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 LANDSCAPE AND ARBORICULTURE EXPERTS

PROPOSED TREE CANOPY COVER AND FINANCIAL CONTRIBUTION RULES

6 October 2023

INTRODUCTION

1. This joint witness statement relates to expert conferencing on the topic of **proposed Tree Canopy Cover and Financial Contribution rules**.

2. The expert conferencing was held on **25 September 2023,** in person and facilitated by **Philip Milne via a video-conference.**

3. Attendees at the conference were:

   (a) **Hilary Riordan,** for Christchurch City Council. **Ms Riordan** is the co-author of the s32 Financial Contributions technical report titled: "*Landscape Qualities of Trees and their Canopies within an Urban Landscape*"[1].

   (b) **Toby Chapman,** for Christchurch City Council. **Mr Chapman** is the author of a statement of evidence dated **11 August 2023**[2].

   (c) **Colin Meurk**, for Christchurch City Council. **Dr Meurk** is the author of Evidence of Colin Meurk, Biodiversity benefits of trees, refer to Appendix 4 to this report, and Section 32 Part 7, Appendix 2 - https://ccc.govt.nz/assets/Documents/The-Council/Plans-Strategies-Policies-Bylaws/Plans/district-plan/Proposedchanges/2023/PC14/Section-32-Appendices-1/PC14-HBC-Notification-Tree-coverFCs-S32-report-C-Meurk-evidence-Appx-2-with-Addendum-updated-15-2-23.PDF , and of a statement of evidence dated**11 August 2023**.

   (d) **Justin Morgenroth** for Christchurch City Council. **Mr Morgenroth** is the author of a research report[3] (**my report**) outlining the benefits of urban tree canopy cover in terms of ecosystem services that urban trees provide. My report was prepared to assist with the Section 32 assessment[4] of the proposed tree canopy/FC provisions in PC14, and of a statement of evidence dated **11 August 2023**.

[1] Additionally, on other PC14 topics Ms Riordan is the co-author of s32 technical report titled 'Significant Trees Qualifying Matters Technical Report' and author of statement of evidence dated 11 August 2023.
[2] Additionally, on other PC14 topics Mr Champan is the co-author of s32 technical report titled 'Significant Trees Qualifying Matters Technical Report'
[3] *Research Report: Urban trees and their ecosystem services.* Appendix 1 to the Financial Contributions and Tree Canopy Cover section 32 report: https://ccc.govt.nz/assets/Documents/The-Council/Plans-Strategies-Policies-Bylaws/Plans/district-plan/Proposed-changes/2023/PC14/Section-32-Appendices-1/PC14-Financial-Contributions-Appendix-1-J-Morgenroth-Urban-trees-and-their-ecosystem-services-Report-FINAL.pdf
[4] https://ccc.govt.nz/assets/Documents/The-Council/Plans-Strategies-Policies-Bylaws/Plans/district-plan/Proposed-changes/2023/PC14/Section-32/Plan-Change-14-HBC-NOTIFICATION-Section-32-Tree-canopy-Financial-Contributions-with-no-appendices.pdf

(e) **Sophie Strachan,** for **Kāinga Ora – Homes and Communities**. **Ms Strachan** 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 **proposed Tree Canopy Cover and Financial Contribution rules** issues relevant to Plan Change 14.

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

8. All attendees reviewed **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: 6 October 2023

Hilary Riordan

Toby Chapman

Sophie Strachan

Dr. Colin Meurk (authorised via email dated 9.10.2023)

Colin Meurk

Justin Morgenroth

ANNEXURE A – EXPERT CONFERENCING ON PROPOSED TREE CANOPY COVER AND FINANCIAL CONTRIBUTION RULES

Participants: Hilary Riordan (HR), Toby Chapman (TC), Colin Meurk (CM), Justin Morgenroth (JM), and Sophie Strachan (SS)

Issue	Agreed Position	Disagreements or reservations, with reasons
Vision/Outcomes 1. Retaining/having trees on/within residential sites is a positive outcome to the city's landscape and environment	• HR, TC, SS, CM, JM: Agree	
a. Provision for TCC on development sites is preferable over a financial contribution which would facilitate planting elsewhere.	• HR, TC, SS, CM, JM: Agree	
b. Having healthy trees on urban sites where they have adequate access to soil to grow to maturity with minimal conflicts	• HR, TC, SS, CM, JM, Agree	• SS: Reservation about whether urban development sites are capable of achieving these ideal conditions with minimal conflicts, particularly
20% TCC 2. The proposed TCC rules for development of residential sites are not line with the	• HR, SS Agree	• HR: Reasoning: To achieve the urban forest plan of 20% TCC across the city's residential zone, 20% TCC per new residential development site may not be going far enough to achieve this target but it would be unfair to place a higher TCC limit on new

Urban Forest Plan (**UFP**) target of 20% TCC.		residential developments achieve in order to simply balance out previous residentail development.
a. The current ODP residential development requirements for trees (RMD Built form standards: 14.5.2.2) provide for adequate TCC if they were to be included.	• HR & SS: Agree that ODP rules at 14.5.2.2 provides a clear requirement for compliance and ensures that trees are planted as part of new developments. The current built form standards do not ensure trees are planted in spaces to support them through to maturity. This can result in trees being planted in tight spaces within impervious surfaces, which does not allow the tree to grow to maturity and results in conflicts with built infrastructure.	• HR & TC: Disagree that this Built form standard is sufficient. • HR & TC: Reasoning: The built form standard (14.5.2.2); 1 tree per 250m^2 with at least 1 tree planted adjacent to the road boundary, does not necessarily equate to the desired TCC, as there is no requirement on tree size other than the initial planting size of the tree. There is no explicit rule around trees in the District Plan for large scale subdivisions (brownfield or greenfield). This is only addressed in matters of control or discretion around transport networks/roads. The tree canopy cover rule of 20% is required for new residential development to aid in meeting the target of the UFP. • SS: Given the ambiguities and limitations in the proposed rule,/ it's unclear whether existing development outcomes (consented) are consistent with the 20%TCC aspiration i.e., it's difficult to compare the outcomes of each set of rules.

b. Providing 20% TCC on residential sites has the potential to: i. create significant challenges for residential development, particularly in higher density zones, ii. affect access to sunlight and iii. compromise or conflict with pedestrian/vehicle access areas (note – particularly for higher density residential)		• HR: The site coverage by buildings in residential zones are not significantly increasing more then what already exists in the ODP RMD Zone (High-Density Residential Zone 50% (proposed built form standard 14.6.2.12); ODP RMD is 50% (Built form standards 14.5.2.4)). There will still be space to provide for 20% TCC, also recognising that TCC can overhang impervious surfaces (soil volume requirements are less than the TCC area). • HR & TC: the inclusion of soil volume and berm widths will reduce conflicts with pedestrian/vehicle access areas at the design stage. • SS: The proposed rule may result in a change to residential landscape and amenity outcomes, it is unclear to what extent and to what degree this will be adverse or beneficial (requires further testing). By allocating a percentage of site area to landscaping and soil area with minimum dimensions to support TCC, there is likely to be more compromise required by built form and access areas. Landscape areas commonly occupy setbacks and areas directly adjacent to buildings with access areas, outdoor living areas and utility areas consuming remaining open areas. Internal living areas of buildings are commonly on lower levels with associated outdoor areas (required for consent) These areas are also generally orientated for sunlight access and have landscape areas of greater dimensions, made up of

		both lawn and planting. These areas are likely to provide the best space for TCC, therefore potentially compromising sunlight access for living areas. • CM: my evidence points to creative design that accommodates trees in tight spaces such as courtyards enclosed by tall buildings and strategic positioning of deciduous and evergreen species - without compromising other amenities or at least compensating for them.
3. In practice, the proposed rules promote the use of large and very large trees, which then does not align with indigenous biodiversity goals in the UFP.		• HR & TC: Reasoning, a mix of sizes can be used to satisfy the 20%. Not having the rule specifying tree numbers , better enables for variations and for designers to consider a range of trees that best fits with the site and the development. • TC & JM: The use of a very large tree will provide many of the benefits sought to negate the impact of housing development. • TC: The added requirement for soil volume to be provided to support the tree will likely result in a mixture of tree sizes as the space required to support a single very large tree would be difficult to accommodate within many sites. • SS: It is currently 'easiest' to meet a 20% canopy area by using larger (and therefore less) tree species. This will be appealing cost-wise for developers and may encourage this outcome as an easy route for compliance. In principle, control

		mechanisms should provide a level playing field for a variety of tree size and form i.e. native species in particular. • CM: My earlier evidence lays out the high degree of importance that Biodiversity values should have in any rule-based requirements. This is to meet international obligations that address what has been described as The 6th Great Extinction. Aotearoa-NZ is at the forefront of both loss and fragmentation of natural habitat and of the native species that populate these ecosystems (through competition, browsing and predation), and also of efforts to restore the natural environment. Since CCC declared a climate and ecological emergency (2019) the City's rules should therefore aim to increase the tree cover and raise the indigenous proportion of (at least public) tree cover to a minimum of 50%. This is critical for native wildlife, for visibility and identity, and for cultural connectivity (see also the comments in middle column and below on having a progressive approach).
<u>Proposed Rule</u> **4.** The proposed TCC rule are ambiguous and complex making it difficult to determine compliance.	• HR, SS, TC: Agree that there are some changes that need to be made for practical application of the proposed rules. • Further changes are discussed below around Canopy Cover & Soil Volumes.	

a. Implementation and enforcement of the proposed rules is likely to be challenging, with a greater burden on both applicants and consent processing officers.	• HR & SS: Agree there will be a time element to assess compliance. • The rule as currently written will result in differences and disagreements in what complies. • HR, TC & SS: How to display the new requirements on a plan needs to be outlined in detail within the IDS to aid in assessments of compliance.	• SS: There are many components of the proposed rule which require a compliance check. There will be additional time adding new species to the IDS list, keeping the list up to date and completing valuations for financial contributions. Accordingly, obtaining compliance could require multiple queries to CCC during the consent application process plus a compliance check after the fact. • TC: the elements that are required to be checked can be simple and easily understood once additional details have been added to the IDS. Once the rule is in place and people become familiar with the requirements, it will be simple to process.
<u>Canopy Cover</u> *<u>Tree canopy cover (TCC):</u>* *<u>means the percentage of the land area of the urban area or development site covered by a canopy of a tree(s) at maturity.</u>* 5. Practical application of the proposed rule on a site scale presents several challenges.	This is further unpacked below:	
a. The rule relies on the tree species list in the	• HR, TC, SS: Agree that having reference to one source of data for tree classification would be beneficial.	• SS: Reservation that there is a significant burden of responsibility here for CCC to ensure the IDS

Councils Infrastructure Design Standards (IDS)	• The IDS tree species list needs to be robust. The IDS list which classifies species into small, medium, large or very large is currently insufficient. (Many species are not included, data incorrect, data missing) • The advice note under 6.10A.4.2.1.a.ii. which enables an application to be made to add trees at the discretion of the Council arborist should be connected to a visible process. • TC, CM: This can be remedied relatively easily for especially indigenous tree species, while avoiding promotion of potential biosecurity threats among exotics (both now and under climate change scenarios).	planting list is accurate and live (continual updates) in order to be effective. • TC: The information on tree size varies between nurseries, therefore CCC would need to provide its own list.
b. The TCC is calculated at maturity of a tree.	• HR, TC & SS Agree in principle	• SS: Concerned about how mature canopy size determined/agreed (but would be valuable data to have). It is common landscape architectural practice of using widely available nursery data for tree spread when preparing landscape plans and selecting plants. • TC the nurseries don't reflect a trees true size at maturity and more commonly base their sizes on 10 years. It is important for the longevity of the tree and protection of the space surrounding the tree that designs reflect a tree's mature size.

c. Grouping trees into four size classes	• • TC SS, & HR: Using tree size classes would remove the need to select a species at resource consent stage and therefore simplify the process. The benefit of having tree size classes is it provides flexibility for tree species to be altered throughout the development without requireing a change to any consent conditions as long as those changes are still aligned with the original size classes.	• SS &TC: concerned the classification is limiting – it does not take tree form into consideration. • TC: The list should be updated to reflect tree shapes. Acknowledges that the list needs to be robust and also have a simple process for new trees to be added or information to be updated. • SS: The current classification system uses a calculation of averages to determine a very specific outcome. Given the financial repercussions for non-compliance the bluntness of this tool should be addressed. • HR: Acknowledges that this will not give a perfect reflection of real life 20% TCC in every scenario, but having this grouping makes calculating the canopy more efficient than undertaking calculations for every species, on the proviso that the IDS species list is robust. • CM: there needs to be a more flexible attitude to 'acceptable' tree form. Part of accepting a stronger native species presence, is also to allow for distinctive local growth forms rather than be bound by European conventions.

d. The inclusion of a height column within 6.10A.4.2.1 Table 1 should be removed	• HR, TC & SS: Agree, provided the IDS is robust, there is a set way to keep the IDS species list updated, the use of height in this table is irrelevant. • Designers should be taking into account a height of a tree, but it's not relevant to the implementation of this rule.	• JM & TC: It should be noted that narrow but tall trees (fastigiate or columnar forms) may not contribute greatly to canopy cover, but due to their total leaf area, they contribute strongly towards benefits sought from our urban forests.
6. The proposed calculator tool overstates the likely tree canopy cover that may be achieved on residential development sites. Due to:	• HR, SS, TC: Agree that the current calculator tool may allow applications to 'comply' without specifically contributing 20% TCC within their development site. • SS: The rule does not provide the outcome sought and requires re-working.	•
a. Overlapping canopies	• HR, SS, TC: Agree. Proposed rule currently allows full canopy area of each individual tree to be counted, regardless of whether there may be an overlap of canopies. • This is contrary to how TCC is calculated on a citywide basis using LiDAR data. • HR, SS, TC: Agree that an amendment is required to address this and how this is addressed needs further consideration.	• SS: If overlapping is allowed, how much and how is the canopy cover then calculated? This needs further explanation in any proposed rule. If a limited percentage of overlap is allowed, then this adds another step in the calculation process i.e. calculate total canopy, calculate area of overlap. This additional process is a further reflection of the potential complexity in applying the proposed rule. • HR, TC: This could be managed by adding to the rules a percentage limit of how much canopy overlap is accetable similar to that of the 20% proposed rule (6.10A.4.2.viii) which restrict the

		amount of impervious surface over the soil area for trees.
b. Canopy overhanging the development site boundary	• TC, SS, HR: Agree. The rule wording currently reads only the area of canopy contained within the development site should be counted toward TCC. If overhanging canopy may be counted, the % calculation will overstate what is actually provided "on the site" i.e. within the site boundary. If overhanging canopy is to be excluded, determining compliance becomes more challenging (requiring a process of 'trimming' the overhang areas from the calculation and the calculator would need to be updated to reflect this).	• TC, CM & HR: The benefits provided by trees will still be relevant regardless of whether they overhang the boundary. Due to the inclusion of minimum berm width and soil volume requirements to be accommodated on the development site, trees are more likely to be setback and those that do overhang will remain healthy even if they are pruned back by the neighbouring property owner. Based on this, the wording within the ruling should be adjusted to allow overhanging canopy to be included. • TC & JM: based on experience, canopies are not often pruned back to boundaries by neighboring properties. Canopy maps of Christchurch urban forest supports this. It's very rare to see a hard edge canopy where a neighbour has trimmed canopy back to property boundary.

Soil Volumes 7. The proposed rule introduces the requirement to provide on the development site "*..sufficient soil volume and tree root area dimensions..*"	• HR, TC, SS: Additional detail is required to allow compliance with this matter to be determined. • HR, TC: Providing sufficient soil volumes and root areas should be limited to the development site. • The importance of soil volume and minimum tree root area dimensions is missed in the proposed Rule 6.10A.4.2.1, Table 1.	• CM: this might be waived if the boundary is onto public, park or road reserve land.
a. Soil area calculations	• HR, TC, SS: Agree that additional information/details should be provided within the rule and the Councils IDS on how soil area is measured including minimum width dimensions.	
b. Minimum width dimension	• HR, TC: Having minimum widths of open ground is required to support tree health. • Ensuring space for a tree to grow and access water is important in a built environment. • The wording 'tree root area dimensions' within the proposed rule does not relate to the wording of 'berm widths' used within the IDS. An amendment to enable consistency or a connection between these terms is suggested.	

c. Soil volume and minimum width dimensions are key to determining an appropriately sized tree for any given space.	• HR, SS, TC: Available soil area/volume for trees should be addressed first in the proposed rule to reflect its importance in providing for tree health (and therefore achieving canopy cover). • This will also aid in changing the way designers/ Landscape Architects currently design planting schemes. • Designing planting plans by soil volumes will provide better tree health outcomes on sites.	• SS: Understanding the implication of this proposed change to the rule is important. I would like to see how this approach of identifying 'plantable' space for trees looks in practice. Would it result in different landscape and amenity outcomes, and is 20% TCC achievable on residential sites in the respective zone densities if designing in this order: 1. Calculating available soil volume on site 2. Calculate minimum widths of garden beds 3. Selecting the appropriate tree size (S, M, L, VL) 4. Select tree species (as desired to meet other amenity outcomes) • CM: there may be room for flexibility if the soil volume receives supplementary water/nutrient supply from roof or other land channeling. appropriate species selection will mitigate some of the constraints. Here, as in all planning and design should engage appropriate ecological input.