

## **STAFF REPORT**

**TO:** Chairman and Members, Corporate Services Committee

**FROM:** Peter Darlington

**DATE:** 13 February 2007

**SUBJECT:** Broadband

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### **Purpose**

To background the current status of Broadband within our district, the potential future benefits, and to demonstrate how these can be enhanced through Council support and continued staff involvement with this technology.

### **What is Broadband?**

Broadband is a fast, permanent internet connection.

Not only is it 10 to 100 times faster than a dial-up account, it doesn't tie up the phone line so you can make and receive calls normally while you use the internet.

You pay a monthly fee for an 'always on' connection, so there's no need to dial in to get online. Just turn on the computer and you're connected.

### **What can it do?**

Because of the speed, as well as making web pages and e-mails arrive almost instantly, broadband opens up a whole new world of content. With a broadband connection you can enjoy the full range of internet services.

You will be able to download TV programmes (even in the HDTV format), music and software, share photos, watch DVD quality movies and play online games with thousands of other people. You will be able to make telephone calls and even videophone calls via your computer without using a telephone line and without incurring a national or international toll.

More importantly, broadband will be a key business tool for the 21st century, due to both its speed, and the fact that it is an 'always on' connection. The high speeds will enable businesses working with large files and high communications requirements to operate. These businesses could be medical, scientific, film, design, or digital call centre companies. The 'always on' aspect will enable

businesses with remote monitoring, alerting, security and maintenance services to work smarter.

### **What are the issues?**

In New Zealand there are several providers offering Digital Subscriber Line (DSL) connections such as JetStream. There are also a few offering high-speed wireless services. Very few offer extremely fast connections catering for large amounts of data at high speed.

A problem with the New Zealand market is that Telecom owns the copper lines and the exchanges, and has stifled the market by locking competitors out of these until the law changed earlier in 2006.

While Broadband via the copper telephone wire has proven to be effective in giving better internet services to households, it is a limited technology. Limited in both speed and the distance from the exchange in which it will operate. The extremely fast connections that will be required in the future are prohibitively expensive to build so the chances of a competitor to Telecom coming into the Tasman District are slim.

One of the possible ways to counter this lack of competition is for public organisations and central government to provide some investment to create a publicly owned fibre infrastructure that is an open network that any telecommunications company or any business can use. This will allow for cheaper local connections and increased competition to produce better services in the future.

The challenge is that the initial setup costs will be very expensive. Fortunately, a large amount of the work has already been done in Tasman and Nelson with no investment required by Council.

### **What is happening in Tasman and Nelson?**

The two most significant telecommunications advances in Tasman and Nelson have been the implementation of a region-wide wireless broadband network by Pacific.Net and a region-wide fibre network by Network Tasman. This means that a good chunk of the infrastructure required to run proper broadband in our district is already here.

As well as this, the Nelson and Marlborough Economic Development Agencies formed the Nelson Marlborough Inforegion (NMI) group to plan for the development of future broadband services and uptake within the top of the South Island.

The participant members of this initiative are;

- Tasman District Council
- Nelson City Council (and Nelson Regional EDA)
- Marlborough District Council (and EDA)
- NMIT
- The Loop schools (represented by Nayland College)
- Nelson Marlborough DHB

This initiative was successful in gaining \$1.8 million dollars in funding from the central government Digital Strategy Broadband Challenge fund. Provisionally, this funding will go towards extending the fibre network around the Motueka CBD and from Blenheim to Picton.

As Council's representative on the NMI, I have been involved in the development of broadband in the region since the original Project Probe initiative in 2002.

### **What are the benefits for our District?**

While Broadband may be seen as 'home entertainment' technology and not particularly applicable to Council's core functions, we should not underestimate the business, social, community and wellbeing improvements that this technology can make to our region. We should also not expect that, if we don't do it, a commercial company will come in and do it for us. Just like roads and ports were in the past, Broadband will be a key contributor to our prosperity in the future.

Some of the potential benefits are;

- Access to extremely fast, high quality 21<sup>st</sup> century telecommunications services for a good percentage of our residents.
- A high speed central network backbone in Tasman will allow for better services into rural areas.
- Providing cheap local access to local data for users and organisations in the region.
- Will maintain local data connections if Wellington or Christchurch suffers major network outage or civil emergency.
- Access to multiple broadband providers for more competitive services.
- Better internet/broadband services for home, businesses and schools.
- The District not being left behind in the information age.
- More opportunities for local services such as free calling, free/cheap video-calling, local radio and digital television services.
- More opportunities will help to keep our young people here, or attract them back to the District after tertiary study.
- Will help to attract new businesses here.
- Will help to make current businesses more efficient.

## **Where to from here?**

The challenge for the region, moving forward is how we can ensure that the investment to date is not wasted, and that the opportunity to realise the community, recreation, economic and health benefits is taken.

This is also a chance for Council to ensure that a certain amount of telecommunications infrastructure remains in public hands ensuring open access into the region for any providers in the future, maximising competition and minimising the potential for another telecommunications monopoly controlling our access in the future.

## **How should Council be involved?**

There are several ways we can do this;

1. Contribute to the growth of the network
  - a. Laying fibre ourselves, where appropriate.
  - b. Make ducting for fibre available as part of road or pipe utility works.
  - c. Make future Council office connections through the fibre network rather than an outsourced provider such as Telecom.
2. Encourage 'wired' subdivisions in our planning documents and decisions
  - a. Make ducting for fibre compulsory as part of subdivision consent approval process.
3. Develop a Regional Peering Exchange
  - a. Be on the governance board to oversee the design and implementation of a regional peering exchange similar to Citylink in Wellington (<http://www.citylink.co.nz/>).
  - b. Ensure peering exchange governance maintains the entity in public hands and open to all-comers on an even playing field.
4. Develop shared region-wide Council online services.
  - a. Regional GIS
  - b. Regional Emergency Management
  - c. Shared library interloan services

## **What are the risks and issues?**

The financial risks are not large, as a lot of the investment has already been done, and there is government funding for future investment. There is a cost to running a peering exchange however these are not large and peers would pay to belong to the network. Peers could initially be made up of the three councils, health board, NMIT, The Loop schools, Network Tasman, Nelson Electricity, Marlborough Lines etc. With several local businesses and central government

offices likely to join as well, there is no reason why the exchange could not be self-sustaining at the very least (Note: I am currently leading the technical group looking at the specifics of setting up a peering exchange in Nelson/Tasman including initial and ongoing costs).

There is also an issue of ownership. The three top of the south councils would probably not want to invest in ownership of any Broadband services company or peering exchange as this would require the creation of a new Council Co-owned Organisation (CCO). One option is for the Nelson and Marlborough Councils to have the entity managed through their respective Economic Development Agencies, but this will only be viable if the NMI continues to be fully supported by local public sector agencies.

As well as this, the fibre infrastructure must be managed like any other infrastructure that currently exists in our region.

The biggest risk, I believe, is if we do not take this opportunity now, and the initiative falls over. As well as wasted investment by the Network Tasman Trust, we will continue to be reliant on whatever telecommunications services Telecom chooses to provide in the future. Richmond and possibly Motueka will receive reasonable upgrades to the network, but all our other residents and ratepayers will receive the bare minimum.

### **What are the Costs?**

The costs for laying of fibre around the region are being funded by Network Tasman Ltd with extra funding from the central government Broadband Challenge fund.

The costs to establish a peering exchange are being investigated at present. The operating costs will include the following;

Room lease for telecommunications equipment.	Unknown. Possibly free if located at a public organisation.
Computer racks and switches	\$50,000
Gigabit connection to NTL fibre	\$15,000 p.a.
Gigabit connection to WIX*	\$25,000 p.a.
Service and Support	\$10,000 p.a.

\* = Wellington Internet Exchange

Note these costs are just suggested ones until the peering exchange review is completed, probably around May 2007. Councils may reasonably expect the costs to be in the ballpark of \$50,000 start-up and \$50,000 annual operating costs, shared amongst the NMI participants. With up to five public organisations being involved in the NMI, this may work out to about \$10-15,000 per organisation.

A peering exchange will also generate income, however. Any organisation will be able to join up to the high speed fibre and will be charged a rental to belong. For example, ten organisations paying \$300 per month would add up to \$36,000 per annum income for the exchange.

Ideally, the NMI would like the peering exchange to be a cost neutral entity within 2-3 years of establishment.

### **Timeframe**

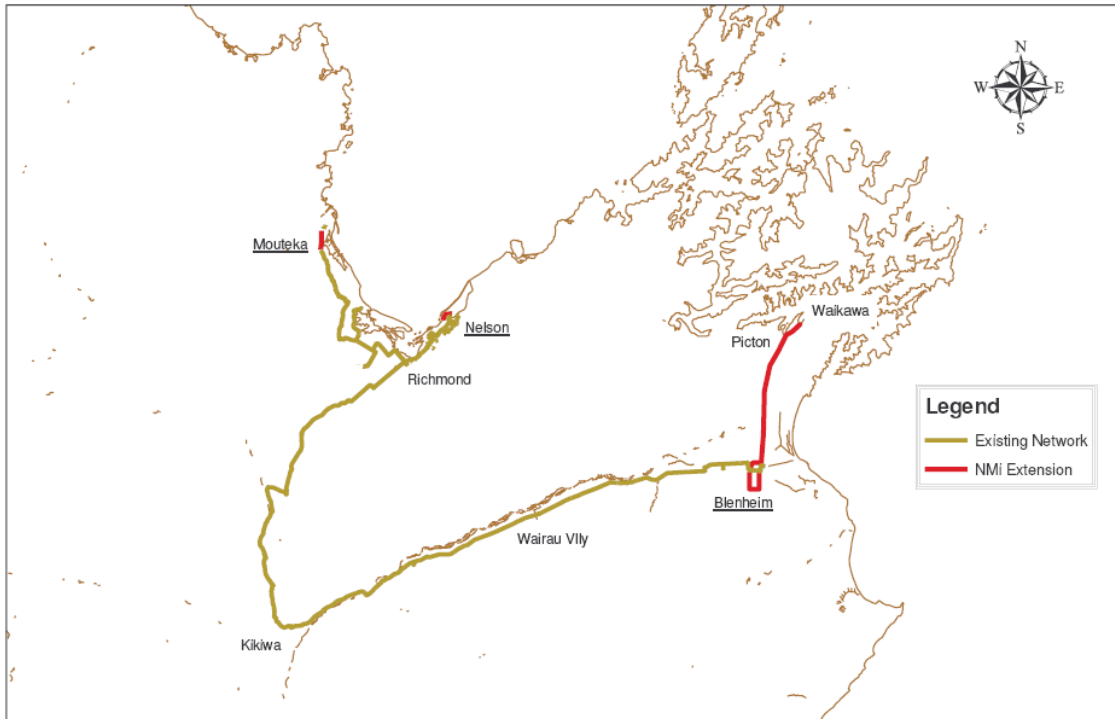
October 2006	Nelson Marlborough Inforegion awarded \$1.8 million dollars as part of the Digital Strategy Broadband Challenge.
Feb - May 2007	Peering Exchange Investigation
Ongoing 2007	Central Government Broadband Challenge review to work out progress made on initial funding round (Note, this will dictate how the future rollout is managed).
May – Aug 2007	Confirmation on establishment and governance of NMI including management of infrastructure contracts and peering exchange.
Aug 2007 – Mar 2008	Contract negotiations and peering exchange established.

### **Recommendations**

- **Council recognises that Broadband infrastructure is important to the future development of our district, and supports the work done by the Nelson Marlborough Inforegion.**
- **That TDC staff continue participation in the Nelson Marlborough Inforegion to define the exact costs, and structure involved in setting up a local Internet peering exchange.**
- **That Network Tasman and Pacific.Net be given the opportunity to present to Council a network operator’s view on how best to increase broadband coverage in our district.**

Peter Darlington  
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## Appendix One – Regional Fibre Map



Network Tasman Limited  
NMI Broadband Challenge

Regional Dark Fibre network

Four areas of extension are proposed as part of central government funding.

1. Motueka CBD
2. Port Nelson
3. Blenheim South
4. Picton/Waikawa

# Appendix Two – Motueka Extension

