BEFORE INDEPENDENT HEARING COMMISSIONERS
AT CHRISTCHURCH

I MUA NGĀ KAIKŌMIHANA WHAKAWĀ MOTUHAKE
KI ŌTAUTAHI

UNDER	the Resource Management Act 1991
IN THE MATTER	of the hearing of further submissions on Plan Change 14 to the Operative Christchurch District Plan
AND	SUBMITTER #681 - ANDREW GREGORY MCCARTHY

STATEMENT OF EVIDENCE OF ANDREW GREGORY MCCARTHY
Dated 20 September 2023

Christchurch
Solicitor acting: Gerard Cleary
Level 9, Anthony Harper Tower
62 Worcester Boulevard
PO Box 2646, Christchurch 8140
Tel +64 3 379 0920 | Fax +64 3 366 9277
E-mail: gerard.cleary@ah.co.nz

Anthony Harper

1 INTRODUCTION

1.1 My name is Andrew Gregory McCarthy.

1.2 My qualifications are Bachelor of Environmental Engineering with First Class Honours from the University of Canterbury and a Master of Business Administration (with Distinction) from the University of Canterbury. I was formerly a Chartered Professional Engineer but this qualification has now lapsed.

1.3 I was employed in an engineering capacity by the Christchurch City Council from 2000-2005. The last two years of this period I worked in the Area Plans Team, assisting in particular with the engineering side of town planning.

1.4 Subsequent to this I worked from 2006-2008 for NZ Windfarms Limited, with a particular focus on providing roading and other infrastructure necessary for the development of steep hillside sites associated with windfarms.

1.5 I have also spent 10 years in the residential property development sector, as a franchisee of Golden Homes. I am currently the operations manager of a company specialising in solar energy installations.

1.6 As a submitter on Plan Change 14, I am not providing this evidence as an independent expert, rather I am offering my opinions based on my experience and qualifications outlined above.

2 SCOPE OF EVIDENCE

2.1 My evidence addresses the s42A reports and evidence of Council officers with respect to three waters infrastructure on the hill suburbs of Christchurch. This evidence has been provided as a means of justifying the application of the Low Public Transport Access Qualifying Matter (LPTAQM).

2.2 Potential infrastructure constraints to development fall under the "three waters" umbrella i.e stormwater disposal, water supply and wastewater. I address each of these matters in turn.

Stormwater

2.3 I do not intend to address stormwater as a major infrastructural issue in terms of it being a development constraint, as it has not been raised as one by Council officers.

2.4 I note that Mr Kleynbos, CCC's planning officer with respect to the LPTAQM, at paragraph 7.1.165 of his evidence states:

"*In lieu of any specific stormwater controls within the District Plan, the Bylaws are considered sufficient by Mr Norton (CCC's expert on stormwater) to address on-site stormwater management."*.

Water Supply and Wastewater

2.5 I will largely address these matters jointly as they have been done so by CCC's expert in this area, Ms McDonald.

2.6 Ms McDonald discusses "*the principle of cost-effective infrastructure development"* in her evidence (paragraph 80) but it is not clear to me where she sees the costs of infrastructure development falling. If those costs are to fall on the development community, it becomes a cost of development, as opposed to a cost borne by the community as a whole.

2.7 To my understanding, and based on my experience, the Council has several tools available to it to ensure that costs fall on those giving rise to the demands that development may place on infrastructure.

2.8 If Ms McDonald's opinion is correct and infrastructure development isn't cost-effective within the designated LPTAQM, then it is unlikely much development will occur in the area, thus the LPTAQM is unnecessary, or at least is unjustifiable on this basis.

2.9 I also note that, in my experience, more intense development typically leads to *lower* unit costs than unit development costs in less intensely developed areas. Thus, allowing more intense development in the hill suburbs would likely lead to *lower* average costs per unit over time for any additional development that occurs in these areas.

2.10 I am not aware of any reports, site-specific or otherwise, detailing the likely extra costs of allowing intensification on the hill suburbs, compared to other Christchurch areas. There were none supporting Ms McDonald's evidence.

2.11 In the absence of appropriate data that can be tested and weighed, I find it difficult to assess trade-offs against the inevitable opportunity costs of not allowing development to occur in LPTAQM areas. I think the absence of detailed infrastructural studies mean a degree of caution is required in restricting development until detail available justifies such a decision.

2.12 Ms McDonald states (paragraph 81(a)):

"Due to the cost and complexity to upgrade large individual connections progressive upgrades are neither feasible nor cost-effective"

2.13 I am unaware of any studies undertaken that show how or why this is the case. I am not aware of any studies done of what it would cost to upgrade connections, or what other options might be possible to manage water supply and wastewater challenges in the LPTAQM area, particularly as it relates to hill suburbs.

2.14 I think it is highly likely that with a combination of pump upgrades, line upgrades, and storage provision for wastewater infrastructure, then development per MDRS standards could proceed on the hill suburbs, including east of Ferrymead. I do not accept that further development is not feasible without studies showing that this is the case.

2.15 Water supply can be managed via the incremental addition of more reservoirs. I am unaware of any particular reason why this would not be possible in the hill areas of Christchurch.

2.16 Ms McDonald notes the challenges presented as being "…*extremely complex because of the vast elevation and limited space."* but I do not see these as unmanageable given the usual Council infrastructure planning processes, its powers under the Public Works Act, and that these types of development challenges are commonplace and addressed without issue in other hilly New Zealand Tier 1 cities.

2.17 It is clear from paragraph 85 of Ms McDonald's evidence that there are options for upgrading both wastewater and water supply infrastructure east of Ferrymead, where required. In discussing wastewater, she states that "any upgrade of the pump station *could* also require the upgrade of the pressure main…" and that for water supply "…water mains, booster pump stations and reservoirs *may* need to be upgraded to provide sufficient capacity further on."

2.18 Mr Kleynbos, made reference to Ms McDonald's evidence in his paragraph 7.1.109:

"However, I also consider that the evidence from Ms McDonald is of particular relevance. This details how the wastewater catchment is particularly constrained and is unable to cater for medium density development within the catchments of the Purple Line."

2.19 I do not draw the same conclusion as Mr. Kleynbos. Ms McDonald's evidence does not detail how these areas are 'particularly constrained'. Rather, she sets out what upgrades may be required to manage arising constraints. In my view, to the extent that some infrastructural challenges may arise from MDRS development on the hill suburbs, I see these as surmountable by site-specific design solutions and/or as part of CCC's normal asset planning process.

2.20 I have reviewed the Council's latest wastewater asset management plan, which is part of the documentation for the current 2021-2031 Long Term Plan (LTP). On page 41, under the heading *Asset Utilisation*, the document says:

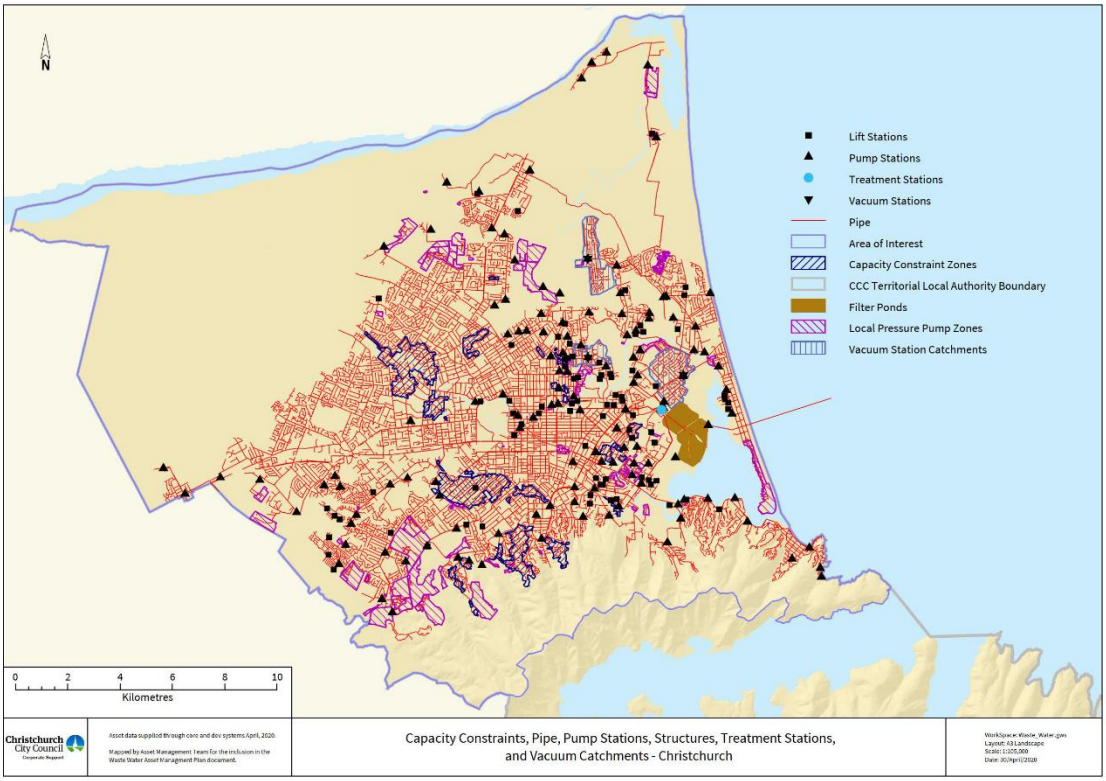
2.21 *Hydraulic modelling has identified wastewater capacity constrained areas where current demand is likely to exceed capacity during peak wet weather events. New connections*

in these areas are required to implement smart local pressure sewer systems to provide attenuation during peak demand periods. These systems are predicted to improve demand conditions in the interim until infrastructure upgrades are able to alleviate the capacity constraint. The wastewater capacity constrained areas are shown in Figure 4-9 below: Figure 4-9: Overview of wastewater capacity constraint areas:

Figure 4-9: Overview of wastewater capacity constraint areas

2.22 From Figure 4-9 it is clear the majority of the hill suburbs within Christchurch are not identified as having existing capacity constraints. Where constraints are identified, the asset management plan makes it clear that new smart low-pressure systems are required by Council to provide attenuation. What this means is that the discharge of wastewater is managed so that it occurs either at a controlled rate or within off-peak periods. To my knowledge, low pressure systems are widely regarded as a useful method to maximise the efficiency of wastewater infrastructure.

2.23 Later in that same document, Figure 7-2 shows the Christchurch City Wastewater Asset Locations



2.24 This figure identifies, amongst others, capacity constraint zones, local pressure pump zones and vacuum station catchments. It can be seen in the figure that relatively small portion of hill suburbs appear to be identified as Capacity Constraint Zones. The majority, including the suburbs east of Ferrymead Bridge are not. Some hill suburb areas are also identified as Local Pressure Pump Zones. I have noted that the above Figure 7-2 is replicated in Figure 2.1 of the latest draft Waster Asset Management Plan which forms part of 2024 -2034 LTP process.

2.25 The above leads me to conclude that there are no immediate infrastructural constraints to prevent further residential intensification on the majority of the Christchurch hill suburbs.

2.26 My experience tells me that any such intensification is likely to be gradual and play out in semi-predictable ways over multi-year periods, rather than happen in a rush. This likely gradual development affords CCC the opportunity to ensure that the correct design solutions are adopted and for infrastructural upgrades to be identified, planned and programmed as part of its normal asset management planning process, should they be required.

3 CONCLUSION

3.1 From publicly available documentation I have reviewed, the majority of the hill suburbs are not identified as having existing capacity constraints. This leads me to question whether what is effectively a blanket restriction on residential intensification in the hill suburbs is justified from a infrastructural or asset management perspective.

3.2 It also appears to me that should capacity issues arise, they can be managed by design solutions and/or as part of the asset management planning process.

Andrew McCarthy
20 September 2023