

BEFORE HOROWHENUA DISTRICT COUNCIL

IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF the Proposed Horowhenua District Plan

**STATEMENT OF EVIDENCE OF TOM ANDERSON
ON BEHALF OF
TELECOM NEW ZEALAND LIMITED**

26 April 2013

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Professional Qualifications and Experience

1. My name is Tom Anderson. I am a resource management consultant at Incite, a resource management consulting firm. I hold a Bachelor of Science and a Master of Planning from the University of Otago, and am a graduate member of the New Zealand Planning Institute.
2. I have five years professional experience in the field of resource management. Throughout most of my career I have provided resource management advice to Telecom New Zealand Limited (Telecom), initially as an employee of GHD Limited and for the last two years as an employee of Incite. During this time I have assisted Telecom in a wide range of tasks such as District Plan reviews, designations, site selection studies and consenting activities for mobile and broadband network rollouts.
3. On this basis, I consider myself to be familiar with telecommunication networks, and the practical implications and constraints of District Plans in relation to telecommunication installation and operation.
4. I have been asked by Telecom to give evidence on their behalf in relation to the provisions for co-location on telecommunication masts in the Proposed Horowhenua District Plan. Telecom accepts the officer's recommendation on all other points raised in their submission and discussed in the Utilities and Energy Section 42A report, and I can answer any specific questions on these matters if necessary.
5. I have read the Code of Conduct for Expert Witnesses (section 5 of the Environment Court Consolidated Practice Note 2006) and I agree to comply with this Code of Conduct. This evidence is within my area of expertise, except where I state I am relying on what I have been told by another person. I have not omitted to consider any material facts known to me that might alter or detract from the opinions I express.
6. The technical aspects of co-location that have been included within this evidence have been informed by and verified by Tonie De Vries, Design and Build RAN Solution Architect in the Technology and Shared Services Business Unit at Telecom. Unfortunately Mr De Vries is unable to attend this hearing.
7. Attending this hearing with me is Mary Barton a senior environmental planner with Chorus New Zealand Limited. Chorus is a telecommunications infrastructure company which works with Telecom and other telecommunication companies to maintain and build networks, and currently is contracted to Telecom to support them in project acquisition and environmental compliance matters. Mary is also available to answer any questions that the Commissioners may have.

Telecom and the Horowhenua District

8. As is stated in the submission, Telecom is a major telecommunication network provider within the Horowhenua District. This evidence is primarily in relation to its mobile network. The network is utilised for a wide range of purposes that are essential to modern society, including:

- personal and commercial communications;
- wireless data transfer;
- linking financial institutions to convey critical financial transaction data;
- fire and burglary monitoring and control facilities; and
- other emergency services communications.

The provision of resilient telecommunication networks during emergencies is critical, as has been highlighted in the case of the Canterbury earthquakes.

9. It is important to note that the Telecom network is subject to constant maintenance, modification and upgrading as the number of customers and services increase, and changes in technology occur.

Network Utility Co-Location Provisions of the Proposed Horowhenua District Plan (as notified)

10. The co-location of telecommunication companies' infrastructure on a single mast is becoming a more common occurrence. This is due to changes in the regulatory environment which promotes co-location practice. Generally speaking, where possible (i.e. where structural and technological requirements allow) telecommunications companies are now working together in many instances to co-locate their respective infrastructure. This has been particularly evident in the Rural Broadband Initiative (RBI) project where much of the mobile infrastructure is being designed to accommodate several providers. However, a second operator may also elect to retrofit antennas onto an existing providers mast.

11. Chapter 12 of the Proposed Horowhenua District Plan details the Objectives and Policies for Utilities. There is one policy that directly relates to the co-location of telecommunications providers, being Policy 12.1.8.

12. This Policy is *"Encourage the co-location or multiple use of network utilities where this is efficient and practicable in order to avoid, remedy or mitigate adverse effects on the environment"*.

13. It is clearly stated in this policy that, where appropriate, network utilities should be co-located in the Horowhenua District.

14. Further, in the *"Explanation and Principal Reasons"* for Objective and Polices 12.1.1 through to 12.1.9, it is stated that *"Encouragement is also given to network utility operators to co-locate, or share facilities or sites, where this is practicable, supports efficiencies and would assist in*

mitigating or avoiding adverse effects” and in the “Methods for Issue 12.1 and Objective 12.1.1” it is stated that “Rules to permit certain essential network utilities subject to minimum standards recognising the relevant locational, technical and operational requirements and environmental characteristics and amenities of different areas. The minimum standards in each zone include:

- co-location of network utilities wherever practicable.”*

15. These provisions further demonstrate that, at a policy level, co-location of network utilities is encouraged in the Horowhenua District.
16. Rules and conditions for telecommunications and all other network utilities are detailed in Chapter 22 and the zone chapters of the Proposed Plan. There are no rules in any of these chapters relating to co-location of network utilities. This does not fit within the policy framework for network utility co-location.

Telecom Submission on Co-Location Provisions

17. Telecom submitted on a number of provisions in the Horowhenua District Plan. Telecom submissions 78.05 (using the Officers Report Submission Numbering) was in support of Policy 12.1.8 and sought to retain this policy as notified.
18. Telecom Submission 78.17 was entitled *“Height of Masts and Antennas where more than one Network Operator is Co-Located on the same Mast”*. The submission was in opposition to Rule 22.1 (Conditions for Permitted Activities) and sought a new rule for the permitted height of masts and attached antennas where more than one Network Operator is co-located on the same mast. The submission outlined that co-location was encouraged under Policy 12.1.8, where this is efficient and practicable in order to avoid, remedy or mitigate adverse effects on the environment.
19. The technical aspects of co-location were then detailed. I will elaborate on these aspects later in this evidence.
20. The relief sought in the submission was to *“Include a new permitted activity standard in Rule 22.1 Conditions for Permitted Activities, that provides for masts and attached antennas to exceed the permitted height limits in Rule 22.1.8 by an additional 5m in Commercial, Industrial and Rural Zones, where the antennas of more than one network utility operator are co-located on the same mast”*.
21. A co-location provision is no longer considered necessary in the Industrial Zone. Under Telecom Submission 78.16, a permitted mast height of 25m was sought in the Industrial Zone. The Officer’s Recommendation is to accept this proposed height. If the panel accept the Officer’s recommendation, the permitted mast height in this zone would be 5m higher than what

is currently permitted under the Operative District Plan (and what was notified in the Proposed District Plan), and will likely allow co-location in the Industrial Zone.

22. Likewise, co-location is not sought for the Commercial Zone outside of the Pedestrian Area Overlay in Levin. My interpretation of the Commercial Zone in the Proposed Plan is that the "Pedestrian Area Overlay in Levin" is the primary retail and commercial area in the Horowhenua District. Buildings up to 15m high and masts up to 20m high are provided for in this overlay. The remainder of the Commercial Zone provides more for lower density and lower height suburban centres (allows buildings up to 8.5m high and masts up to 15m high). An extra 5m of mast height in these areas may be out of scale with the immediate environment.
23. Co-location provisions are not sought for any other Proposed District Plan zone. As is stated in the submission, Telecom prefers to construct new facilities in areas such as commercial and industrial zones, where larger scale structures are enabled and as such are better able to be absorbed into the surrounding environment. Likewise larger facilities are sought in rural areas in order to provide coverage to a greater number of rural customers for both mobile and broadband requirements.

Section 42A Officers Report

24. The Section 42A Officer's Report to the District Plan Review Hearing Panel on Utilities and Energy recommended that Telecom Submission 78.05 be accepted, and offered no recommendation on Telecom Submission 78.17.
25. In regard to the no recommendation stance taken on submission 78.17, it is stated in Section 4.58.2 of the Officer's Report (Discussion and Evaluation [of new rules for Chapter 22]) that *"I do not find it appropriate to provide for an increased height limit to encourage co-location and suggest that the submitters address the matter at the hearing. It would be helpful for the Panel to understand the need for the additional height and why an incentive is required to co-locate. It would seem that there would be a financial benefit without requiring any rules in the District Plan. I am therefore not making a recommendation on this matter and invite the submitters to address the matter at the hearing"*.
26. These issues are addressed in the following sections of my evidence.

Technical Requirements

27. For co-location to work, separation between the different telecommunication network operators antenna's on a single mast is required. This is because each telecommunication network requires different radiofrequencies along a spectrum. The physical separation of the infrastructure allows for isolation between the different networks radiofrequencies and as such prevents the networks from interfering with each other.

28. Telecom advised that the minimum required vertical separation between different operator's antennas to meet required radiofrequency isolation to avoid interference is 1.5m. This is measured from the top of one operators antenna to the bottom of the other operators antenna. Antennas can be up to 3m in size. A 0.5m cable management space is also required. As such, from a technical perspective, an additional 5m of height is required to achieve co-location. With suitable vertical separation between networks. Co-location below the existing operator may be technically possible in some instances, but often does not provide sufficient coverage due to the reduced height and therefore does not create the necessary incentive for co-location.
29. While there have been some instances where co-location at the same level has occurred, this is often not practical due to lack of available antenna space for more than one operator.

Planning Outcomes

30. Often, New Zealand's various telecommunications companies locate their mobile facilities in a similar area. There are many examples around New Zealand where one specific location contains two or three similar sized mobile phone masts. This may be considered as an adverse visual effect.
31. Telecom's criteria in selecting a mobile telecommunication site is based on a number of factors, including providing customers with a high quality service while minimising environmental impacts and gaining the most economic solution to assist in reducing costs for users of the network.
32. From my experience of the site selection process, an option that is able to comply with the permitted activity provisions of the District Plan will have significantly more 'weight' compared to an option which requires resource consent, primarily due to cost.
33. As such, co-location as a permitted activity becomes more attractive as an option for Telecom and other operators. If co-location is not permitted, the more permissive and consequently more attractive option under the Proposed Plan is two or more 20m high telecommunication masts located in a close proximity. Telecom is likely to be guided by permitted activity standards as an incentive in assessing whether to pursue a particular option.
34. Further, co-location is considered to be consistent with Part 2 matters of the RMA, in particular Section 7(b), being:
"7 - Other Matters
(b) The efficient use and development of natural and physical resources"
Utilising a single mast for co-location of more than one telecommunications operator is a more efficient use of that physical resource than constructing two similar masts in a close proximity to one another.

35. Co-location provisions in District Plans are becoming more common around New Zealand. In terms of neighbouring District's to Horowhenua I note that both Kapiti Coast District Council and Porirua City Council have made provision for co-location in their respective Proposed and Draft District Plans. Co-location is a relatively new option and is a provision that Telecom will continue to seek as second generation District Plans are notified around New Zealand.
36. To conclude, the Officer's Section 42A report questions why co-location needs to be incentivised through permitted activity standards. A permitted activity is the incentive for Telecom to pursue an option. In my opinion, without provision being made for co-location as a permitted activity, a higher number of masts are likely to be constructed in the Horowhenua District as telecommunications technologies evolve. Further, having a rule or condition that provides for co-location ensures there is consistency with the co-location policy framework outlined in Chapter 12 of the Proposed Plan.
37. As such, and as outlined in Telecom's submission, Telecom seek a new permitted activity standard under Rule 22.1 (Conditions for Permitted Activities), that provides for masts and attached antennas to exceed the permitted height limits in Rule 22.1.8 by an additional 5m in the Commercial (Pedestrian Area Overlay in Levin) Zone and Rural Zone, where the antennas of more than one network utility operator are co-located on the same mast.
38. Mary Barton and I would be pleased to answer any queries that you may have.

Tom Anderson
26 April 2013