

**BEFORE THE CHRISTCHURCH REPLACEMENT DISTRICT PLAN
HEARINGS PANEL**

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

AND the Christchurch Replacement District Plan

**STATEMENT OF EVIDENCE OF MATHEW IRVIN CLARK
ON BEHALF OF THE CROWN (SUBMITTER 495, 2387 and 3271)**

**PROPOSAL 21.12: SPECIFIC PURPOSE (BURWOOD LANDFILL AND
RESOURCE RECOVERY PARK) ZONE**

Dated the 24th day of November 2015

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1. INTRODUCTION

- 1.1 My name is Mathew Irvin Clark.
- 1.2 Since November 2002 I have been employed by Land Information New Zealand ("**LINZ**") as Manager, Pastoral. At LINZ I was responsible for the management of Crown-owned high country pastoral leasehold land and associated statutory processes.
- 1.3 In December 2011 I was seconded to the Canterbury Earthquake Recovery Authority ("**CERA**") as Manager, Land Recovery. In this role I was responsible for establishment and delivery of operational property management and land clearance functions for Crown-owned flat land in the residential red zone. For the purpose of this evidence all reference to the "residential red zone flat lands" includes the Waimakiriri and Christchurch (Brookland, Avon, New Brighton - Southshore) flat land areas unless otherwise stated. I am also familiar with the processes for land clearance of Crown-owned land in the Port Hills undertaken by CERA and work closely with the Manager, Residential Red Zone (Port Hills).
- 1.4 From October 2014 I have held the position of Manager, Residential Red Zone (Flat Lands). This role encompasses the land management, built structure clearance and land clearance functions on Crown-owned flat land in the residential red zone.
- 1.5 I have been involved in the scoping, planning and delivery of property clearance and land management functions for CERA since December 2011.

2. CODE OF CONDUCT

- 2.1 I confirm that I have read the Code of Conduct for expert witnesses as contained in the Environment Court's Practice Note 2014. I have complied with the practice note when preparing my written statement of evidence, and will do so when I give oral evidence before the hearings panel. While I am seconded to CERA, my employer, CERA and I recognise my overriding obligation to the Hearings Panel in presenting my evidence. CERA has agreed to me giving expert evidence on its behalf in accordance with my duties under the Code of Conduct.

- 2.2 The data, information, facts and assumptions I have considered in forming my opinions are set out in my evidence to follow. The reasons for the opinions expressed are also set out in the evidence to follow.
- 2.3 Unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

3. SCOPE

- 3.1 I have been engaged by the Crown, through CERA, to provide evidence in relation to:
- (a) earthquake waste produced from the residential red zone (flat land and Port Hills) demolitions to date;
 - (b) earthquake waste disposal requirements for the demolition of remaining built structures in the residential red zone (flat land and Port Hills); and
 - (c) the scope of land treatment and management activities on Crown-owned residential red zone flat land areas.
- 3.2 In preparing my evidence I have read the evidence, in these proceedings, of Ms Yozin, Crown planner, and draft evidence of Mr Gareth James for the Burwood Resource Recovery Park ("**BRRP**").

4. EXECUTIVE SUMMARY

Demolition waste to the BRRP and Burwood Landfill

- 4.1 To date approximately 330,000 tonnes of earthquake waste from the demolitions occurring on Crown-owned land in the residential red zone has been taken to the BRRP for processing and disposal.
- 4.2 The draft evidence of Mr James explains that, as at October 2015, BRRP had received approximately 700,000 tonnes of earthquake waste in total. Of this, approximately 110,000 tonnes have been recovered for reuse, 250,000 tonnes has been disposed of in the Burwood landfill, and approximately 340,000 tonnes remain in a stockpile for processing.¹

¹ Draft evidence of Mr Gareth James, dated 24 November 2015, paragraph 21.

- 4.3 Between now and December 2018 there will be 291 - 612 Crown-owned properties requiring demolition in the residential red zones (generating approximately 14,550 to 30,600 tonnes of earthquake waste).
- 4.4 The BRRP was established and the formally closed Burwood Landfill was re-opened after the 2011 earthquakes to exclusively accept earthquake waste as it was not cost effective or efficient to dispose of earthquake waste at Kate Valley due to the haulage distance from Christchurch (approximately 70km). The BRRP and Burwood Landfill perform an important earthquake recovery and rebuild role by enabling the efficient and effective storage, sorting and permanent disposal of earthquake waste. For this reason I support the continued use of the BRRP to process earthquake waste.

Land management of residential red zone flat lands

- 4.5 Land clearance and interim land management activities in the residential red zone flat lands are of broad scale agricultural nature and require the use of heavy machinery and industrial equipment not typically used in a residential environment.
- 4.6 After dwellings have been removed, residual structures are cleared, vegetation is rationalised and an appropriate land treatment is applied to restore the land to open space so it is safe and easy to maintain until decisions are made about future use.
- 4.7 I support these activities having permitted activity status in the residential red zone flat lands as it is, in my opinion, important to the residential red zones flat lands recovery that these activities occur with minimal restriction (with appropriate safeguards).

5. PROCESSING WASTE FROM THE RESIDENTIAL RED ZONES

Residential red zone flat lands

- 5.1 7,187 properties in the residential red zone flat lands have been red zoned for significant and extensive area wide land damage and eligible for a voluntary purchase offer from the Crown
- 5.2 The residential red zone flat lands encompasses approximately 636 hectares along the Avon River from the Avon loop to South New Brighton,

and also includes in Christchurch City parts of Southshore, Brooklands, and in Waimakariri District parts of Kaiapoi, Pines beach and Kairaki.

- 5.3 The 636 hectares also includes privately owned properties and Council land including road reserves, parks and other public amenities. These are not owned or managed by the Crown and are excluded from the scope of this evidence.
- 5.4 As at 16 November 2015:
- (a) 7,053 of the 7,187 eligible properties had been voluntarily acquired by the Crown encompassing approximately 482 hectares.
 - (b) 6,064 Crown-owned properties are in Christchurch City encompassing approximately 352 hectares, and 989 are in the Waimakariri District encompassing approximately 130 hectares.
 - (c) 7,019 (99%) of the 7,053 Crown-owned properties have had their dwellings and built structures cleared. (6,030 in Christchurch City and 988 in Waimakariri District.)
 - (d) 6,458 of the 7019 cleared properties were demolished and taken to BRRP for processing and disposal. Approximately 500 were relocated for restoration and 61 were existing vacant land; and
 - (e) 33 Crown-owned properties in Christchurch City and 1 in Waimakariri District have built structures still to be removed. This figure may increase up to 134 in total depending on the number of properties which accept the purchase offer under the Residential Red Zone Offer Recovery Plan, which expires 10 December 2015.
 - (f) Approximately 350 of the 482 hectares of Crown-owned land has had land clearance treatment completed, and is now fenced off as open space grassland. The remaining 132 hectares is primarily in the Christchurch City area.
- 5.5 Demolition of remaining built structures on existing Crown-owned properties and, any new properties under the Residential Red Zone Offer Recovery Plan, is forecast for completion by 30 June 2016, with all land fenced and converted to open space by 30 September 2016.

Port Hills residential red zone

- 5.6 684 properties in the Christchurch Port Hills have been red zoned due to life risk from rock roll, cliff collapse or inundation from rock fall, and landslide; and are eligible for a voluntary purchase offer from the Crown.
- 5.7 The Port Hills residential red zone encompass approximately 197 hectares and is geographically wide spread over more than 60 separate locations.
- 5.8 As at 16 November 2015:
- (a) 444 properties in the Port Hills have been voluntarily acquired by the Crown encompassing approximately 78 hectares;
 - (b) 187 (42%) of the 444 Crown-owned properties have had their dwellings and built structures cleared;
 - (c) 147 of the 187 cleared properties were demolished and taken to BRRP for processing and disposal and 40 were existing vacant land; and
 - (d) 257 Crown-owned properties have built structures still to be removed. This figure may increase up to 461 depending on the number of properties which accept the purchase offer under the Residential Red Zone Offer Recovery Plan, which expires 10 December 2015.
- 5.9 Demolition of the remaining built structures on Crown-owned residential red zone land in the Port Hills is forecast for completion by 31 December 2018.
- 5.10 Due to the wide spread geographic location, and geotechnical risks of Port Hills Crown-owned land, properties are generally managed as stand-alone sites as opposed to flat land areas which can be amalgamated for on-going management.

6. DEMOLITION ACTIVITIES

- 6.1 Over 7,200 Crown-owned residential dwellings have been cleared from the flat lands and Port Hills residential red zones since 2012 (6,218 in Christchurch City and 988 in the Waimakariri District) Approximately 6,600 of these were demolished and over 500 relocated, and 100 were existing vacant land.

- 6.2 Demolition of a typical sized (150m²) residential dwelling generates an average of approximately 150 tonnes of earthquake waste.
- 6.3 Up to 100 tonnes of this waste can be concrete or recyclable metals that are disposed of separately. The remaining 50 tonnes of earthquake waste must be disposed of at duly approved demolition waste facilities.
- 6.4 The BRRP was established and Burwood landfill reopened exclusively to accept post-earthquake demolition waste. The majority of earthquake waste goes to the BRRP where it can be sorted and the residual portion disposed of in the Burwood landfill.
- 6.5 Burwood is geographically close (within 5km - 10km) to the residential red zone and provides practical and cost effective resource recovery and disposal options for demolition waste.
- 6.6 While there are a number of smaller sites consented for processing and temporary storage of earthquake waste, the BRRP and Burwood Landfill is the only location in Christchurch city approved for storage, sorting, transfer and permanent disposal of land fill.
- 6.7 BRRP has been the only local Christchurch site that can manage the volume of waste generated by residential red zone demolitions.
- 6.8 An estimated 330,000 tonnes of earthquake waste from the demolitions occurring on Crown-owned land in the residential red zone has already been taken to BRRP for processing and disposal since 2012 when demolitions commenced.
- 6.9 A further 291 to 612 Crown-owned dwellings in the flat lands and Port Hills residential red zones will require demolition between now and December 2018, generating a further 14,550 to 30,600 tonnes of earthquake waste for disposal.
- 6.10 The actual number of future demolitions is subject to how many property owners accept the new Crown purchase offer under the Residential Red Zone Offer Recovery Plan, which expires 10 December 2015.

7. BURWOOD LANDFILL

- 7.1 Continuation of the BRRP and Burwood landfill to accept, process and dispose of residual earthquake waste is necessary to enable cost effective

demolition of remaining Crown-owned dwellings and other built structures in the residential red zones.

- 7.2 Due to the haulage distance, it would not be cost effective to use the alternative Kate Valley landfill for permanent disposal of earthquake waste from the residential red zones.
- 7.3 BRRP charge \$120 per tonne at the gate to dispose of "unsorted mixed earthquake waste". Transportation costs from the residential red zones are low given the close proximity, and are estimated at approximately \$10 per tonne.
- 7.4 Kate Valley landfill charge \$107.91 per tonne for "general waste disposal". However transportation costs from the residential red zone are high given the 70km distance, and are estimated at approximately \$60 per tonne. There are also additional costs for usage of specific bins and trucks.
- 7.5 The combined cost for transportation and disposal of earthquake waste at BRRP is approximately \$130 per tonne, compared to approximately \$270 per tonne Kate Valley.
- 7.6 I support the expansion of current waste disposal cells, if required, to allow for disposal of the remaining planned demolition activities.

8. LAND CLEARANCE TREATMENT AND INTERIM LAND MANAGEMENT (FLAT LANDS)

Land clearance treatment

- 8.1 The "Residential Red Zone Interim Land Clearance Treatment Methodology"² outlines the approach for the clearance and interim treatment of Crown-owned residential red zone flat land after built structures are removed.
- 8.2 Land clearance treatment involves removal of unwanted vegetation, retention of larger existing trees and significant vegetation and grassing and planting on Crown-owned land, in a manner that recognises the characteristics of the land and water bodies, and the location of existing built developments.
- 8.3 Land clearance treatment of existing Crown-owned land in the residential red zone flat lands is 72% complete. The remaining 28% is almost

² <http://cera.govt.nz/sites/default/files/common/residential-red-zone-land-clearance-report-29-july-2014.pdf>

exclusively in Christchurch City. This, plus any additional land purchased by the Crown as part of the latest Red Zone Recovery Offer Plan, will have land clearance treatment completed by 30 September 2016.

Interim land management

- 8.4 CERA has developed an "Interim Land Management Plan" for the management and maintenance of Crown-owned residential red zone flat land areas once all clearance and land treatment work has been completed. Refer to attached "Interim Treatment Area Category Plans".³
- 8.5 The plans provide guidance for environmental management for on-site treatment and maintenance works, including responsibilities, training, health and safety, and contingency responses. It identifies the framework of regulatory requirements, particularly in relation to the Biosecurity Act 1993 and the Resource Management Act 1991.
- 8.6 CERA is responsible for the interim management and physical maintenance works such as mowing and weed control on Crown-owned land.
- 8.7 The "Greater Christchurch Earthquake Recovery: Transition to Regeneration" Recovery Plan dated October 2015 - provides for Land Information New Zealand (LINZ) to take over responsibility for on-going maintenance and management responsibilities from 1 December 2015, until future use decisions are made.
- 8.8 Area wide interim land management activities will span across individual property boundaries and include grass mowing, weed and pest control, tree and vegetation maintenance, rubbish removal, maintenance of fences, monitoring properties and engagement with neighbours and residents to promote community reassurance.
- 8.9 Works may also include installation and management of barriers on public roads for temporary vehicle access restrictions to specific roads and other public areas in conjunction with the Christchurch City, and Waimakariri District Council.

9. FLAT LAND RECOVERY ZONE PROVISIONS

- 9.1 Given the extent of the areas involved, broad scale land clearance treatment and interim land management activities in the residential red zone

³ <http://cera.govt.nz/flat-land-residential-red-zone/crown-owned-land-management>

flat lands are of a rural or agricultural nature, and require the use of heavy machinery and industrial equipment not typically used in a residential environment.

- 9.2 Ongoing clearance, land management and other recovery activities (such as demolition, earthworks and flood protection) are required. These earthquake recovery activities need to occur as a permitted activity to ensure that the land can be efficiently cleared and managed without unreasonable delay and cost. I support these activities having permitted activity status as described in paragraph 4.7 above.



Mathew Irvin Clark

24 November 2015