Report No:	REP11-11-09
File No:	RM110397
Date:	10 November 2011
Decision Required	

REPORT SUMMARY

Report to: Environment & Planning Committee
Meeting Date: 23 November 2011
Report Author Wayne Horner, Subdivisions Officer
Subject: **TELECOMMUNICATIONS INFRASTRUCTURE FOR NEW SUBDIVISIONS**

EXECUTIVE SUMMARY

At the Environment & Planning Committee meeting on 25 August 2011 Mr D Freilich made a presentation requesting Council to allow wireless reticulation or the provision of ducts only for future cabling as alternatives to Council requiring underground telecommunications cabling at the time of subdivision.

A cable based system will allow a greater range of network providers and services than for the equivalent radio based systems. The Ultra Fast Broadband (UFB) rollout will be using a cable based system within the residential areas around New Zealand which confirms the long term advantages of providing telecommunications services via cable based systems.

RECOMMENDATIONS

That the status quo remains where underground telecommunications cabling is required under Schedule 16.3C of the Tasman District Management Plan within the Central Business, Commercial, Mixed Business, Tourist Services, Heavy and Light Industrial and Rural Industrial zones, and the Residential Zone in the Richmond South and Richmond West development areas and Rural Residential Serviced Zone in the Richmond East Development Area.

That radio based telecommunications infrastructure be allowed as an option for subdivisions in the Rural zones that are not lifestyle or rural-residential developments or are remote from cable based telecommunication networks.

DRAFT RESOLUTION

THAT the Environment & Planning Committee receives the report REP11-11-09 entitled Telecommunications Infrastructure for New Subdivisions.

Wayne Horner
Subdivisions Officer

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1. Purpose

1.1 At the Environment & Planning Committee meeting on 25 August 2011 Mr D Freilich made a presentation regarding the provision of telecommunications services required by Council for new subdivisions.

As a result of this presentation the Environment & Planning Committee passed the following motion:

THAT a staff report be prepared regarding the options available to the Council to review the rules for telecommunications services for new subdivisions.

This report is made in response to that motion.

2. Presentation and Background to Telecommunications Service Provision

2.1 Presentation

Mr D Freilich was supported in his presentation by Mr R Grant and Mr S Christie, who raised a number of issues with regard to the requirement for underground telecommunications services at the time of subdivision. The main points raised are as follows:

a) They are concerned that Council requires underground telephone reticulation when subdivisions are approved and that there should be an option for subdivisions to be reticulated with wireless networks;

b) Purchasers of the new lots could be advised by a consent notice attached to the title of the land that underground cabling has not been provided and they could then make an informed decision;

c) The developer could provide ducts within the subdivision so that cabling could be installed following subdivision when required;

d) Telecom charge $2,300 per section and that does not include the provision of trenches or some installation works.

2.2 Background

For many years Council has required new subdivisions to be reticulated with a full range of services that include connections to Council's water supply, wastewater system and stormwater systems and including the provision of underground power and telecommunications services. These services are required under Schedule 16.3C of the Tasman District Management Plan (TRMP) within the Central Business, Commercial, Mixed Business, Tourist Services, Heavy and Light Industrial and Rural Industrial zones, and the Residential Zones in the Richmond South and Richmond West development areas and Rural Residential Serviced Zone in the Richmond East Development Area. Servicing within other Residential Zones is a matter over which Council has reserved control under TRMP Rule 16.3.3.1 (6) where the provision of services is controlled; and under Rule 13.3.3.1 (17) where the degree of compliance with the Tasman District Council Engineering Standards is a matter of control.

2.3 For all other zones, the availability and provision of services including network utilities is a matter of control or consideration depending on the circumstances of the specific subdivision proposal, with reference to Schedule 16.3A of the TRMP. Telecommunications or electricity servicing is usually not required for new rural lots larger than 4.0 hectares with no identified building site because:

a) sites of this size may not have a dwelling constructed on them;
b) with sites of this size there are a number building location options and relocation of the telecommunications and electrical connection point may be required once the building location has been determined which is inefficient and costly;
c) where no telecommunications or electricity reticulation has been required at the time of subdivision this is recorded within a consent notice attached to the title for the land.

A recent subdivision consent for the Wyllie property at Whanganui Inlet is another example of where telecommunications and electricity servicing were not required because of the remoteness of that site from the utility networks.

2.4 Connections to telecommunication services are usually required for rural lifestyle subdivisions, such as those in the Rural 3 Zones and in rural residential zones, as they have been regarded as being a reasonable expectation for that type of development.

2.5 Section 11 of Council's Engineering Standards and Policies 2008 deals specifically with the provision of telecommunications at the time of subdivision and is attached as Appendix 3. Under Section 11.4 of the Engineering Standards the design of telecommunications network should provide for a minimum of 10 Megabits per second (Mbps) with provision made for speeds up to 100 Mbps. In effect this requires a full ducted system where copper cabling can be replaced by fibre cabling in future.

2.6 Cell phones are now very common with more cellphone connections than fixed wire connections within New Zealand. Cellphone coverage has also improved within the Tasman District with three cellphone network operators providing service.

2.7 There has been a significant increase in the number of internet providers and broadband internet connections running over the existing networks, with ever increasing data volumes. A broadband connection is now required for all computers due to the volume of data required to update software, emailing, social networking and to keep virus protection up to date.

2.8 Over the last 15 years there has been significant growth and diversity of telecommunications services offered by network providers within New Zealand. Many of these services are provided over the existing cable networks using a combination of fibre and copper cables that have been progressively extended for new subdivisions.

2.9 Telecommunications services are now only provided by private companies operating on a fully commercial basis who need to provide a return for their shareholders. In the past the New Zealand Government in effect provided a subsidy for Telecom New Zealand to upgrade and extend their network within rural areas where this could not be justified on a purely commercial model. This is no longer the case and the augmentation of Telecom New Zealand's network and all other networks is done on a commercial basis only, which will in some cases result in a high number of people waiting for service.

2.10 Recently the New Zealand Government has committed funding to increase the availability of Ultra Fast Broadband (UFB) to 800,000 New Zealand households by 2019. UFB will deliver data at up to 100 megabits per second (Mbps) over a fibre cable, which is a very high data rate and could for example provide four high definition television channels at one time, or provide telecommunications services for a medium sized business. As part of this work Vodafone will also provide broadband at 5 Mbps or better to at least 70% of households within the rural areas via their cellular network.

2.11 More details of the UFB roll out are available on the Chorus and Vodafone websites with updated information being provided on a regular basis. The costs for a UFB connection via fibre or broadband via the Vodafone network have not been released as yet.

2.12 It should be noted that Council does not require a live connection at the time of subdivision, only that the network infrastructure be put in place. It can be some time before an allotment is finally sold and the new owner requests telecommunications services from a network provider and there may in some cases be a waiting list for service at that time.

2.13 I have viewed the Plans of Nelson City Council and Palmerston North City Council, and the Draft Auckland Plan. Underground telecommunications reticulation is required for new residential subdivisions in those Council areas.

The Draft Auckland Plan considers access to broadband as a Priority 2 Target to enable more people to work from home and thereby reducing congestion on roads. To date I have not been able to identify any Council within New Zealand that does not require underground telecommunications to be installed at the time of new subdivision for residential development.

2.14 The Telecommunications Carriers Forum (TCF), which represents all of the major telecommunications service suppliers operating within New Zealand, have stated that telecommunications service is an essential service and that telecommunications infrastructure should be installed at time of subdivision. Refer to Appendix 1, page 7.

3. Matters to be Considered

3.1 Considering the points raised in 2.1 (a) - (d) above, should Council amend the current requirement for underground telecommunications network connections to be provided at the time of subdivision in accordance with Schedule 16.3C, Rule 16.3.3.1 of the Tasman Resource Management Plan and Section 11 of the Tasman District Council's Engineering Standards & Policies 2008?

4. Financial/Budgetary Considerations

4.1 Councils infrastructure, roading and footpaths may be degraded as a result of telecommunications network installation post subdivision if it is not installed in a staged manner during the development of the subdivision. This would be particularly noticeable within a recently completed subdivision.

4.2 Council is not able to decline a Network Operators application to install network infrastructure within the road reserve. However Council is able to set conditions regarding location, method and reinstatement.

5. Options

5.1 I consider that there are four options worth assessing in light of the presentation:

1. To retain the status quo where new subdivisions are required to be reticulated with underground cabling with written confirmation from an approved network provider that it has been installed to their standards.

2. To not require any telecommunications servicing, leaving future owners of the new allotments to rely on the existing cell phone coverage or negotiate with a network provider for the telecommunications services they require.

3. To allow the option of reticulating subdivisions with wireless systems with written confirmation from an approved network provider that it has been installed to their standards.

4. To require ducts only to be installed at the time of subdivision to allow for the future provision of underground telecommunications cabling, relying on cell phone coverage until the individual allotments are provisioned with cabling.

6. Advantages and Disadvantages of Options

6.1 **Option 1** - Retain the status quo:

Advantages
Much more cost effective to install underground infrastructure during the early stages of subdivision construction due to trench sharing for services and lack of finished surfaces;

Less prone to contention where performance drops as the number of users increases;

Able to take advantage of the widest range of service providers;

Allows for a standard telephone connection;

Not prone to geographic or atmospheric issues that affect radio based systems;

Provides best long term performance and cost options, especially if using fibre, or able to be upgraded to fibre;

Disadvantages
Underground cabled connections are initially more expensive to install than radio options. However the cost is dependent on the capacity of any nearby existing network;

Lacks the mobility of cellular systems.

6.2 **Option 2** - To not require any telecommunications servicing at the time of subdivision:

Advantages
The individual lot owners would arrange their own telecommunications services on an as required basis, which could be via the cell phone network or a radio network provider;

The developer and ultimately the purchaser do not incur the initial cost of providing a telecommunications network within the subdivision.

Disadvantages
There are data limitations with cellular service both with speed and cost per megabyte for broadband connections;

There may be shading or areas of marginal service for both telephone and broadband services;

If an underground network is not installed at the time of subdivision a significant cost hurdle remains for individual lot owners to have a cable system installed after the subdivision is complete. This hurdle becomes greater as more stages of the subdivision are developed without an underground network progressively being put in place, resulting in only radio solutions being available in the long term;

If there were a number of owners seeking telecommunications services over a cable network underground services may be installed after completion of the subdivision at higher cost.

6.3 **Option 3** - To allow the option of reticulating subdivisions with wireless systems:

Advantages
Generally easier and cheaper to install than cable based systems. However this is dependent on the capacity of any nearby network infrastructure with capacity;

Disadvantages
Depending on the type of wireless protocol used, it is prone to contention issues (performance drops as the number of users increases) lowering quality of service;

Quality of service is highly dependent on line of sight. Slopes and furrows within subdivisions may mean some householders will not be able to receive a high quality connection or in some cases no connection at all;

Changes to natural landscapes can alter the quality of connection (e.g. tree growth or new building obscuring line of sight connections);

Some wireless plans, especially cellular one's have very expensive data caps. Currently they are suitable for a lower speed internet connection to check information and email, but not so suitable for households consuming large amounts of data such as is required for Youtube;

Lack of competition in the wireless market restricts householders ability to change service providers;

Lacks the high end and long term capabilities of a cabled fibre connection;

With no cabled connection, changing to a cabled service is not usually viable and therefore wireless service remains in the long term;

Internet-only telephone connections are lost if power or internet is unavailable.

6.4 **Option 4** - To require ducts only to be provided and installed by the developer at the time of subdivision:

Advantages
Would allow the main feeder cables to be installed within Council's road reserve at the time underground reticulation is installed with less degradation of Council infrastructure overall.

Disadvantages
Need for Council to maintain a record of the location of ducts and provide a location service for them otherwise they will be damaged over time;

Council will need to liaise with network operators regarding the design and layout of the ducts installed to ensure they can be used efficiently in future;

A feeder duct distribution system to each dwelling is still required which will be much more expensive to install after the subdivision has been completed with disturbance to Council's roading infrastructure.

7. Evaluation of Options

7.1 When weighing up the advantages and disadvantages of each option above my view is that a cable based system will be able to provide a greater range of network providers and services than for the radio based systems. The Ultra Fast Broadband (UFB) rollout will be using a cable based system within the residential areas around New Zealand which confirms the long term advantages of providing telecommunications services via cable based systems despite their higher initial cost.

7.2 It is considered that requiring connections to cable based networks remains valid for urban and rural residential density development. If underground cable based infrastructure is not installed at the time of subdivision it will create a cost barrier to the new allotments being reticulated at a later date.

8. Significance

8.1 This is not a significant decision according to the Council's Significance Policy because it does not trigger any of the relevant thresholds of that Policy.

9. Recommendations

9.1 That the status quo remains where underground telecommunications cabling is required under Schedule 16.3C of the Tasman District Management Plan within the Central Business, Commercial, Mixed Business, Tourist Services, Heavy and Light Industrial and Rural Industrial zones, and the Residential Zone in the Richmond South and Richmond West development areas and Rural Residential Serviced Zone in the Richmond East Development Area.

9.2 That radio based telecommunications infrastructure be allowed as an option for subdivisions in the Rural zones that are not lifestyle or rural-residential developments or are remote from cable based telecommunication networks. This option can be applied where appropriate on a case by case basis without need for any change to any rules or Schedule 16.3A in the TRMP.

10. Draft Resolution

THAT the Environment & Planning Committee receives the report REP11-11-09 entitled Telecommunications Infrastructure for New Subdivisions

Wayne Horner
Subdivisions Officer

APPENDIX 1

PRINCIPLES FOR TELECOMMUNICATIONS INFRASTRUCTURE FOR NEW SUBDIVISIONS

APPENDIX 2

THE DRAFT AUCKLAND PLAN

SECTION 11 TASMAN DISTRICT COUNCIL ENGINEERING STANDARDS 2008