BEFORE THE INDEPENDENT HEARING COMMISSIONERS IN CHRISTCHURCH

TE MAHERE Ā-ROHE I TŪTOHUA MŌ TE TĀONE O ŌTAUTAHI

IN THE MATTER OF	Resource Management Act 1991
AND	
IN THE MATTER	of the hearing of submissions on Plan Change 14 (Housing and Business Choice) to the Christchurch District Plan

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JOINT STATEMENT OF INFRASTRUCTURE EXPERTS

27 September 2023

INTRODUCTION

1. This joint witness statement relates to expert conferencing on the topic of **Infrastructure**.

2. The expert conferencing was held on **27 September 2023,** in person facilitated by **Don Turley.**

3. Attendees at the conference were:

   (a) **Michele McDonald,** for Christchurch City Council. **Michele** is the author of a statement of evidence dated 11 August 2023.

   (b) **Brian Norton,** for Christchurch City Council. **Brian** is the author of a statement of evidence dated 11 August 2023.

   (c) **Jessica Newlands,** for **Environment Canterbury**. Jessica is the author of a statement of evidence dated 20 September 2023.

   (d) **Matt Surman,** for **Environment Canterbury**. Matt is the author of a statement of evidence dated 20 September 2023.

   (e) **Stephany Pandrea,** for **Cashmere Park Ltd, Hartward Investment Trust, Robert Brown**. Stephany is the author of a statement of evidence dated 20 September 2023.

   (f) **Jamie Verstappen,** for **Danne Mora Limited and Milns Park Limited**. Jamie is the author of a statement of evidence dated 20 September 2023.

   (g) **Andrew McCarthy,** for **Andrew McCarthy**. Andrew is the author of a statement of evidence dated 20 September 2023.

CODE OF CONDUCT

4. This joint statement is prepared in accordance with sections 9.4 to 9.6 of the Environment Court Practice Note 2023.

5. We confirm that we have read the Environment Court Practice Note 2023 and agree to abide by it.

PURPOSE AND SCOPE OF CONFERENCING

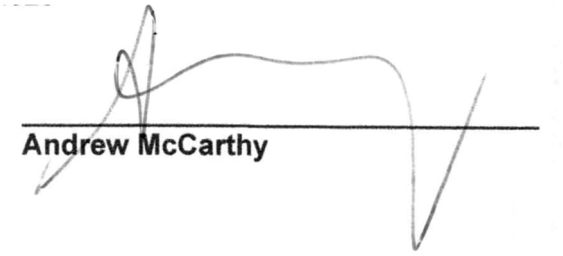
6. The purpose of conferencing was to identify, discuss, and highlight points of agreement and disagreement on **infrastructure** issues relevant to Plan Change 14.

7. Conferencing proceeded in line with the agenda agreed to by all relevant parties and experts and provided in advance of the conferencing.

8. All attendees reviewed the relevant s32 reports, evidence, s42A reports, other reports in advance of the conferencing.

9. **Annexure A** records the agreed issues, areas of disagreement and the reasons, along with any reservations.

Date: 5 October 2023



Andrew McCarthy

Michele McDonald

Jessica Newlands

Brian Norton

Stephany Pandrea

Matt Surman

Jamie Verstappen

ANNEXURE A – EXPERT CONFERENCING ON INFRASTRUCTURE

Participants: Michele McDonald (MM), Brian Norton (BN), Jessica Newlands (JN), Matt Surman (MS), Stephany Pandrea (SP), Jamie Verstappen (JV), Andrew McCarthy (AM)

Issue	Agreed Position	Disagreements or reservations, with reasons
Cashmere Park Limited, Hartward Investment Trust	Wastewater: Upgrades will be needed to the local pressure network or new local pressure connections will be required to service the development proposed in this submission. The existing DN300 wastewater pipe in Cashmere Road has sufficient capacity for increased flow from a local pressure sewer network as proposed through this submission. Water Supply: Additional assessments (modelling) will be required to confirm if there is sufficient capacity in Council's network. If found that there is not sufficient capacity, then an upgrade of the pipe network will be required at the developers cost. It is agreed that this proposed development cannot breach existing water supply zones. Stormwater: Part of land is currently zoned as rural. The boundary of the urban zone originally aligned with Hendersons basin / flood ponding contours at the time (RL 19.0m CDD). Method of mitigation for development is correct, however the modelling indicates widespread lowering	

	of ponding levels in Hendersons Basin, and the impact of this not yet known. Further, proposed ponding areas are in excess of 1m depth which is likely to impact on groundwater causing compensatory storage to be overstated. More work is needed. Eliot Sinclair will review groundwater levels, basin design and compensatory storage and edit the design as required. DHI will re-run the flood modelling to provide an updated flood report prior to the hearing.	BN cannot commit to agreement to rezone this land until flood modelling of effects have been fully analysed and considered. Stormwater: Widespread lowering of flood levels in Henderson's basin is due to the new basin provided to the northwest of the site.
Cashmere Park Stormwater		
Sizing of existing stormwater basins	The upper Heathcote catchment involves the active management of storage facilities. For greenfield development attenuation of the 2% AEP event with slow release over4 days will be required from all development. In future, optimisation of indiviudal basin release rates may be possible.	
Stormwater changes required in response to plan change	Run-off coefficients and design guidelines such as the Waterways Wetlands and Drainage guide will have to be revised in response to the plan change once impervious coverage associated with the new zones have been analysed.	

	Stormwater management plans will also need to be revised.	
Development contributions	Stormwater projects are being identified for flood relief in targeted areas. A shift will be required from funding of greenfield development to intensification. Development contributions are dependent on growth projects funded in the long-term plan.	
General infrastructure planning	Demand confirmation is specific for each development and drives the need for infrastructure upgrades.	
Danne Mora and Milns Park re North Halswell ODP High Density Residential Zoning as part of Plan Change 14 (up to 50 households per hectare)	Existing infrastructure is sized for RNN density and only recently established. This new infrastructure does not support high density re-zoning in North Halswell ODP area. Much of the land which is proposed to be upzoned has already been developed or consented for development. Increased stormwater storage will be required if upzoning occurs before development is complete and built out and it may not be feasible/cost effective to create additional storage to cater for the upzoning of areas within the North Halswell ODP to high density.	

Cost for upgrades triggered by development	Costs for upgrades to local 3 waters network infrastructure will be the responsibility of the particular developer that triggers the need for an upgrade. Long-term planning occurs in response to an agreed spatial development plan. Identification of Greenfield Development is done at this time and some provision is made for intensification. MDRS is significantly more than what was previously provided for intensification growth. The existing infrastructure was not designed for intensification as possible through the MDRS. Council infrastructure is not sized to service the underlying zoning, but rather on the demand projection at the time.	
On-site stormwater mitigation	More on-site attenuation may be required but this becomes a private responsibility and not easily managed in the long-term. Controls available may not be sufficient for certain rain events. Critical storm duration changes from catchment to catchment. In some cases, on-site attenuation does not mitigate all effects. On-site mitigation is not effective at managing peak flow rates for all areas and all rainfall events. Hill catchments with receiving environments with shorter critical duration may be more readily mitigated using on-site storage. It also has to be well maintained by individual property owners.	

	On-site mitigation cannot practically be used to mitigate for increased volumes of stormwater generated as a result of intensification. Would ECAN's high risk erosion layer be a starting point for a potential QM over hill land	
Stormwater water quality (sediment)	<u>The Port Hills are overlain by loess soil which is fine grained, dispersive and highly erodible.</u> <u>Discharge during construction</u>: Not possible to mitigate all sediment discharge from construction resulting from development in hill areas, especially infill development, due to the steep slopes and soil types that increase the risk when compared to flat Christchurch sites. Difficult also to manage this on the flats. In general risks are higher on hills because of topography and soil types. <u>Discharge after construction</u>: Stormwater runoff from increased impervious surface area on hill suburbs is difficult to collect and manage due to topographical constraints. Runoff may enter onto neighboring sites and therefore cause increased sediment discharge. Increased run-off from hills result in increased flows /higher peak flows into hill side outfalls and into waterways that increases the risk of erosion and scour.	

	Most existing CCC stormwater facilities are upstream of much of the residential Port Hills areas and therefore there is limited opportunity for mitigation of these effects (volume and quality) in a integrated manner. CCC compliance with comprehensive stormwater network consent is likely to be be negatively affected due to increase in discharges and quality of discharges.	
Halswell stormwater	Particularly sensitive because very flat and difficult to mitigate. Much of the Halswell River catchment is outside of the CCC district. Available mitigation is therefore largely external to Council jurisdiction area. Cumulative effects of increased stormwater and groundwater discharge volumes already impacting Halswell area and further intensification here will add to these affects. Stormwater management plan will need to put volume limits on Halswell, but this is yet to be finalised. It is simply not feasible to mitigate for large scale volume increases from developed areas without measures to increase soakage/evapotranspiration/water reuse. Intensification in Halswell area will result in adverse effects on ponding, flooding and base flow which cannot be adequately mitigated or avoided. Anything that reduces evaporation will add to the issues in this	(BN) Effects are not dissimilar to other areas within the city (e.g.; low lying rural land in Lower Styx basin and Marshlands). Significance of this in Halswell will have to be considered holistically.

	particular catchment. Solutions likely not practicable or cost-effective.	
Low public transport accessibility qualifying matter and the impact on Three Waters Infrastructure	Economy of scale – concentrating development to specific areas makes for more cost-effective and efficient infrastructure development and easier to mitigate against adverse environmental affects. Planning scenarios will remain pivotal for planning purposes.	(MM) Wastewater capacity constrained areas dose not mean that there is capacity elsewhere and cannot be used to motivate capacity for MDRS intensification.