the National Grid) which links generators to distribution companies and major industrial users. The National Grid comprises some 12,000 km of transmission lines and around 170 substations. There are a number of Transpower's high voltage transmission lines and substations within the Greater Christchurch area.

National Significance of the National Grid

The importance of Transpower's assets and function have been recognised at a national level through the Resource Management Act's (RMA) instruments of the National Policy Statement on Electricity Transmission 2008 (NPSET) and the Resource Management (National Environmental Standards for Electricity Transmission Activities) Regulations 2009 (NESETA).

NPSET Section 4 sets out that "*the matter of national significance to which this national policy statement applies is the need to operate, maintain, develop and upgrade the electricity transmission network*."

The objective of the NPSET is:

> "*To recognise the national significance of the electricity transmission network by facilitating the operation, maintenance and upgrade of the existing transmission network and the establishment of new transmission resources to meet the needs of present and future generations while:*
>
> - *managing the adverse environmental effects of the network; and*
> - *managing the adverse effects of other activities on the network*."

The NPSET recognises that unrestricted housing development under and near to the National Grid, can constrain the operation, maintenance, upgrade and development of the National Grid. Policy 11 of the NPSET protects the National Grid by requiring a buffer corridor within which it can be expected that housing (and other sensitive activities) will generally not be provided for in plans and/or given resource consent. Policy 10 of the NPSET requires decision-makers, to the extent reasonably possible, to manage activities to avoid reverse sensitivity effects on the National Grid and to ensure that operation, maintenance, upgrading and development of the National Grid is not compromised.

The rationale for these NPSET policies is that where housing is located too close to National Grid support structures, lines and substations it creates safety hazards, restricts Transpower's access for maintenance, upgrade and emergency repair work, and creates or contributes to reverse sensitivity impacts (for example where occupants complain about the noise of a line or substation or their visual effects).

Local authorities have been giving effect to the NPSET in their regional policy statements and regional and district plans since 2008. Environment Canterbury's Regional Policy Statement 2013 and the Christchurch City Council's Replacement District Plan have given effect to the NPSET. The Selwyn and Waimakariri District Plans have not yet given effect to the NPSET but both councils have been engaging constructively with Transpower as they work on their next generation district plans.

Despite the fact that the National Grid is infrastructure of national significance and recognised as such in the NPSET, the NPSUDC does not explicitly require local authorities to give effect to Policies 10 and 11 of the NPSET when releasing constraints on housing. However, Policy PB3(a) of the NPSUDC states:

> *"The assessment under policy PB1 shall estimate the sufficiency of development capacity provided by the relevant local authority plans and proposed and operative regional policy statements, and Long-Term Plans and Infrastructure Strategies prepared under the Local Government Act 2002, including:*

(a) *the cumulative effect of all zoning, objectives, policies, rules and overlays and existing designations in plans, and the effect this will have on opportunities for development being taken up."*

In this instance, the proposed future development areas are subject to provisions in the Canterbury Regional Policy Statement and district plans that directly affect the opportunities for development being taken up, in the form of the (existing and future) National Grid corridor provisions. The extent to which the requirements of Policy PB3(a) have been executed is not clear from the information contained in the Greater Christchurch Settlement Pattern Update document. Transpower's submission draws the Greater Christchurch Partnership's attention to this matter for its strategic planning and recommends changes to the text which confirm that the National Grid has been taken in to account as part of housing capacity assessments.

Transpower wishes to stress that it does not want to prevent development from occurring – but simply seeks that the assessments confirm and demonstrate that the National Grid has been taken in to account under Policy PB3(a). This will ultimately enable development that is designed in a way that takes the National Grid transmission lines, cable and substations in to account. There are numerous ways in which development can occur near transmission lines appropriately and safely and without compromising Transpower's requirements. Subdivision offers an opportunity to design a development to provide the buffer corridor required by the NPSET, and also to ensure allotments are of a sufficient size and alignment to allow buildings to be safely constructed. Failing to take the lines into account at appropriate stages can increase development costs, with redesign being necessary.

Transpower seeks the following changes to Our Space 2018-2048:

Specific relief sought		
Section / page	Relief	Reason
General comment	Update the document to acknowledge whether (or not) the requirements of Policy PB3(a) of the NPSUDC have been completed.	There are National Grid corridor provisions in the Christchurch Replacement District Plan, and Transpower is working closely with Waimakariri and Selwyn District Councils in relation to National Grid corridor provisions as those councils work towards their next generation district plan.

Specific relief sought		
Section / page	Relief	Reason
4. Our Challenges 4.1 Key growth issues for Greater Christchurch	Update to include the need to for urban growth and transport planning to be carefully integrated with infrastructure.	Figure 3 (on page 5) says infrastructure must be comprehensively integrated with land use planning, but the key growth issues for Greater Christchurch (pages 15 and 16) do not mention anything about the need for urban growth to be integrated with critical infrastructure, such as the National Grid.
Whole document	Update the maps in the document to show the location of the National Grid transmission lines and substations.	None of the maps in the document include the National Grid transmission lines or substations. Given that these are nationally significant assets (as recognised by the NPSET) and development in the vicinity of them must be carefully planned and managed, they should be included in the maps.

Should you require clarification of any matter, please contact me (03 590 6926) or via email daniel.hamilton@transpower.co.nz

Yours faithfully,



Daniel Hamilton
Environmental Regulatory Team Leader

Submission No: 062

Ourspace@greaterchristchruch.org.nz

Submission on Our Space 2018-2048: Greater Christchurch Settlement Pattern Update

Submitter name: Townsend Fields Limited
Address: 282 Durham Street North, level 5, Christchurch 8013
Email: steve@wakefieldservices.co.nz

No I do not wish to speak at the hearing, but I wish to be informed so I can attend

Preferred location to Speak at hearings (in 2019):
Christchurch City Rangiora

Contact number:

The National Policy Statement for Urban Development Capacity (NPS UDC) requires Councils to undertake a Capacity Assessment to estimate the demand for residential and business land to determine whether there is sufficient, feasible development capacity for growth needs of the District over the next 30 years (2018 – 2048). In undertaking this assessment, Council must take into account relevant Regional and District Plan provisions, the likely availability of development infrastructure, the current feasibility and the rate of uptake of capacity, along with the market response in relation to what has been built, where it has been built and at what price. The Our Space update released for consultation summarises the findings of the Capacity Assessment that has been undertaken.

This submission relates primarily to the Waimakariri District portion of the proposal.

The Market Economics report entitled "Waimakariri District Residential Feasibility 2018", dated 28 September 2018 and other various reports for Greater Christchurch and "Our Space" identifies that there is a shortage of sufficient feasible land in Waimakariri District to cater for the medium (2018-2028) and long term (2028-2048) housing development capacity scenarios in respect of Waimakariri District's proposed contribution of 15% capacity towards the long term growth of Greater Christchurch.

The Market Economics report summary states that the economic models undertaken show that most of the residential development capacity in the district's zoned areas 'greenfield priority areas' are likely to be become feasible within the coming 30 years. The report considers the current 1600 house capacity available in the District is sufficient for the short term, that 6,200 are required for the medium term (with 4,800 – 5,400 feasible capacity, with a shortfall of 1,400 houses) and that 15,600 are required for the long term (with a shortfall of 9,500 houses). The Market Economics report identifies that there will be 2-3 District Plan Reviews and ten Housing Development Capacity Assessments over the next 30 years to provide opportunity to re-zone additional land and re-evaluate housing sufficiency for the District.

The models used by Market Economics are based on certain assumptions. The model that tests feasibility, uses land that is currently "zoned in the Greater Christchurch within Waimakariri District and not yet subdivided (Greenfield land)". The second model tests the feasibility of a building on "infill, greenfield and subdivided land".

It is not clear whether land that is within a current Greenfield Priority Area (Map A – Chapter 6 of the Christchurch Regional Policy Statement) but is currently un-zoned (i.e. in South West Rangiora: Johns Road) has been considered in the figures used by Market Economics for Waimakariri when considering housing capacity calculations.

"Our Space" identifies that the projected shortfalls must be resolved by a combination of a change to the Canterbury Regional Policy Statement (CRPS) (Map A) to make provision for additional residential

development "Future Development Areas" within the existing Projected Infrastructure and subsequent changes to assess and potentially re-zone land through the Waimakariri District Plan as part of the District Plan Review. It is noted that if "Our Space" is adopted, then the proposed changes to the CRPS will occur in 2019 (next year) and that the District Plan review will continue this process from 2020 onwards, both of which are to facilitate Waimakariri District's ability to meet its required housing capacity target.

It is acknowledged that there is an expectation that some housing supply will come from the intensification of existing urban areas, and this will form part of the Waimakariri assessment for the District Plan review. However Market Economics[1] made the following observation of housing in the District: *"... the bulk of dwellings are single level standalone houses on freehold sites. There are a small number of attached houses, which are mainly single level units and some double level townhouses. There are no multilevel apartment blocks in the District. This is important as it shows that the types and nature of development which has been demanded in the past."*

The above suggests that re-zoning additional land to support the type of housing typically sought in Waimakariri District is likely to be the primary way to supply additional housing capacity to the local market in Waimakariri, rather than relying on township intensification, and housing typologies that are not common in the District.

Effectively, the proposed change to the CRPS and Map A identifies that all remaining rural land within Rangiora's current Projected Infrastructure Boundary (urban limit) as being a "Future Development Area", to which "Our Space" indicates that the District Plan process will seek to re-zone.
This is considered appropriate as it will enable the provision of infrastructure in a sequential manner to the residential new areas identified. It will also require Council to comprehensively address any existing constraints that relate to these sites.

As landowners of existing un-zoned (Rural) Greenfield Priority land on Johns Road Rangiora currently identified by the CRPS for future residential development it is the submission of Townsend Fields Limited that:

- That "Our Space" as proposed is supported and should be adopted.
- That the proposal to accommodate additional housing growth within the current Projected Infrastructure Boundary in Waimakariri District is supported.
- That the immediate changes proposed to the Canterbury Regional Policy Statement in 2019 for the revision of Map A and the inclusion of housing targets is supported.
- That using the imminent Waimakariri District Plan Review to re-zone additional land for residential use to meet the required housing targets for Waimakariri District is supported.
- However, it is submitted that the Waimakariri District Plan review should seek to re-zone existing un-zoned Greenfield Priority Residential land first ahead of any new "Future Development Areas" identified by "Our Space".

From: Townsend Fields Limited
Steve Wakefield
Director

[1] Waimakariri District Residential Feasibility, ME Consulting, 1.1.1 Residential Demand, Page 5

Submission No: 063

Ourspace@greaterchristchruch.org.nz

Submission on Our Space 2018-2048: Greater Christchurch Settlement Pattern Update

Submitter name: Carolina Homes Limited
Address: P.O. Box 945, West End, Christchurch 8140
Email: steve@wakefieldservices.co.nz

No I do not wish to speak at the hearing, but I wish to be informed so I can attend

Preferred location to Speak at hearings (in 2019):
Christchurch City Rangiora

Contact number:

The National Policy Statement for Urban Development Capacity (NPS UDC) requires Councils to undertake a Capacity Assessment to estimate the demand for residential and business land to determine whether there is sufficient, feasible development capacity for growth needs of the District over the next 30 years (2018 – 2048). In undertaking this assessment, Council must take into account relevant Regional and District Plan provisions, the likely availability of development infrastructure, the current feasibility and the rate of uptake of capacity, along with the market response in relation to what has been built, where it has been built and at what price. The Our Space update released for consultation summarises the findings of the Capacity Assessment that has been undertaken.

This submission relates primarily to the Waimakariri District portion of the proposal.

The Market Economics report entitled "Waimakariri District Residential Feasibility 2018", dated 28 September 2018 and other various reports for Greater Christchurch and "Our Space" identifies that there is a shortage of sufficient feasible land in Waimakariri District to cater for the medium (2018-2028) and long term (2028-2048) housing development capacity scenarios in respect of Waimakariri District's proposed contribution of 15% capacity towards the long term growth of Greater Christchurch.

The Market Economics report summary states that the economic models undertaken show that most of the residential development capacity in the district's zoned areas 'greenfield priority areas' are likely to be become feasible within the coming 30 years. The report considers the current 1600 house capacity available in the District is sufficient for the short term, that 6,200 are required for the medium term (with 4,800 – 5,400 feasible capacity, with a shortfall of 1,400 houses) and that 15,600 are required for the long term (with a shortfall of 9,500 houses). The Market Economics report identifies that there will be 2-3 District Plan Reviews and ten Housing Development Capacity Assessments over the next 30 years to provide opportunity to re-zone additional land and re-evaluate housing sufficiency for the District.

The models used by Market Economics are based on certain assumptions. The model that tests feasibility, uses land that is currently "zoned in the Greater Christchurch within Waimakariri District and not yet subdivided (Greenfield land)". The second model tests the feasibility of a building on "infill, greenfield and subdivided land".

It is not clear whether land that is within a current Greenfield Priority Area (Map A – Chapter 6 of the Christchurch Regional Policy Statement) but is currently un-zoned (i.e. in South West Rangiora: Johns Road) has been considered in the figures used by Market Economics for Waimakariri when considering housing capacity calculations.

"Our Space" identifies that the projected shortfalls must be resolved by a combination of a change to the Canterbury Regional Policy Statement (CRPS) (Map A) to make provision for additional residential

development "Future Development Areas" within the existing Projected Infrastructure and subsequent changes to assess and potentially re-zone land through the Waimakariri District Plan as part of the District Plan Review. It is noted that if "Our Space" is adopted, then the proposed changes to the CRPS will occur in 2019 (next year) and that the District Plan review will continue this process from 2020 onwards, both of which are to facilitate Waimakariri District's ability to meet its required housing capacity target.

It is acknowledged that there is an expectation that some housing supply will come from the intensification of existing urban areas, and this will form part of the Waimakariri assessment for the District Plan review. However Market Economics[1] made the following observation of housing in the District: *"... the bulk of dwellings are single level standalone houses on freehold sites. There are a small number of attached houses, which are mainly single level units and some double level townhouses. There are no multilevel apartment blocks in the District. This is important as it shows that the types and nature of development which has been demanded in the past."*

The above suggests that re-zoning additional land to support the type of housing typically sought in Waimakariri District is likely to be the primary way to supply additional housing capacity to the local market in Waimakariri, rather than relying on township intensification, and housing typologies that are not common in the District.

Effectively, the proposed change to the CRPS and Map A identifies that all remaining rural land within Rangiora's current Projected Infrastructure Boundary (urban limit) as being a "Future Development Area", to which "Our Space" indicates that the District Plan process will seek to re-zone.
This is considered appropriate as it will enable the provision of infrastructure in a sequential manner to the residential new areas identified. It will also require Council to comprehensively address any existing constraints that relate to these sites.

As landowners of existing un-zoned (Rural) Greenfield Priority land on Johns Road Rangiora currently identified by the CRPS for future residential development it is the submission of Carolina Homes Limited that:

- That "Our Space" as proposed is supported and should be adopted.
- That the proposal to accommodate additional housing growth within the current Projected Infrastructure Boundary in Waimakariri District is supported.
- That the immediate changes proposed to the Canterbury Regional Policy Statement in 2019 for the revision of Map A and the inclusion of housing targets is supported.
- That using the imminent Waimakariri District Plan Review to re-zone additional land for residential use to meet the required housing targets for Waimakariri District is supported.
- However, it is submitted that the Waimakariri District Plan review should seek to re-zone existing un-zoned Greenfield Priority Residential land first ahead of any new "Future Development Areas" identified by "Our Space".

From: Carolina Homes Limited
Steve Wakefield
Director

[1] Waimakariri District Residential Feasibility, ME Consulting, 1.1.1 Residential Demand, Page 5

Submission No: 068

CCBA Central City Business Association

Our Space consultation,
Greater Christchurch Partnership,
PO Box 73012,
Christchurch 8154

Dated: 30th November 2018

Re: Submission – Our Space 2018-2048: Greater Christchurch Settlement Pattern Update

The Central City Business Association is apposed to the proposed changes to the Greater Christchurch settlement plan as we believe it will seriously undermine the recovery of Christchurch and in particular the rebuild and revitalisation of greater Christchurch's Central City.

Greater Christchurch's Central City requires appropriate scale to create vibrancy and maintain its unique position as the Central City for the greater Christchurch area. Any proposed development that undermines that position we believe should not be supported.

The Central City Business Association would like it to be noted that we fully support the ChristchurchNZ / DCL submission to this review.

Regards

Paul Lonsdale
Manager
Central City Business Association

Submission No: 080	
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**	
Submitter details	
First name	Robert
Last name	Fleming
Email	[redacted]
Street name and number	[redacted]
Suburb	[redacted]
Town/City	Christchurch
Postcode	[redacted]
I am completing this submission	For myself
Hearings	
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings
Phone number	
Preferred location to be heard	
Questions	
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Do not agree
Comment	Christchurch City needs to be developed prior to the use of additional greenfield space outside the city boundaries. There is considerable brownfield space in Christchurch city which can be developed . The costs to do this will be less in the long term. The provision of better transport corridors and networks (particularly PT and cycling) within Christchurch City will be of benefit to all city residents , the capital cost can be spread across a greater ratepayer base. Greenfield development in Waimakiriri and Selwyn Districts requires infrastructure for a diluted population base, and also puts pressure in Christchurch City ratepayers to provide polluting and expensive transport accesss into the city. The need for quality amenities also spreads, again raising the cost and diluting the benefits . We should not be planning for a future which depends on the diminishing quantity and eventual quality of productive land. provision of transport corridors and amenities with Christchurch City will
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat agree
Comment	Providing there is quality public and active transport options I do not have any issues with increasing the population density of central Christchurch and some suburban areas. However it is imperative that cars loose the priority status that they have enjoyed over the last few decades. Rapid transit between regional Canterbury towns, combined with workable park and ride solutions must also be given priority. Not more motorway lanes. The recent redevelopment of Christchurch CBD shows that we can make our city more liveable- this must continue. Dormitory living must not be the only desirable option available.

Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	Agree. One way to reduce the cost of housing is to give priority to active and public transport options, so those who wish to, can purchase a home without the need for a vehicle to be stored with it. Sharing transport options are going to transform how we get around in the very near future. Future planning discussion such as this consultation MUST give high priority to consider the changes that are upon us.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Somewhat agree
Comment	There is rapid change happening. I think it is more important to consider where people are going to live, and how they will travel (or need to ..... working from home, internet retailing, 10 minute localities to jobs and services. We have seen in the Christchurch rebuild how much resistance to change there has been, particularly from retailers and traditional businesses such as car retailing. Get the people spaces right, commerce will eventually adapt.
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Somewhat agree
Comment	Better transport options to these industrial areas must be provided for
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Somewhat agree
Comment	Won't always get it right
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	I agree with the approach but the detail is sparse in the document. For instance , there is provision for a bypass around Woodend, that may or may not happen in the future. If the emphasis is placed more on developing Christchurch brownfield sights, expensive roading development may not be required in the future. We need to be a compact city, not a sprawling one. The reason people choose to move a way from the city is party because of traffic noise, pollution, congestion, which satellite town commuters contribute to. Focussing on better transport options within the city will reduce these issues, making it more desirable to live there. With less population growth in the satellite towns, the less vehicles we have entering the city each day, alleviating the problems that make people want to move out in the first place. So whilst there is a future motorway bypass envisaged there is no Cycleway network shown for the north east of the city, and very little cycle infrastructure to the northwest . There is no provision for better connecting routes between the 13 Cycleways planned and implemented so far. The uptake will be restricted without better inter connectivity. Public transport routes are in dire need of proper review and investment. These are what this planning needs to address as priority. The costs of improving PT services and better cycling infrastructure pale in comparison to the costs of road building and the outcomes are healthier, less polluting, carbon neutral. Transport other than single occupancy vehicles is less stressful, cheaper , and more sociable. This produces a happy and healthy city. The Netherlands and Scandinavia is testament to this.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable,	

cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Somewhat agree
Comment	Once again, the denser the population, the more cost effective it is to provide services. But the population must feel that their city is liveable, and desirable before feeling comfortable about sharing.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	Put people first, and forget the urban planning of the 20th century, particularly with regards to transport .
Attachments	

Submission No: 086		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Kieran	
Last name	Williamson	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	Christchurch	
Postcode	[redacted]	
I am completing this submission	For myself	
Hearings		
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings	
Phone number		
Preferred location to be heard		
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Do not agree	
Comment	Greenfield development in exurban areas such as Rolleston, Rangiora and Kaiapoi is unsustainable. The current pattern of exurban development has led to large numbers of people commuting using private cars between their houses in these areas and their work, study or shopping in central Christchurch. This results in many negative externalities such as increased CO2 and PM pollution, congestion and negative health impacts such as obesity. New Zealand's target under the Paris Agreement is to reduce greenhouse gas emissions by 30 per cent below 2005 levels by 2030 and to reduce greenhouse gas emissions by 50 per cent below 1990 levels by 2050. This will not be possible if we continue greenfield development in Selwyn and Waimakariri as proposed in 'Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update'. As Christchurch has a very low population density by international standards, I propose that we restrict all future development to the current Christchurch city limits and a large majority of new development should be multi unit dwellings such as terrace housing and apartment blocks. The development of single family detached homes should be discouraged. As a sidenote, I'm surprised that this plan only pays lip service to reducing our greenhouse gas emissions. 37 percent of carbon dioxide emissions in New Zealand were from road vehicles in 2015 and I believe land use is one of the most important modalities in achieving our commitments under the Paris Agreement. I would have expected reducing greenhouse gas emissions to be the most important factor considered in determining future land use.	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Agree	

Comment	I agree with this. Single family detached housing is the least sustainable form. We should aim for multi unit mixed use dwellings, close to shopping, work and public transport amenities. The vast majority of housing should be of this type.
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*	
Comment	I agree with the development of an action plan but have nothing further to contribute.
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*	
Agree/disagree	Neither agree nor disagree
Comment	I agree that large format retail serviced only by road corridors and suburban shopping mall development should not be allowed to develop in new areas. My opinion is that this kind of development should be not be allowed to expand in existing commercial centres either. However, restricting commercial development to existing centres means that people living in suburbs without sufficient amenities will have to continue to commute by private passenger vehicles. This results in negative externalities such as increased pollution, obesity and congestion. We should allow small scale retail and office developments in areas without sufficient existing amenities within walking distance. Roading around these new retail areas should be designed to accommodate and welcome pedestrians and cyclists. The best way to retain and increase the viability and vitality of existing commercial centers is not to restrict development in areas that need them but to increase the density of housing within the catchment areas of the existing commercial areas. Given the expected population growth this will be easy. We can achieve our goal by replacing existing old stock single family occupancy homes with multi unit dwellings and developing greenfield and other underutilised spaces within the existing city limits.
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*	
Agree/disagree	Neither agree nor disagree
Comment	Current industrial areas and areas identified for greenfield industrial development are not well serviced by transport links. Most of them rely on commuting by private car which is unsustainable given our Paris Agreement commitments. Priority should be given to increasing public transport access to industrial areas and new greenfield industrial areas shouldn't be developed unless they have frequent public transport access. Cooperation will be required with the central government in order to encourage use of public transport over private vehicles (a petrol tax on the negative externalities of private car use being used to subsidise public transport would be my preferred option).
Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Agree
Comment	I agree with your evidence base.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	I agree with this. Higher density areas bring people closer to amenities, reducing commute distances. Fewer private vehicles on the road reduces congestion and pollution. This combined with the reduced distance to amenities encourages walking and cycling, which further reduces

	pollution and improves public health. In addition, increased density results in public transport being more attractive and viable. Density should be increased in all areas within the current city limits, not just around key centres. All population growth in Greater Christchurch should be accommodated by increasing density within the city limits.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Agree
Comment	
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	
Attachments	

Submission No: 087

To whom it may concern,

I commend you for putting together the document 'Our Space 2018–2048'; it is very informative with information presented clearly. I am in support of the sentiments expressed by this update to the UDS.

As we all know, by far the greatest threat to our society is climate breakdown. I do not believe that the targets as set in the update are anywhere near ambitious enough to prevent further climate change. In fact, much of the development will only be supportable by auto-centric lifestyles. We need to move away from this, and we need to do that now. The prime objective should be to define high-capacity public transport corridors. High density should be placed alongside those corridors. Greenfield developments should only be permissible with good public transport provision from day one. This may be inefficient at first but should be part of the consent process, with costs born by developers. That in itself will dampen greenfield developments.

I appreciate that these thoughts are challenging but I believe that we need bold action to avert climate breakdown; more of the same won't do.

Regards,
Axel Wilke
Axel

Submission No: 088		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	COLIN	
Last name	EATON	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	[redacted]	
Town/City	CHCH	
Postcode	[redacted]	
I am completing this submission	For myself	
Hearings		
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings	
Phone number		
Preferred location to be heard		
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Do not agree	
Comment	Chch does not have the infra structure to support more growth. the drainage relies on two very small rivers running into a badly silted up estuary. Infill housing and large sudivisions like wigram will take the storm water system to breaking point. The sewage system has limited capacity, and we have/ are surendering all our good market garden land and orchards to housing. in time we will regreat these decisions.Greed is running our decision making.	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat agree	
Comment		
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment	Social housing does not mix well.	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Somewhat agree	
Comment		
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*		
Agree/disagree	Do not agree	
Comment	We need to revitalize all the vacant industrial land & buildings for lease before we go planning more industrial areas.	

Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Do not agree
Comment	The economy should not be the driver, we need a plan that shows we care for the future & city enviroment. at present ll decisions are based on business growth , tourism, hospitality etc which ultimately comes back to greed.
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Somewhat disagree
Comment	The transport network will only work if it is good & regular and private cars are baned fron the central city.
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Do not agree
Comment	The city has procrastinate for years and we are still at the mercy of our poor stormwater system. The most recent hoodwinking of the population was blaming the Flocton basin flooding on the earthquakes and purchasing houses along the Heathcote river instead of dredging it.
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	
Attachments	

Submission No: 090		
Greater Christchurch Partnership **Our Space 2018-2048 - Greater Christchurch Settlement Pattern Update** **-Received via online submission form-**		
Submitter details		
First name	Wayne	
Last name	Phillips	
Email	[redacted]	
Street name and number	[redacted]	
Suburb	Christchurch	
Town/City	Christchurch	
Postcode	[redacted]	
I am completing this submission	For myself	
Hearings		
Do you wish to speak to the hearings panel?	I do not wish to speak at the hearings	
Phone number		
Preferred location to be heard		
Questions		
Question 1: Our Space highlights there is significant capacity for new housing through redevelopment in Christchurch City but to accommodate housing growth in Selwyn and Waimakariri it identifies additional greenfield land around Rolleston, Rangiora and Kaiapoi. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat disagree	
Comment	The proposals show large areas of greenfields development in Rangiora and Rolleston that will lock in auto dependence for the lifetime of this plan. This is not a sustainable approach and the plan needs to address this	
Question 2: Our Space adopts the current planning framework that encourages a range of new housing types, especially in the central city, close to suburban centres within the City and around existing towns in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why?*		
Agree/disagree	Somewhat agree	
Comment	It is essential that planning takes place now to enable future residents of these towns to have options for transport other than private vehicles (autonomous vehicles are wishful thinking)	
Question 3: Our Space proposes to develop an action plan to increase the supply of social and affordable housing across Greater Christchurch and investigate with housing providers different models to make it easier for people to own their own home. *What elements should be included in this action plan?*		
Comment	Key worker housing for staff such as nurses, police officers, teachers should be encouraged	
Question 4: Our Space adopts the current planning framework that directs new commercial development (office and retail) to existing centres to retain their viability and vitality, especially the central city, suburban centres and town centres in Selwyn and Waimakariri. *Do you agree or disagree with this approach and why? What further measures would support such development?*		
Agree/disagree	Agree	
Comment	Accessible cities with reliable, sustainable links between them. This probably means dedicated rights of way	
Question 5: The Canterbury Regional Policy Statement and the District Plans for Christchurch City and Selwyn and Waimakariri Districts have already identified sufficient capacity for new industrial businesses. *Do you agree or disagree this is sufficient and in the right location and why?*		
Agree/disagree	Neither agree nor disagree	
Comment	No comment	

Question 6: The proposals in Our Space are informed by a Capacity Assessment that considers future demands for housing and business land, based on demographic changes and projections from Statistics New Zealand, and likely changes in our economy (including through business sector trends and impacts from technological change). *Do you agree or disagree with our evidence base and why?*	
Agree/disagree	Do not agree
Comment	Demographic changes post earthquake (shift from city to towns) was a shock, and these rates were very high. Basing projections on these high rates continuing for the next ~30 years is dangerous, and potentially self-serving by the selwyn/waimak councils
Question 7: Our Space promotes greater densities around key centres to increase accessibility to employment and services by walking, cycling and public transport. This aligns with recent transport proposals that signal more high frequency bus routes and an intention to deliver rapid transit along the northern and south-west transport corridors. *Do you agree or disagree with this approach and why?*	
Agree/disagree	Agree
Comment	I agree with the principle here, I disagree with the approach. This needs to be a priority, of acquiring land, ensuring rights of way are identified now and kept clear for when these routes are built. Councils need a way to fund this development, whether it's regional fuel taxes, congestion charges, or a targeted rate to capture the increases in land value
Question 8: Our Space aligns with broader infrastructure planning (including wastewater, water supply, stormwater, energy, telecommunications, community facilities, schools and healthcare) to help create sustainable, cohesive and connected communities. *Do you agree or disagree with this approach and why? What more could be done to integrate infrastructure planning?*	
Agree/disagree	Neither agree nor disagree
Comment	No comment
Question 9: What other points do you wish to make to inform the final Our Space 2018-2048: Greater Christchurch Settlement Pattern Update?	
Comment	This plan has some good ideas and appears to have taken note of the need for coordinated planning between the various councils. On the other hand, there are terrible decisions being made every day (one example is allowing Briscoes to build its own complex down the road from Northlands, with no walking link locking in need to drive). If the area is to achieve the goals of this report, being are going to need to be upset, and to be told the truth, and have the various mayors/councillors defend their decisions
Attachments	

Our Space 2018-2048 – Submissions
Schedule of Submitters who withdrew their submission

Submitter Number	Submitter/Presenter	Organisation
#85	Shona Growler	Pomeroys Round Table