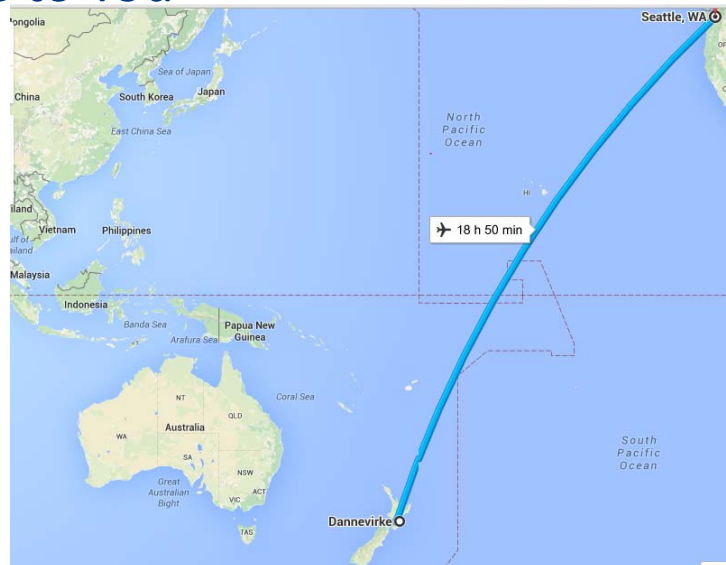


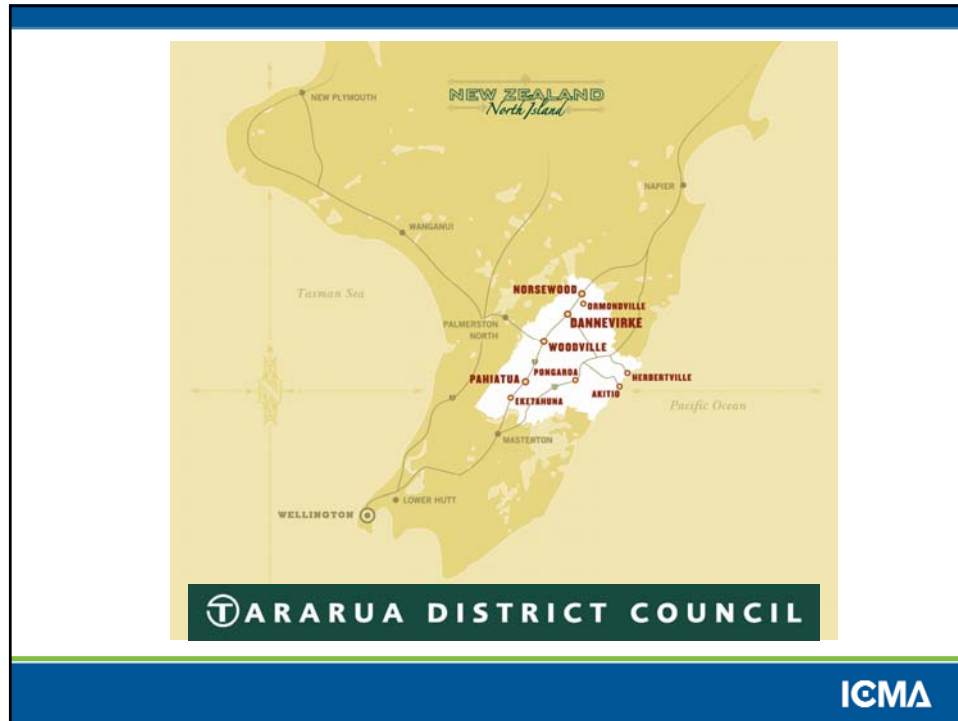
Broadband – Surfs Up (Kiwis Surfing)

Peter Wimsett
ICMA Conference Presenter



Me to You





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**Peter Wimsett -
making the
NZ Prime Minister,
John Key,
concentrate**



- A different perspective
- Inspiring
- Finding options:
 - Make it easy for the private sector to do their thing
 - Help build their business case and build local telco competition

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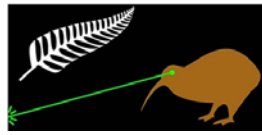
NZ Background

Not a bad place to live – many similarities to beautiful Seattle and up the road in BC

and ... where debating a new flag is the most pivotal subject



Vs?



(Flag of dangerous kiwi with laser beam eyes + a silver fern)

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NZ State of Broadband



- NZ GDP grew 3.2% to March'15 ; but rapid slowing now underway
- Quickly developing a more highly-skilled economy – Tech Industry now 7% of GDP
- Central to creating a digital nation, the Government has invested \$1.5 billion to roll out [Ultra Fast Broadband](#) - priorities of businesses, schools and health

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NZ State of Broadband



- Government funding/resources to 75% of NZ population
- “Open access” required
- NZ Government have price and delivery controls
- Now aiming for 80%-85%
- Councils contributing to build & encouraging use
- Sparsely populated areas are still challenging

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How it all started: 2006 Broadband Innovation

The Tararua Influence:

- Population 17,500
- Area of 4,240 km²
- Road network of 2,000 km
- Rural community
- Under-served by telcos
 - Two beaches
 - One Nobel Laureate for Genetics (Wilkins)
 - One NZ famous beer - Tui



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Tararua Laying Fibre - 10km at a time



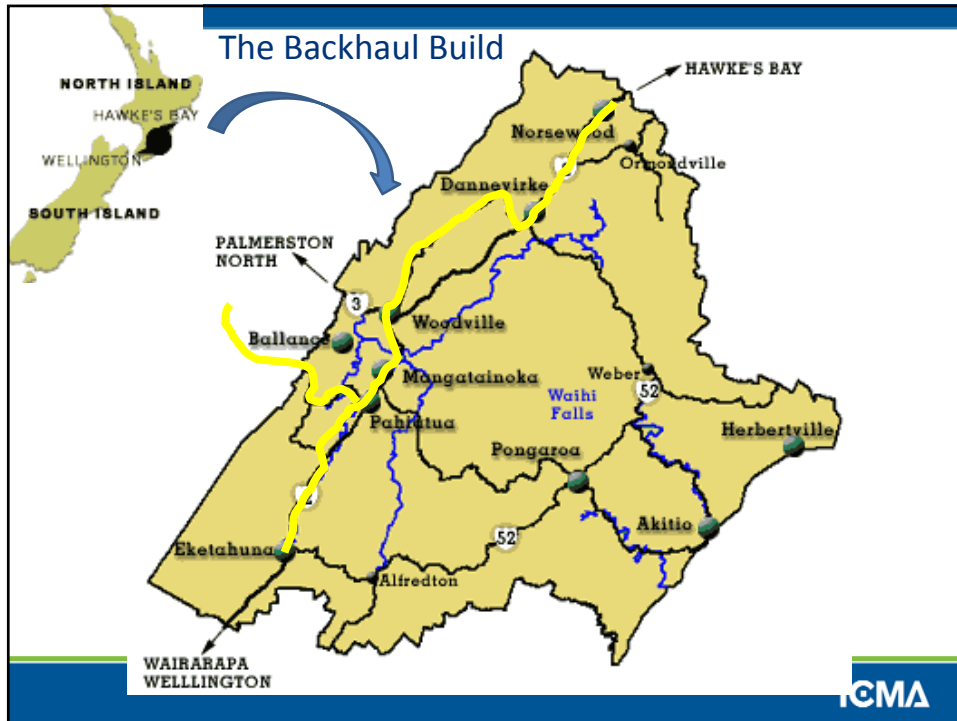
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Funding from Wireless Infrastructure

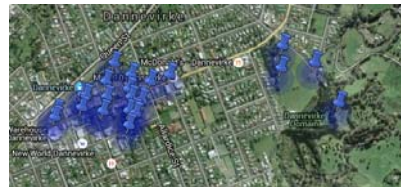
Return On Investment (ROI) – 9 years



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**We built 55% of Telecom NZ Backhaul Budget(!)
and partnered the first
free Wifi (nodes)**



- In 2007 we had a 100mbps internet feed
- In 2008 we moved to 1gbps District network
- “Level entry” is now 80 gigabits per second
- Indefeasible right of use—to end of life 40 years
- A permanent underground duct network

We nailed it... Taking the Opportunities

Council determined it could make a difference to telco's, and we succeeded:

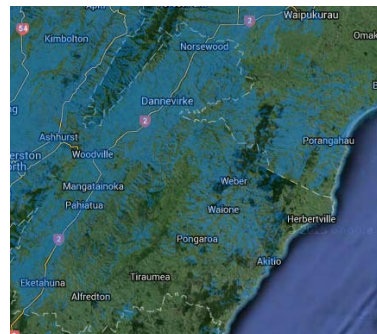
- Making it easier and cheaper to work in the area
- Providing, where possible, conduit to run fibre cable to properties
- Providing sites for wireless communication, telco buildings or gear
- Being anchor tenant for companies running inter town fibre connections
- Participating in national programs to increase access to digital services for all our residents and visitors
- Lobbying central government for leadership and funding for under-served communities

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What "Backhaul" fibre now looks like:

• Gbit+ connected PNIX peering switches in each town giving a core foundation for:

- Health sector
- Businesses hook-ups
- School loop
- Town crime prevention cameras
- Free CCTV
- Wireless to the valleys & coast:
 - Pale blue areas have good wireless;
 - Green areas need some work:
 - Demand aggregation
 - & local champions



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Public Private Partnerships

- Private investors will not build networks based on economic or community benefits, it's not sane
- Councils need to provide infrastructure for their community
- A mix has meant:
 - Council / Government anchor tenants or sponsors for fibre networks to connect schools, council resources
 - Private investor commits money to connect business

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Three and half hours with the PM...

- Government took our experience and advice - went for:
 - sharing costs with telcos
 - connecting health, education and business
- And added population centres (free netflix for all)
- Our partner and friendly innovative local telco/ISP is now the “Most Trusted” ISP in NZ – (Consumer NZ)

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We did it ALL!!

Council Sorted:

- Land for telecommunication “Point of Presence”
- Buildings for Wifi nodes and wireless “shots”
- CCTV off buildings
- Use of old Council pipes to sub-duct
- Free Wifi hotspots throughout towns and at hospitals
- Gigabit ready library networks and free internet
- Even a Data Centre is now underway

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CCTV – Creating Network Demand

(Extensive Crime Prevention Camera System in Dannevirke Streaming Full HD over fibre)



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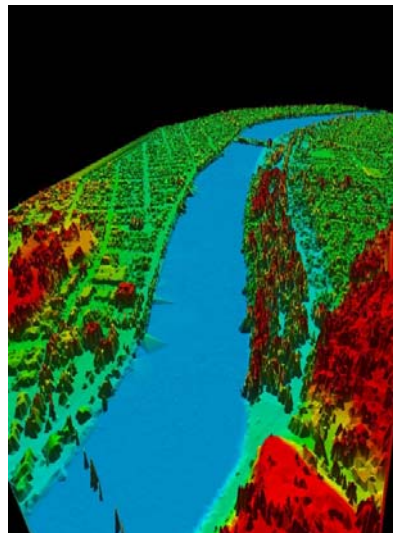
Right Now in NZ

- Finishing the NZ fibre roll out
- Good quality wireless to the country folk
- *“What you get/no sharing”* - Unlimited data, amazing minimum speeds with Committed Information Rates
- Backhaul - High capacity with redundancy: multi-route, multi-provider to multiple sites
- Support for Software as a Service
- Potential for councils to share services and sites at 10gbps

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What's the Next Big Thing that Needs Better Broadband?

- 5K “retina” streaming Video?
No:- 20mbps streaming is fine
- More likely intensive imaging
e.g. Size of files 600-700MB for each image for:
 - Instantaneous X-Ray
 - 3D and LIDAR



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Industry Game Changers?

- *Non-line-of-sight gigabit connections* e.g. Redstone Technologies start-up
- *The far future? Quantum Physics & laboratory trials of teleporting data – but this may still be via fibre!*

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Questions/Comments?



