IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of Porirua City Council's Proposed District Plan

Hearing Variation 1

JOINT STATEMENT OF EVIDENCE OF

GRAEME IAN MCCARRISON FOR

SPARK TRADING NEW ZEALAND LTD

AND

COLIN CLUNE FOR

VODAFONE NEW ZEALAND LTD

IN RELATION TO HEARING VARIATION 1 OF PORIRUA CITY COUNCIL'S PROPOSED DISTRICT PLAN

24 FEBRUARY 2023

1. EXECUTIVE SUMMARY

1.1 Spark, and Vodafone, along with other telecommunication providers, invest significantly every year in our networks to ensure New Zealanders have access to world class digital services. New Zealanders and businesses depend on access to these networks, as proven during the current Covid-19 pandemic and resultant economic matters. We presented extensive corporate evidence at the Proposed District Plan Utilities hearing. The following evidence is updated and focused on supporting our request changes in the height standards.

1.2 We rely on regulatory frameworks both nationally, via the National Environmental Standards for Telecommunications Facilities 2016 (NESTF), and locally, via the Operative and Proposed Porirua City District Plans, to appropriately enable the planning and funding for upgrading of existing networks and construction of new networks to support new growth areas. The NESTF 2016 is not fit for purpose to accommodate the need for taller telecommunication sites (cell-sites) in areas zoned for intensification such Kainga Ora's regeneration of Eastern Porirua.

1.3 Spark and Vodafone are two of the three national mobile network operators who compete for customers over their own national network of cell sites, utilising radio spectrum licensed from the Government. Within Porirua City the companies building or providing network to ensure it is a well-functioning city includes Spark and Vodafone.

1.4 We appreciate that Porirua City is the only council in New Zealand that as part of the plan change in response to Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 recognised the need to consider consequential changes to other parts of the Plan. Proposing amendments to the infrastructure chapter will better enable the network utilities operators to support the urban intensification of Porirua. In all the other areas of New Zealand we will be challenged to support intensification as the NESTF 2016 and telecommunication standards in Plans need amendment to enable telecommunications facilities to safely and provide the access to digital services that people living, visiting and working in the new developments expect and rely on.

1.5 The proposal for facilities (pole height, antennas and ancillary equipment) to be 5m above the permitted structure height of the adjoining zone enables the planning, designing and construction of facilities that will deliver the services expected of us.

Under the NESTF antennas on building are permitted to be 5m above the building the antennas are attached (in residential zones this only applies if the building is at least 15m in height). We accept that until the NESTF is amended to increase heights of facilities we will be triggering controlled activity consent for sites in the road as an infringement of the NESTF, even where this a permitted activity under the district plan.

1.6 Our proposed amendments focus on ensuring:

a. Antennas must be high enough to enable a device to have reasonable line of sight.
b. Compliance with radiofrequency exposure standards (NESTF).
c. Flexibility to design the facility to the coverage and capacity needs of locality impacted by any over height buildings.
d. Reduce the need to relocate sites due to intensification.
e. Meeting residents need and want for connectivity.

2. INTRODUCTION

Graeme McCarrison

2.1 My full name is Graeme Ian McCarrison. I am the Engagement & Planning Manager at Spark New Zealand Trading Limited ("Spark"), a position I have held since February 2015. I am authorised to give this evidence on Spark's behalf.

2.2 I hold the qualification of Bachelor of Regional Planning (Honours) from Massey University. I am a full member of the New Zealand Planning Institute and have 38 years' experience in New Zealand and overseas. I have been on the board of the New Zealand Planning Institute ("NZPI") since April 2018. Between 2012 and April 2015 I was the chairperson of the Auckland branch of the New Zealand Planning Institute. In 2016 I was honoured with a NZPI Distinguished Service Award, and I received a best practice award for iwi engagement from NZPI in 2015.

2.3 During the last 38 years I have worked in the public sector in Auckland including as Director of Regulatory Services at Papakura District Council, Planning Manager for Waitakere City Council and in the private sector as a self-employed consultant and as a consultant at Murray North Partners. For the last ten years I have worked in the telecommunications sector. Prior to Spark I held the equivalent position at Chorus NZ Limited ("Chorus") (November 2011 to January 2015), where I advised both Chorus and Spark on resource management and government matters. I am involved in the review of all regional and district plans plus any related local government documents that have the potential to enable or impact the telecommunications industry. During the review of the Christchurch District Plan process, I led and facilitated the combined approach of Spark, Chorus, Vodafone, 2degrees and Enable during the three years of our involvement.

2.4 I facilitate and co-ordinate a wide group of network utility organisations with national interests. The purpose of this group is to share information, identify opportunities to collaborate and engage on key documents relevant to network utilities. To ensure that the telecommunication industries interests are represented I organise a shared approach and resources that enables Spark, Chorus and Vodafone to be involved at a national level in every relevant Plan review across New Zealand and relevant legislation which includes a submission on the Natural and Built Environments Act exposure draft. With Chorus and Vodafone, we are currently involved in plan reviews and related documents across New Zealand including: Otago, Dunedin, Auckland, Timaru, Wellington, Waimakariri, McKenzie, Tararua Napier, Hastings, Nelson, Tasman, Far North, and Central Hawkes Bay.

2.5 I represented the Telecommunications Forum (TCF) on the Technical Advisory Group for the NESTF alongside my colleagues Andrew Kantor – Chorus, Colin Clune – Vodafone, and Ben Blakemore – 2 Degrees. Since the NESTF 2016 amendments, the group made up of representatives from the Ministry of Business, Innovation and Employment ("MBIE"), Ministry for the Environment ("MfE"), and Local Government New Zealand ("LGNZ") meet at least annually to discuss and review the effectiveness of the NESTF. We are currently working on amendments to the NESTF and the first national planning framework under the proposed Natural and Built Environments bill.

Colin Clune

2.6 My full name is Colin William Clune. I am the Resource Management Planning Advisor at Vodafone New Zealand Limited (Vodafone). A position I have held since October 2014. Previously, I was an in-house contractor for Vodafone, (September 2010 to September 2014), where I advised Vodafone on resource management and government matters. I am authorised to give this evidence on Vodafone's behalf.

2.7 I hold the qualifications of Bachelor of Urban Planning and Master of Planning from the University of Auckland. Currently I am on the Technical Advisory Group for the National Environmental Standard Telecommunication Facilities amendments (NESTF amendments). I am also a participating member of the New Zealand Telecommunications Forum, which works to efficiently resolve regulatory, technical and policy issues associated with network telecommunications.

Scope of evidence

2.8 This statement of evidence covers the following areas:

a. Trends challenge the existing telecommunications regulatory assumptions.
b. What intensification means for telecommunication infrastructure.
c. Telecommunications infrastructure

3. TRENDS CHALLENGING THE EXISTING TELECOMMUNICATION REGULATORY ASSUMPTIONS

3.1 Historically, the telecommunications industry has sought to design and construct its network to stay within permitted standards under the NESTF or relevant district plans as much as possible. The limitation of this approach has been that the network has not always been designed to achieve optimal experience or performance for the customer and their devices. The telecommunication standards/rules in the NESTF and district plans reflect the historic low densities in suburban New Zealand that is to say the quarter acre dream or 1 house per 400m^2 to 800m^2 low height of

buildings/dwellings i.e. generally 5 to 8m. Our early network requirements were for 2G & 3G, which provided voice and text services using radio spectrum that could extend over a reasonably long distance from the user's device for example a mobile phone. 4G really started the trend for fast data driven digital services on our phones/devices. 5G takes data services and products to another level. Our 4 & 5G networks use a range of spectrums as the following diagram shows. The outcome is our sites need to be closer to the end user's device. The higher the spectrum being used, the lower the ability to get into buildings and through vegetation.

3.2 The housing crisis, climate change, need protect environments such as our highly productive soils and bio-diverse environments triggered central government initiatives including the National Policy Statement Urban Development, Urban Development Act 2020 for the purpose of enabling urban development projects initiated, facilitated, or undertaken by Kāinga Ora–Homes and Communities and Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021. The latter significantly changes the traditional residential standards with an assumption of being able to build additional houses on the majority of residential zoned land and up to a height of 12m at the roof pitch. The Porirua residential intensification precincts enable 4 to 5 level developments and start the trend toward urban areas having a significantly higher density of population, higher and larger physical footprint as you would expect in a european city. The Christchurch CBD residential rebuild reflects the form of development we can expect under the medium density rules such higher under the higher density rules.

Christchurch photos show example of 2 and 3 levelled residential at the edge of the CBD

3.3 The attached photos are from a new Kainga Ora development being built in Northcote, Auckland. The light pole shown in the photo's measures approx. 6m tall and 155mm wide. The adjacent buildings measure 10m in height. The light poles are too low and

narrow to be able to use NESTF regulations 26 and 27 for antennas on existing poles in the road and regulations 28 and 29 for new poles in the road. The 10m residential buildings are below the 15m minimum height for residential houses under regulations 36 and 37. Consequently, the NESTF provides no permitted options, therefore we depend on the district plan to enable wireless connectivity for intensified development areas. These will be controlled activities under regulation 14 if the proposal is a permitted activity under the district plan.

Rental housing proposal for Hobsonville

3.4 When the development is a mixture of 2 to 6 levels of residences as in the above the proposed Kainga Ora Hobsonville development or the below 15.6m apartment complex in Northcote. The 6m high streetlight pole cannot be transferred in a combine cell site with lighting as anticipated by the NESTF 2016 standards. We need to be able to design and build telecommunications facilities that are fit for purpose for the communities and our network needs to enable connections.

3.5 In response the telecommunication standards need to be updated. Variation 1 is a positive step forward and recognises the importance of our communities and businesses having wireless connectivity. Our submission seeks tweaks to the standards to support us to design and build network that effectively and efficiently services Porirua's communities.

3.6 Grant Wright's evidence sets out the network and radiofrequency engineering reasons for our amendments. Our wireless networks are essential to support climate

change and responses to monitoring managing natural hazards. The 2022 National Adaptation Plan and the Emissions Reduction Plan signalled a focus in Aotearoa on reducing emissions and preparing for changing climate. Porirua in 2020 launched its climate change strategy. Gathering data on the environment and changes via for example sensors connected to our networks even in remote locations provide the opportunity for not only real-time dashboards that residents can view, as well as better data to shape decisions. As we densify our urban areas it is increasingly important to monitor in real-time potential environment risk appropriate to Porirua. This could include noise, air quality, water, stability but also how open spaces or cycleways are being used. Data will enable us to know if our carbon emissions are reducing but also do we have spaces that meet the needs of the local communities.

Urban forest/trees

3.7 Urban forests have an important role to support the wellbeing of people, visual amenity, and climate change mitigation as we try to create urban areas to be partial 'sponges' for heat and storm events. However, trees can also absorb signals from antennas, significantly adversely affecting the ability for the infrastructure to perform its function. This can be overcome by having antennas elevated above the tops of trees. The following photo highlights the benefits of high cell sites that look over the trees to reduce the impact of vegetation blocking radio waves.

Road Reserve Adjoining 180 Innes Road, St Albans, Christchurch.

4. IMPACT OF INTENSIFICATION

4.1 The PDP intentionally allows antenna, whether they are building mounted or on a cell phone tower, which is great, however the permitted heights in some zones are not enough. This is outlined in Kathleen Haylock's evidence.

4.2 When Spark and Vodafone submitted on the RMA Enabling Housing Supply Amendment Bill, now enacted, we undertook a high-level potential cost impact of our networks in Tier 1 growth regions. The estimated impact was as follows:

(i) Spark has 601 sites today within the Tier 1 areas, and of these 372 are poles with a height of less than 18.5m and therefore likely to be affected by the changes to the urban environment enabled by the Amendment Act.

(ii) At $250,000 a site, a relocation or replacement that could conceivably result in almost $100million in additional costs to get mobile coverage back to the same performance levels as we have today.

(iii) 220 of these poles are very likely to be materially affected as they also have residential premises within 35m of them, which means -irrespective of any performance degradation – we would need to relocate the sites because their electromagnetic emissions would be outside acceptable bounds. If we use $250,000 as a relocation/replacement cost that's around $110 million for Spark and Vodafone before we consider the additional costs of increased infill sites to mitigate coverage loss from higher dwellings.

(iv) We expect to relocate 40 urban sites per year in response to urban densification. The outcome if we don't do this under the NESTF/district plans will be a reduced coverage footprint. The potential loss of 40 cell sites a year will dimmish the effective collection of mobile infrastructure at a time when there is a need for the continuation of mobile coverage expansion to serve customer needs.

4.3 We rely on the NESTF and district plans to protect the existing network and appropriately enable the upgrading of existing networks and construction of new networks. The permitted rules for height of new or upgraded telecommunication facilities are where possible to ensure that the antennas are of an effective height above the permitted building height to ensure:

- Radiofrequency emission compliance with the NESTF regulation 55

- Certainty of network coverage and capacity to service customer needs

4.4 While telecommunication network technology requirements are constantly changing and evolving at a fast rate, it remains expensive to have to relocate a site because of increased development and building height.

4.5 The process to find new sites can be anywhere from 3 to 18 months. Complexity of this is partly given the wide range of disciplines involved in:

- Radio Frequency (RF) Engineers who predict expected coverage areas;
- Deployment Engineers;
- Civil Engineers;
- Acquisition Project Managers;
- Resource Management experts; and
- Property Consultant experts.

4.6 We are currently working with MBIE, Te Waihanga and MfE on a potential change to the NESTF 2016 to enable higher facilities. If successful amendments to the NESTF are likely to be 2 years away.

5. TELECOMMUNICATIONS INFRASTRUCTURE NETWORKS

5.1 Telecommunications infrastructure is critical and essential to a modern economy and connecting the 'system of systems' that supports New Zealand's economy and wellbeing of people and communities. Telecommunications plays a vital and important role in national resilience, demonstrated most recently through our national response to Covid-19, as recognised by the Infrastructure Commission. Cyclone

Gabrielle is an unwelcome but clear reminder that we have to design for climate change including the increased resilience of our networks to remain functioning to enable people to be connected.

5.2 The Infrastructure Commission's discussion document on Infrastructure for a Better Future recognises the critical nature of telecommunications infrastructure. The report notes that "Increasing *reliance on communications makes telecommunications infrastructure more critical*."[1]

5.3 The Infrastructure Commission Aotearoa 2050 survey states "*Submitters also recognised the role of population and economic growth in driving infrastructure needs. Telecommunications and digital infrastructure is important for ensuring access for everyone living in regional New Zealand, including those who are vulnerable or disadvantaged. It can complement and sometimes be a substitute for transport networks*."[2]

5.4 Communities need access to safe roads, health services, reliable electricity, mobile phone and internet services and clean water. This can be more challenging outside cities, particularly in our more remote areas. Without these services, economic and social opportunities are limited, and people face disadvantage.

> *"The lack of accessible, affordable high-speed digital connectivity in rural areas remains a significant issue. It is an impediment to business, but it goes well beyond this; it is a significant barrier to maintaining vibrant rural communities."* - Agribusiness Agenda 2021.

5.5 Telecommunications plays a vital and important role in national resilience, demonstrated most recently through our national response to Covid-19, as recognised by the Infrastructure Commission: The Covid-19 pandemic has seen a societal shift in the way we work and live. It is a reminder of the importance of a resilient, flexible and agile infrastructure system in rural and urban areas, as demonstrated, for instance, in the move to working from home, where telecommunications infrastructure has become a substitute for physical transport infrastructure.'[3] It has also become a substitute for in person meetings to support the trend of "hybrid way of working" for those who have to option to split work time between the office and home or other location.

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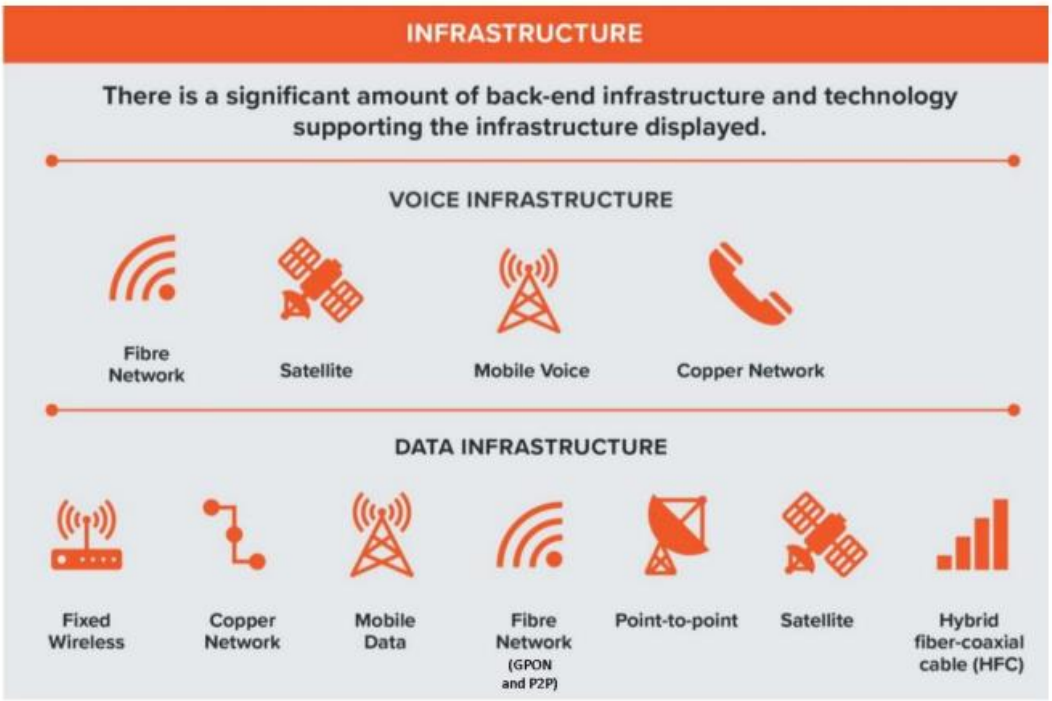
[1] https://www.infrastructure.govt.nz/assets/Uploads/Infrastructure-Strategy-Consultation-Document-June-2021.pdf; p. 34
[2] https://www.tewaihanga.govt.nz/strategy/new-zealand-infrastructure-strategy/ p57
[3] https://www.infrastructure.govt.nz/assets/Uploads/Infrastructure-Strategy-Consultation-Document-June-2021.pdf; p. 37

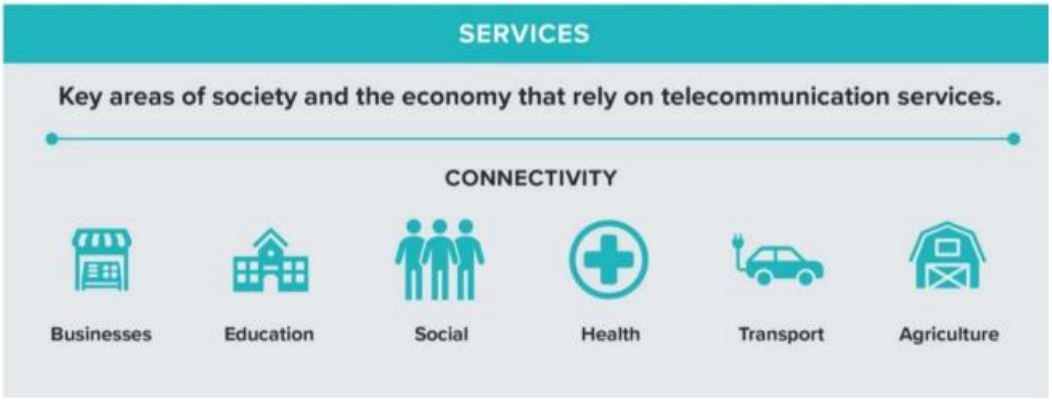
5.6 Telecommunications infrastructure is a key enabler of future technologies that are expected to be one of the solutions to many of today's challenges, from climate change to lifting productivity and innovation including across the rural sector. It is also a key enabler of better use of other types of existing infrastructure and will support efficient deployment of new infrastructure. Telecommunications infrastructure could be considered the high-performing invisible infrastructure that underlines other sectors as the conduit to enabling connection, and the ever-increasing expansion of the Internet of Things (IoT).

5.7 A recent report by The Carbon Trust, commissioned by Vodafone Group, shows the potential for carbon emissions cuts fuelled by hybrid working (home and office based), using technology to reduce lengthy commutes and large office spaces, and deliver other societal benefits such as the potential for more efficient use of existing infrastructure stock[4].

5.8 Our wireless telecommunications networks enable the provision of Emergency Mobile Alerts by the National Emergency Management Agency. These are messages about emergencies sent by authorised emergency agencies to capable mobile phones. The alerts are designed to keep people safe and are broadcast to all capable phones from cell towers within the emergency area. The alerts have been used numerous times for local and national emergencies, including nationwide alerts for the Covid-19 pandemic, to more localised emergencies such as flood event warnings to potentially affected people. The alerts are increasingly becoming the way by which significant emergency events and information are communicated to New Zealanders in an immediate and succinct manner. The rollout of 5G and digital technology that it enables is critical to a well-functioning rural and urban environment as it is widely expected to transform our communities and the ways in which we use other types of infrastructure[5].

[4] https://www.nzherald.co.nz/sponsored-stories/83-million-ways-to-help-climate/NOMMPKDLWFJMF4G74LQDXU2KUU/
[5] https://www.5gradar.com/features/what-is-5g-these-use-cases-reveal-all





Source: New Zealand Infrastructure Commission, Te Waihanga and TCF

5.9 The telecommunications services that are relied on by many areas of society and the economy are provided via different types of infrastructure and technologies, as illustrated by the above graphic from the New Zealand Infrastructure Commission, State of Play: Telecommunications discussion document December 2020[6]

5.10 The Infrastructure Commission in its report on the state of telecommunications in Dec 2021[7] states

"..in spite of the substantial progress the sector has made, there are still issues that create barriers to wellbeing for some New Zealanders. Not everyone can access

[6] https://infracom.govt.nz/assets/Uploads/Telecommunications-State-of-Play-December-2020.pdf Source: New Zealand Infrastructure Commission, Te Waihanga and TC

[7] Telecommunications-State-of-Play-December-2020.pdf

telecommunications services. This may be due to factors such as access to devices, having the necessary skills, trust, motivation, or the cost of connectivity.

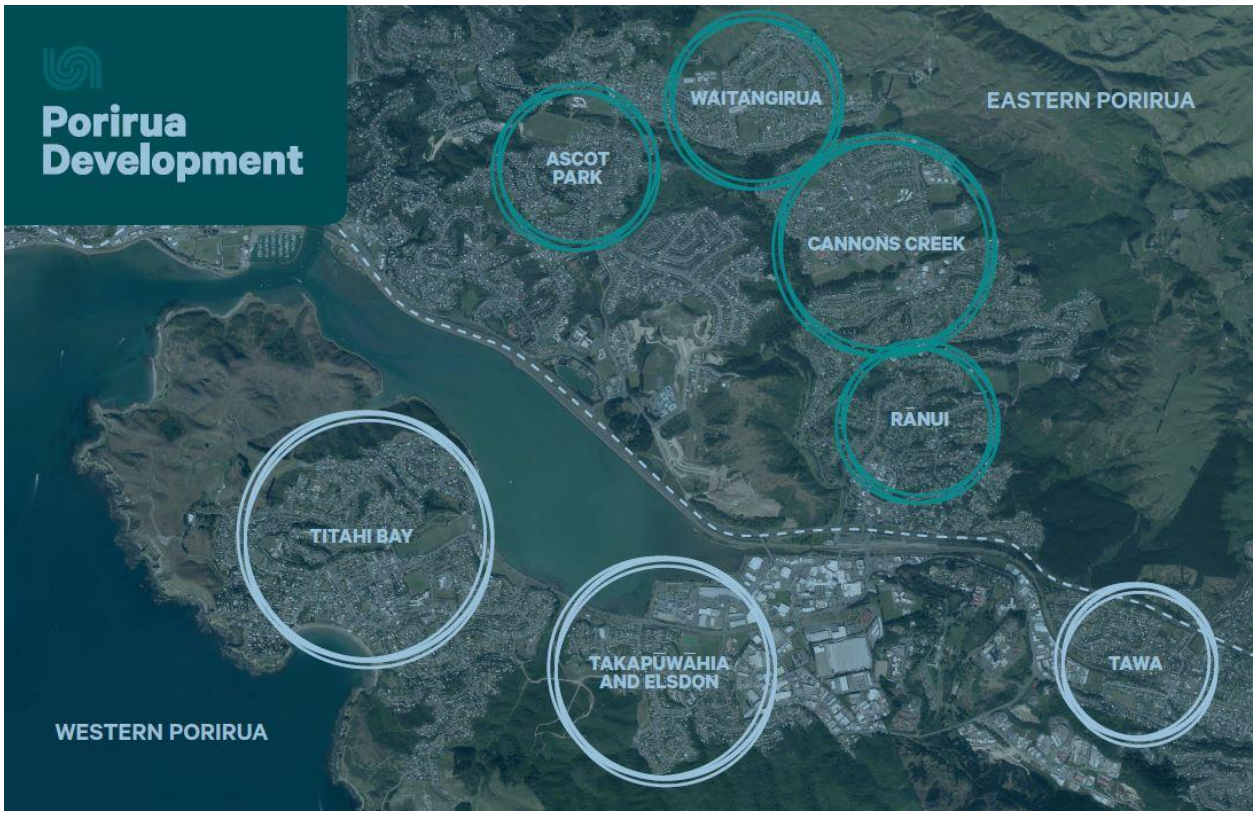
Similarly, in a sector dominated by private capital, it is not always economic to provide affordable infrastructure. Rural communities across New Zealand feel this most acutely. While significant progress has been made through Crown-Private cooperation and infrastructure sharing, the long-term solution to addressing internet connectivity for rural communities is not clear.

GRAEME MCCARRISON AND COLIN CLUNE

24 February 2023

Appendix 1

Eastern Porirua



53 homes in Castor Crescent