Tasman District Council
MBIE ROI Response

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<th>Document Prepared By</th>
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Access to supporting documentation throughout this document is via hyperlinks. In the event of problems, please contact Tara Fifield (tara.fifield@tasman.govt.nz) or Richard Liddicoat (richard.liddicoat@tasman.govt.nz) for soft copies or access to Sharefile.
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Executive Summary

This ROI-Support is in response to the Government’s initiative to achieve greater economic and social outcomes in New Zealand through improved broadband and mobile connectivity. It is supported by a number of Tasman organisations, community groups and individuals. Tasman District Council seeks to share in the three programmes: Ultrafast Broadband 2 (UFB2), Rural Broadband Initiative 2 (RBI2) and Mobile Black Spot Fund (MBSF).

This ROI is important to Tasman’s residents as high quality broadband and mobile services are critical to the economy of the region and the social connectedness of its residents, many of whom live in scattered communities and rural areas throughout the District.

What is proposed for Tasman

Council’s objective is that for all Tasman communities and end users of broadband services will have:

1. Broadband available on a “Location Agnostic Basis” (LAB). Under a LAB model, all users whether urban or rural, have equitable access to high quality broadband at an affordable cost.
2. Minimum Quality of Service (QoS) required to the end user, both for upload and download. Providing 150-300mb/s is the optimum for the end user.
3. In a step-change towards that future-proofing, Council would seek to establish 50mb/s as an initial base minimum requirement for newly-funded services, with regular, scheduled upgrades of equipment towards achieving gigabit delivery.
4. Multiple broadband supply options are preferred, which meet minimum Quality of Service levels. The end buyer can decide upon who will supply their broadband dependent upon the QoS and service provided by the supplier.
5. Fibre link with minimum of 1GB/s Ethernet bandwidth delivery to any point of presence at wholesale pricing, where servicing a rural school, rural community or rural health centre.

Compliant response with proposed alternative solution

While the Tasman District Council response meets the requirements of the ROI, it is based on a model of location agnostic broadband delivery. This model would operate and continue to provide a high and consistent Quality of Service for broadband delivery, regardless of the circumstances or the location of the community or family receiving that broadband service.

Reduced delivery cost in Crown interests

The effect will be to lower the cost of the delivery of high quality broadband services, reduce the undue reliance upon a limited number of large providers, support the enhanced and more rapid delivery of a much improved national standard for broadband delivery, whilst reducing the overall cost of delivery and delivering much better “bang for buck” relative to the capital invested by the Crown.

This ROI response from Tasman District Council proposes to deliver a better approach to the delivery of broadband infrastructure and services across the Tasman region. This is defined as “Location Agnostic Broadband” (“LAB”).
The Top of the South Island councils (Marlborough District, Nelson City and Tasman District councils) are used to working collaboratively on a number of shared services. Tasman District Council is aware that Network Tasman is bidding for business across the Top of the South. We are happy to work alongside Network Tasman (or any other agency) on services across the Top of the South.

There is a national level issue with broadband

Further research and consultation by Council and our advisors with other councils, together with a wide range of local and national infrastructure providers across the broadband domain, indicate that the issues identified for Council by the Digital Infrastructure Audit are common across communities, cities and regions across New Zealand.

Council is firmly of the opinion that this is a national level issue affecting us all.

High quality broadband is a community, regional, national good

The availability and delivery of broadband to the population of the Tasman region is directly analogous to the roll-out of television in the early 1960s, which was seen to be in the interests of the individual, community, regional and national good. The delivery of broadband to the end user is similar.

Our objective is for an approach that delivers good broadband and mobile services across the Tasman region and we are happy to work with a regional or national provider to achieve this objective. Accordingly a regional approach has been taken to solutions development in the interests of all Tasman residents, to be able to deliver “Location Agnostic Broadband”, at a very high Quality of Service to all of our community, regardless of where they live. This removes the so-called urban/rural divide and provides an end user Quality of Service focus for delivery.

Following such an approach allows the region to meet the needs of urban and rural communities, travellers and tourists; it will lead to increasing connectivity on a prioritised basis, where communities which are prepared to themselves contribute may improve their chances of high quality broadband and mobile connections; it will allow rural people to cross the digital divide and run businesses or engage with the world on a similar basis to urban dwellers.

Recognising commercial realities in the interest of the buyer

Council recognises the commercial nature of broadband delivery across the region. It proposes the establishment of a regional delivery framework under which all towers capable of providing wireless broadband to rural and distance communities can be made available for co-location at minimal cost. This would expand wireless broadband and mobile telephone coverage at a fraction of the cost spent thus far by RBI1 or under the normal commercial delivery models of the mobile phone companies. When all providers are able to offer a service, on an equal footing, the end consumer can choose the provider with the best quality and consistency of service.

Funding sought for “Location Agnostic Broadband”

Population-based funding is sought for Tasman District Council from the funding pool established for UFB2, RBI2 and MBSF, based on Tasman’s per capita share (2013 Census figures) of overall funding across the three programmes, at a minimum level of $4 million.
We would also seek recognition in the funding allocation, of the fact that Tasman District receives over 700,000 visitors per year. These visitors place additional demands upon the capacity of our broadband and mobile services. The Tasman District needs to be in a position to provide a high level of service at times of peak tourist demand.

[Read the letter of support from Nelson Tasman Tourism]

The funding equates to Tasman’s per capita share (2013 Census figures) of overall funding across the three programmes.

**Supported by legislation and local bylaws**

The implementation of Tasman District Council’s “LAB” proposal may require Central Government and Local Government Policy Changes to rapidly implement policies and legislation to allow an integrated and whole of region approach.

The Council is subject to legal and regulatory processes and obligations, including those under the Local Government Act 2002, which will need to be complied with before the Council can enter into any final and binding arrangements.

**Recognising local governance and planning requirements**

It is noted that the MBIE ROI process is asking councils to consider co-investment options, including providing funds to Crown Fibre Holdings at no cost, with no ability to select or manage suppliers, who may be locally based. This simply does not meet with Council’s investment processes or policy requirements for sound governance and planning.

Council is prepared to make a commitment to work with suppliers to get access to our meteorological stations and to provide support with facilitating and advocating where suppliers may struggle to get points of presence.
Introduction

The Tasman District is located in the north west of the South Island. It covers the area from the boundary of Nelson City in the east, to past Murchison in the south and Golden Bay in the north-west. Tasman Bay is located to the north.

The main population of the Tasman District is centred in Richmond which is the largest and fastest growing town in the District with an estimated 13,606 residents as at June 2013. Motueka is the next largest town, with an estimated 6,687 residents as at June 2013. The District contains 32 other smaller but geographically distinct communities, 14 of which contain a reasonable population. Tasman District had a total estimated resident population of 48,800 at June 2013, which is 1.1% of New Zealand's population.

Tasman District is a high population growth area with the population expected to increase to 55,201 by 2039.

The Tasman District is known for the natural beauty of its landscapes. Fifty-eight percent of Tasman District is national park - Nelson Lakes, Kahurangi and Abel Tasman National Parks. There are a range of other forests and reserves in the area, including the Mount Richmond State Forest Park and Rabbit Island.

The District is famous for its wonderful lifestyle and the outdoor adventure and tourism activities, particularly in the national parks, in Golden Bay and around the Murchison area.

The District’s wonderful natural features and pleasant sunny climate year round makes it an attractive area for lifestylers. Many people who live in the settlements and rural areas of the District run businesses from their properties.

The top five industries in the area are horticulture, forestry, fishing, agriculture and tourism. These provide the economic base for the community. A range of other industries are growing in importance to the local economy, including aquaculture, research and development, information technology and industries using the natural products in the area.

Tasman District covers 14,812 km² of mountains, parks, waterways, territorial sea, and includes 812 km of coastline and the adjoining sea out to territorial sea limits.

This ROI is important to Tasman’s residents as high quality broadband and mobile services are critical to the economy of the region and the social connectedness of its residents, many of whom live in scattered communities and rural areas throughout the District.

It would enable greater diversity of business activity and through this reduce reliance on the primary industries in Tasman, which are subject to significant economic fluctuations. It would support retention and attract a younger population. At a minimum it would assist the District being more competitive for a younger workforce. It would also help increase productivity for our key industries and enable Tasman to make a greater contribution to New Zealand’s economy.
Map of Tasman District
Census figures:

<table>
<thead>
<tr>
<th>Column1</th>
<th>Census 2013 census usually resident population count</th>
<th>Census 2013 total households in occupied private dwellings</th>
<th>Census 2013 Median household income $</th>
<th>Census 2013 Percentage of Households with Access to the Internet</th>
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<td>Golden Bay</td>
<td>3,756</td>
<td>1,572</td>
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<td>Takaka</td>
<td>1,236</td>
<td>531</td>
<td>37,900</td>
<td>67.80</td>
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<td>Aniseed Hill</td>
<td>687</td>
<td>231</td>
<td>86,200</td>
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<td>Hope</td>
<td>1,149</td>
<td>399</td>
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<td>Best Island</td>
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<td>Ranzau</td>
<td>804</td>
<td>279</td>
<td>68,000</td>
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<td>Richmond Hill</td>
<td>69</td>
<td>24</td>
<td>75,000</td>
<td>87.50</td>
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<td>Brightwater</td>
<td>1,749</td>
<td>627</td>
<td>66,500</td>
<td>81.34</td>
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<tr>
<td>Wakefield</td>
<td>2,106</td>
<td>726</td>
<td>65,800</td>
<td>80.58</td>
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<tr>
<td>Mapua</td>
<td>2,016</td>
<td>807</td>
<td>60,700</td>
<td>84.01</td>
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<td>Inlet-Motueka</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Kaiteriteri</td>
<td>792</td>
<td>309</td>
<td>48,800</td>
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<td>Motueka Outer</td>
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<td>52,400</td>
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<td>Rabbit Island</td>
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<td>Lake Rotoroa</td>
<td>615</td>
<td>270</td>
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<td>Murchison</td>
<td>492</td>
<td>222</td>
<td>45,800</td>
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<td>Tapawera</td>
<td>393</td>
<td>159</td>
<td>41,700</td>
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<td>Riwaka</td>
<td>870</td>
<td>348</td>
<td>52,000</td>
<td>71.55</td>
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<td>Richmond East</td>
<td>5,994</td>
<td>2,235</td>
<td>55,900</td>
<td>75.30</td>
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<td>Richmond West</td>
<td>6,282</td>
<td>2,496</td>
<td>55,000</td>
<td>74.40</td>
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<td>Motueka West</td>
<td>3,669</td>
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<td>0</td>
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<tr>
<td>JACKETT ISLAND</td>
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<td>3</td>
<td>0</td>
<td>0</td>
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<td>Oceanic-TaInan Region</td>
<td>0</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>Inlet-Ligar Bay</td>
<td>12</td>
<td>9</td>
<td>0</td>
<td>0</td>
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* The Census question asking for the percentage of households with broadband access is incorrectly stated.

1. The 2013 Census data, as provided, records the number of occupied households with internet access.
2. This is not the same as broadband access. Many rural and Tasman homes are still on dial-up speeds, well below the threshold set for any measure of broadband connectivity.
Response to ROI Requirements

Tasman District Council welcomes the opportunity to contribute to the Government’s strategy to enhance connectivity in New Zealand.

This is a region with two ribbons of urban development stretching from our main centre at Richmond along the coast to Motueka and beyond, and another from Richmond to Wakefield and beyond; there are scattered rural communities and dwellers behind these ribbons living in and around long valleys; Tasman’s north-western corner takes in the isolated communities of Golden Bay.

Council seeks to share in the three programmes: UFB2, RBI2 and MBSF.

There is considerable potential to assist many of Tasman’s communities, particularly if Government is able to support the model of delivery proposed with “Location Agnostic Broadband”.

There can be no doubt that Council, Tasman District organisations and our communities have embraced the opportunities presented by the Government funding as the MBIE ROI response requirements outline. This is demonstrated through a quickly arranged survey of broadband and mobile coverage that, in just a few weeks, attracted over 1,200 responses.

Public forums and engagements at local libraries and schools were also organised. Council used its newspaper advertisements to promote the survey and meetings.

Tasman District Council - Registration of Interest - Support

Tasman District Council sees the improvement of connectivity as critical to the social and economic success of our region. We are a high population growth area. Under the Growth Strategy 2014 these are some of Council’s strategic objectives which are supported by improved connectivity:

- **Provide for a range of living choices**: The Council will provide a range of different zoning types to accommodate the diverse living aspirations of our community, who may want to live in intensive urban environments, in rural productive farms or interdependent rural communities.
- **Proactively meet the needs of our changing District**: The Council will research, plan and provide infrastructure and services to respond to the changing demographics of the District, including an ageing population and reducing average household size. For example, the Council has undertaken the Richmond intensification study to determine how to best develop the District’s largest town.
- **Support growth in the right places**: The Council will support growth in our settlements, taking into account the suitability of the land for growth, and the ability to provide infrastructure and services.
- **Enable the growth of business**: The Council will ensure the provision of adequate land zoned for businesses.
- **Target funding to support growth**: The Long Term Plan 2015-2025 provides for up to $20 million in growth-related projects.
- **Spend wisely for maximum benefit**: Council infrastructure will be prioritised to maximise the overall benefits to the community.
- **Fund growth sustainably**: As much as it is practicable, the Council will use Development Contributions and Reserve Financial Contributions to fund the cost of growth.
- **Work together**: the Council will work with the District’s businesses and residents in the implementation of the growth strategy.
The most significant demographic change occurring across the District (and country) is the ageing of the population. In addition, household composition is becoming more diverse, and the average household size is also reducing.

Tasman District Council’s prioritisation recommendations are based on a combination of:

- Tasman District Council Growth Strategy 2014
- Community Survey - ROI
- Community-driven engagement in support of ROI

There has been relatively little time to cover the full gamut of community engagement; the intention is to amplify community response in the Digital Engagement Plan, including iwi engagement.

**UFB2**

Council has identified priority areas for the roll out of UFB in the Tasman District. The Council’s Growth Strategy and the data collected through the community survey and meetings supported the need for UFB in major towns like Motueka and in major growth areas like Mapua, Wakefield and Brightwater. Further information in support of these priorities is outlined in the remainder of this section.

(a) Maps for the urban boundaries for each town - *See Appendices: Township Maps*

(b) Census 2013 data - *See Appendices: District Information and Demographics*

<table>
<thead>
<tr>
<th>2013 Census</th>
<th>Motueka</th>
<th>Wakefield</th>
<th>Takaka</th>
<th>Pohara/Ligar Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>4,119</td>
<td>2,106</td>
<td>1,236</td>
<td>543</td>
</tr>
<tr>
<td>Number of households</td>
<td>1,557</td>
<td>627</td>
<td>531</td>
<td>236</td>
</tr>
<tr>
<td>Median household income</td>
<td>$52,400</td>
<td>$66,500</td>
<td>$37,900</td>
<td>N/A</td>
</tr>
<tr>
<td>Percentage of households with broadband*</td>
<td>71.87</td>
<td>81.34</td>
<td>67.80</td>
<td>70.80 (3*)</td>
</tr>
<tr>
<td>Population growth projection to 2029</td>
<td>6,864</td>
<td>2,260</td>
<td>1,175</td>
<td>581</td>
</tr>
</tbody>
</table>

* The Census question asking for the percentage of households with broadband access is incorrectly stated.

1. The 2013 Census data, as provided, records the number of occupied households with internet access.
2. This is not the same as broadband access. Many rural and Tasman homes are still on dial-up speeds, well below the threshold set for any measure of broadband connectivity.
3. Where separate data for this area is not available the Golden Bay (excluding Takaka) has been used.

(c) Statistics New Zealand population growth and other projects:

*Descriptions of business activities by town* (includes number of businesses)

*GDP per capita*

The above information as provided by the Nelson Regional Economic Development Agency is available in *See Appendices: District Information and Demographics*

(d) Prioritise the towns or other urban areas beyond existing deployment in the order which you believe would benefit the most from UFB2, and the rationale for this (for example, population growth areas).

Although there has been the required ROI engagement with Chorus as a potential supplier, it is not yet clear if Chorus will bid to provide fibre to Tasman under UFB2. However, Council was advised in
its ROI meeting with locally-based suppliers that Network Tasman will bid to install UFB2 and Fibre to the Premises (FTTP) fibre in Tasman particularly in:

- Motueka
- Mapua
- Brightwater
- Wakefield

Additionally, Network Tasman is proposing to build fttp infrastructure, provided the appropriate access is available via RBI funded Chorus access points at:

- Collingwood
- Takaka
- Pohara
- Murchison
- Tapawera

This would encompass almost all of the remaining ‘urban’ area of Tasman. Council is wholly supportive of such extensions being provided by any fibre supplier. The Network Tasman list includes all of Council’s priority list and beyond. However, given the ROI’s requirements for priorities to be identified, the following is Council’s prioritised list.

Population figures used in the ROI-support response are sourced from Tasman District Council’s 2014 Growth Strategy unless otherwise specified.

The priority areas for UFB2 identified by Council’s processes are:

**Priority 1: Motueka and Mapua/Ruby Bay**

Motueka is the second largest population centre outside of Richmond. Apart from Richmond, one of the two major population growth areas in the Tasman District is the corridor from Richmond via Mapua/Ruby Bay to Motueka. The projected population increases in the major settlements along the corridor include a 23.5% increase in the Mapua/Ruby Bay area, a 16.2% increase in the Coastal Tasman area and a 1.8% increase in Motueka between 2014 and 2039. These figures are taken from the Council’s Growth Strategy 2014, which was based on the Statistics New Zealand medium population projections. Our evidence is that the figure for Motueka is much too low. In the last year Council issued 46 new building consents in Motueka township. This is a 0.7% increase in just one year. If that percentage increase is projected out to 2039 there would be a 17.5% increase in Motueka’s population.

Motueka and the surrounding rural areas support a wide range of internet-dependent businesses and the area is a key tourism gateway including access to the Abel Tasman National Park, and both Motueka and Mapua form a significant part of the Tasman’s Great Taste Trail - a key walk/cycleway tourism initiative.

Motueka has a dynamic community driving change and growth, as evidenced by Motueka 2030 (http://www.visionmotueka.org.nz/motueka2030/index.html) - their recent survey identified broadband access as a key priority.

Evidence of the engagement of Motueka 2030 on a range of community issues can be seen here: http://www.visionmotueka.org.nz/motueka2030/results.html#survey.
Equally Motueka demonstrates a solid foundation for the uptake of UFB and Rural Broadband through outcomes such as MotuekaOnline being a finalist in the Community Website awards. ([http://www.motuekaonline.org.nz/news/stories15/100615s1.html](http://www.motuekaonline.org.nz/news/stories15/100615s1.html)).

Motueka also demonstrated community appetite as an individual town through the highest response to the ROI survey circulated by Tasman District Council - accounting for 14.5% of responses.

Motueka’s population currently has a median age of 41.7 year and is looking at a median increase in age of 9.8 years to 51.5 years by 2031. Social inclusion and medical support will be significantly improved by equitable access to broadband. This is an issue not just for the town centre but also the surrounding areas as will be reflected in our comments on RBI2.

Part of this priority includes the Mapua/Ruby Bay area which is on-route to Motueka from Richmond. Mapua/Ruby Bay is a high growth area with a large number of businesses being run from homes. It is also a very popular tourist site all year round, but particularly over the summer period. As noted above, it is a key link in the popular cycle route – Tasman’s Great Taste Trail which has central government support.

**Priority 2: Wakefield and Brightwater**

The Richmond/Hope/Brightwater/Wakefield corridor represents the second major growth area in the Tasman District. Demand is growing for commutable living areas within easy reach of both Richmond and Nelson - with forecast growth of 31.5% for Brightwater and 27.5% for Wakefield by 2039. The average household size is forecast to be higher than Motueka - which along with the lower forecast median age reflects the commuting demographic for this area and a high percentage of households with children. The Richmond/Brightwater/Wakefield corridor is also part of Tasman’s Great Taste Trail, an important tourist attraction and part of our strategy to support economic growth in our outlying settlements.

A full community engagement exercise is currently underway in Brightwater/Wakefield assessing long-term population and business growth, including a strategy and draft plan change for each township.

**Priority 3: Takaka/Pohara/Port Tarakohe - Golden Bay**

The whole of Golden Bay has a high concentration of networked, both digitally and in real life, organisations and industries. A specific challenge for this area is the high loading during a relatively short tourist season, which can see the non-resident population increase dramatically. Good internet and mobile phone coverage is integral to attracting visitors during the vital tourist window. This area is also a gateway to the Abel Tasman National Park. Household size is projected to drop which will require a greater number of dwellings to house the same population size by 2034. Port Tarakohe is a working port representing a significant growth opportunity for the bay.

There is a strong agricultural sector, including a Fonterra milk treatment plant, which would benefit from UFB2 and RBI2.

Again a strongly motivated community is driving the demand for improved connectivity, with the overall ROI survey response for Golden Bay (including Collingwood) sitting at 16.31%.
Ultra fast broadband community feedback:

“We are conscious of some internet based businesses setting up here because of the location. They are creating job opportunities here” (survey)

“Motueka and the surrounding area attracts individuals looking to live a healthier lifestyle while working remotely. There is great interest from local business to develop online marketing. Investing in our regional economies starts with investing in HSB infrastructure. We need it. We want it. We will use the heck out of it to help power our local economy!” (survey)

“As a real estate agent I get asked all the time "is the broadband fast" people with properties that have no broadband have little chance of selling them, truly it affects their saleability and their value. Fast internet has become as vital as running water in real estate.’ (survey)

“We need to aspire to high speed fibre connections district wide to facilitate business and domestic use for all. As home users use more digital on-demand services, we can't afford anyone's service levels to drop. For small business, as more services become cloud based, fast internet is more essential than ever before.’ (survey)

“For an area dependent on tourism which are notably busier not in the town centres, it is vitally important that we have access to faster broadband. Guests to the area are largely international, and do not understand the high cost or slow speed of broadband in NZ. They are generally young, highly active on the internet, and have expectations around streaming/downloading which copper line capability does not provide. As an aside, we have considered a mobile broadband connection under the RBI but that provides even slower connection times.’ (survey)

“The Internet is now a fundamental resource for my children’s education, it also enables me to earn an income and employ staff in my community.’ (survey)

(e) Outline any additional urban areas within your district that you would like to be considered, including a map with boundaries:

As well as the priority areas above, Network Tasman Ltd has indicated an interest in extending fibre broadband into the following areas:

- Collingwood
- Tapawera
- Murchison

See Appendices: Township Maps

UFB2

1 Areas of Local Authority assistance

(a) Consents:

(i) Aerial consents - Council is undergrounding power and telecom infrastructure. This has occurred in Gladstone Road and High Street, Motueka. Future proposals include Lightband Road, Brightwater. Our preference would be for undergrounding of new infrastructure.
Council would consider the addition of an aerial cable where existing aerial network exists in accordance with the National Environmental Standards (NES) requirements.

(ii) Shallow Trenching - Council would consider this on a case by case basis. Chorus have advised that they will not be pursuing this option in Tasman.

(iii) Global Corridor Access Request (CAR) - Council has commenced a global CAR process with Chorus for the UFB provisioning in Richmond.

There are some issues around this proposal, such as the need to research and advise contractors of Hazardous Activities Industries List (HAIL) sites. The Corridor Manager is required to coordinate works. CAR applications are the only way that proposed works can become known to the Corridor Manager.

(iv) Reinstatement Standards - Council has adopted the New Zealand Utilities Advisory Group (NZUAG) Code of Practice, and this is used alongside the Council’s Engineering Standards reinstatement policies. There may be opportunities for cost share agreements

Summary
Council earlier worked with both Chorus and Network Tasman in laying fibre across the region. Tasman District Council will work with any successful UFB2 bidders on any specific consenting issues.

(b) Identification of Infrastructure:

Tasman District Council has been very supportive of enabling the laying of fibre within Richmond for UFB1. It will be similarly supportive of any deployment of fibre in any other urban (or rural) Tasman location.

Council successfully provided details of Council’s utility infrastructure (water, sewer, stormwater and redundant gas networks) during the UFB rollout within Richmond for Chorus and earlier to Network Tasman when it laid fibre from Motueka across the Tasman District.

(i) Existing pole infrastructure by street - please see comment (a)(i) above. See Appendices: Utilities Pole Infrastructure

(ii) Existing ducts - there are no existing ducts. Local supplier Network Tasman does install ducts in all new developments as part of subdivision processes.


Ground condition information will be provided prior to finalising the details of a rollout for any area.

(iv) Disused infrastructure - none available.

(v) Underground Utility Infrastructure - none available.
(vi) Fibre Backhaul - Network Tasman / Telstra Backhaul - Network Tasman currently has backhaul fibre running from Motueka across to Picton. Chorus has fibre backhaul through various parts of the Tasman/Nelson region. Vodafone (previously Telstra Clear) has fibre backhaul from Nelson to Blenheim but no fibre in the Tasman District. See Appendices – Existing Backhaul Fibre

(vii) Other Infrastructure - Council is open to discussions with any other party where there may be infrastructure that can assist with UFB2 deployment.

2. Uptake and Awareness

A regional digital strategy is currently being driven by a range of groups and organisations across the community. The strategy and also a high degree of community interest in digital development are a legacy of the region’s participation in the national gigatown competition run by Chorus. The strategy will provide a foundation for future digital engagement and also assist with the Digital Enablement Plan (DEP).

(a) Utilising existing Council communications to residents and businesses to outline the benefits of UFB and its availability:

Tasman District Council communication channels will be used to support the successful rollout of UFB2, RBI2 and MBSF. These channels include:

- Local and national media – print and radio
- Online and social media – Council Facebook and Twitter as well as website technology, the utilisation of the Gigatown network
- Use of Council’s ‘Newsline’ magazine which is distributed to every household in the Tasman District to raise awareness of the benefits of UFB and its availability
- Physical presence to deliver the presentation of the ROI and Digital Engagement Plan by the Mayor and responsible staff
- Use of Council facilities for community engagement around connectivity.

This area will be fully outlined in the Digital Enablement Plan.

(b) Connecting local libraries to UFB, to enable all local residents and businesses to experience the benefits:

(i) Connecting Local Libraries to UFB - wherever possible in the District, Council libraries connect to available fibre services. The following table lists the current libraries connections in the District.

<table>
<thead>
<tr>
<th>Library</th>
<th>Connection Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tasman District Library</td>
<td>Connection 1: Snap Lightwave 1000 fibre service, connected via private fibre to Tasman District Main Office. Connection 2: Chorus unbundled fibre service via UFB (diverse connection)</td>
</tr>
<tr>
<td>280 Queen Street Richmond</td>
<td></td>
</tr>
<tr>
<td>Motueka Library</td>
<td>Snap Lightwave 30 fibre service</td>
</tr>
<tr>
<td>12 Pah Street Motueka 7120</td>
<td></td>
</tr>
</tbody>
</table>
Tasman District Council’s libraries play a key role in helping to bridge the digital divide within the community. Many people in the community do not have access to the Internet or the skills to be confident in their use of technology. Each of our libraries provides access to computers and assistance and support to use these facilities.

Providing digital education and supporting digital literacy is an important role for the libraries. The public library is often the only place where people can obtain the support they need. Increasingly government departments are referring clients to the public library as a place where those who do not have their own individual access to the internet can connect with government services. Many of these clients have little or no experience with computers and need considerable assistance and support from library staff.

Council libraries offer individual assistance to multiple users every day. Staff help people prepare CVs, apply for jobs, access information and connect socially through the digital world. Specific group training sessions are offered where people can learn the technology skills needed to play an active part in modern life. Through Council’s partnership with the 2020 Communications Trust, a digital literacy training programme, called Stepping UP is provided. The Stepping UP curriculum includes basic digital literacy modules suitable for new computer and internet users as well as more advanced modules for users to improve their work skills or discover how to use new technologies.

(c) Ensuring the local authority’s telecommunication services are provided over UFB:

(i) Connecting Council Services to UFB - wherever possible in the District, Council service centres connect to available fibre services. The following table lists the current service centre connections in the District.

<table>
<thead>
<tr>
<th>Council Office</th>
<th>Connection Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tasman District Council</strong></td>
<td><strong>Connection 1</strong>: Snap Lightwave 1000 fibre service</td>
</tr>
<tr>
<td>189 Queen Street Richmond</td>
<td><strong>Connection 2</strong>: Chorus unbundled fibre service via UFB connected via private fibre to Tasman District Library Office (diverse connection)</td>
</tr>
<tr>
<td><strong>Motueka Service Centre</strong></td>
<td>Snap Lightwave 30 fibre service</td>
</tr>
<tr>
<td>7 Hickmott Place Motueka 7143</td>
<td></td>
</tr>
</tbody>
</table>
Conducting basic research with residents and businesses to understand the general level of interest in UFB uptake:

An online community survey was conducted with our community over the period 25 May to 19 June 2015, with 1,255 respondents. When integrated with results from community mapping events and other community feedback, it enabled Tasman District Council to establish a comparison between the services listed as being available, and the reality for residents in a range of areas. The story told was one of limited internet access having adverse effects on education and business, as well as highlighting the need to consider social inclusion given the ageing profile and rural profile of much of the Tasman District population. Equally the survey revealed a large appetite for improved services – highlighting opportunities and challenges across key industry sectors such as tourism and agriculture. The survey left us in no doubt that our residents are more than ready for better connectivity and the digital age.

The full summary response survey data can be viewed online, but we list below some of the key findings:

Internet access:
- 44.46% of respondents on copper ADSL/VDSL
- 24.38% on fixed wireless
- 7.01% on satellite
- 13.15% on mobile
- 4.14% on dialup
- 1.75% on fibre

Internet speed:
- 31.86% of respondents experience internet speeds of less than 5mbps
- 48.09% respondents experience poorer connection outside of school hours

Business Internet use?
Yes - 65.79%
No - 34.21%

Types of business:
Working from home highest category (53.4%) followed by farming and tourism

Are speeds considered sufficient for business use?
No - 65.17%
Yes - 34.83%
Example comments:
- Have an online accounting programme, and we experience such slow speeds that data cannot synchronise with the database
- Connection is too slow and unstable to allow Citrix access
- Constant delays with updating inventory system and transferring important files to customers and exporting officials
- Outside of school hours and in the evening mostly only one person can use the Internet or we are unable even to open a web page
- I could not expand the scope of my business without faster more reliable speed
- I write software and work on a VPN, response times are slow. Downloading large files can take days.
- Too slow to communicate with my patients
- For work our servers are based in the US. The poor Internet means there is a lag making it incredibly difficult to be productive.
- We have to pay for satellite as the other alternative would mean we couldn’t make sales via the shop

Is cell-phone coverage where you generally are sufficient for internet use?
Yes - 37.35%
No - 30.78%
Other - 30.86%

Is Internet speed sufficient for everyone’s learning needs?
No - 59.11%
Yes - 40.89%

If fibre and thus high speed internet was readily available for your property would you connect to it?
Yes - 85.2%
No - 1.15%
Already connected - 2.57%
Don’t know - 11%

Would you be interested in upgrading your internet connection if higher speed became available?
Yes - 90.80%
No - 1.79%
Don’t know - 7.42%

Cell-phone ownership?
Yes - 97.34%
No - 2.66%

Current provider?
Spark - 49.87%
Vodafone - 35.61%
2degrees - 17.80%
Skinny - 3.63%
Other - 4.6%

NOTE: Some respondents had multiple suppliers, as a result % do not total to 100%.
3. **Investment options**

Tasman District Council’s Long Term Plan does not contain funding for extension of telecommunications services. The timing of this process was such that there was no opportunity to consider funding through the development of the Long Term Plan 2015-2025. Please see the comments in points 3.1 below about Council investment in kind.

3.1 **UFB Option - Partnering with Network Tasman (NTL)**

Since 2010, Tasman District Council has housed the NTL urban fibre termination point for Motueka township at the Motueka Service Centre. Council provides cabinet space, power and security access restrictions to the fibre point of presence (POP). This POP provides fibre point to point and metropolitan wide area network (WAN) services to Motueka schools and businesses. This POP could be expanded to provide high quality UFB service to Motueka residents.

Council has worked in partnership with NTL for 10 years assisting with the extension of a competitive fibre solution for our region and would like this considered as an in kind investment.

4. **Other assistance**

Tasman District Council has a history of partnerships to facilitate connectivity as detailed above. Council will continue to advocate and support, including providing access to meteorological sites and working alongside other government agencies such as the Department of Conservation.
Rural Broadband Initiative 2

The Tasman District is a large geographic area, with many dispersed settlements, major highways and areas of high tourist activity. Existing broadband coverage beyond major settlements varies from poor to absent. High quality broadband connectivity is critical to education, health, safety and welfare, as well as economic development. Tasman District Council views this as critical infrastructure for our future.

Council has identified priority areas for the roll out of rural broadband in the Tasman District. The data collected through the community survey and meetings supported the need for rural broadband improvements in towns across the District. Further information in support of these priorities is outlined in the remainder of this section.

(a) Areas with no broadband coverage:

There are extensive areas of Tasman District with little or no broadband coverage. That is despite maps produced by telecommunication companies which suggest that areas have ‘broadband.’ At the public forums Council ran in Golden Bay, Motueka and Richmond, people were asked to identify gaps in claimed broadband (and cellular coverage.)

See Appendices: Rural Broadband Maps

Additionally, the regional survey Council ran with communities saw many rural dwellers identify widespread gaps in supposed broadband coverage of suppliers. Some people reported being able to access the internet at certain times of day but not others.

As a result of these two sets of feedback and recognising people with no broadband need to come ahead of those with poor broadband, the following areas are identified with no or little broadband coverage:

- Bainham
- Aorere
- Parapara
- Collingwood
- Riwaka
- Aniseed Valley
- Kohatu
- Kawatiri
- Shenandoah

See Appendices: Rural Broadband Maps
### Census 2013 data:

#### Census figures:

<table>
<thead>
<tr>
<th>Area</th>
<th>Census 2013 census usually resident population count</th>
<th>Census 2013 total households in occupied private dwellings</th>
<th>Census 2013 Median household income $</th>
<th>Census 2013 Percentage of Households with Access to the Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golden Bay</td>
<td>3,756</td>
<td>1,572</td>
<td>42,800</td>
<td>67.94</td>
</tr>
<tr>
<td>Takaka</td>
<td>1,236</td>
<td>531</td>
<td>37,900</td>
<td>67.80</td>
</tr>
<tr>
<td>Aniseed Hill</td>
<td>687</td>
<td>231</td>
<td>86,200</td>
<td>84.42</td>
</tr>
<tr>
<td>Hope</td>
<td>1,149</td>
<td>399</td>
<td>57,500</td>
<td>77.44</td>
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<tr>
<td>Best Island</td>
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<td>39</td>
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<td>61.54</td>
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<tr>
<td>Bell Island</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Ranzau</td>
<td>804</td>
<td>279</td>
<td>68,000</td>
<td>74.19</td>
</tr>
<tr>
<td>Richmond Hill</td>
<td>69</td>
<td>24</td>
<td>75,000</td>
<td>87.50</td>
</tr>
<tr>
<td>Brightwater</td>
<td>1,749</td>
<td>627</td>
<td>66,500</td>
<td>81.34</td>
</tr>
<tr>
<td>Wakefield</td>
<td>2,106</td>
<td>726</td>
<td>65,800</td>
<td>80.58</td>
</tr>
<tr>
<td>Mapua</td>
<td>2,016</td>
<td>807</td>
<td>60,700</td>
<td>84.01</td>
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<tr>
<td>Inlet-Motueka</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Kaiteriteri</td>
<td>792</td>
<td>309</td>
<td>48,800</td>
<td>72.82</td>
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<tr>
<td>Motueka Outer</td>
<td>4,119</td>
<td>1,557</td>
<td>52,400</td>
<td>71.87</td>
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<tr>
<td>Rabbit Island</td>
<td>3</td>
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<td>0</td>
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<tr>
<td>Waimea Inlet West</td>
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<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Wai-Iti</td>
<td>5,427</td>
<td>1,986</td>
<td>66,700</td>
<td>81.72</td>
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<td>Lake Rotoroa</td>
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<td>270</td>
<td>52,200</td>
<td>66.67</td>
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<td>Murchison</td>
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<td>Tapawera</td>
<td>393</td>
<td>159</td>
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</tr>
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<td>Riwaka</td>
<td>870</td>
<td>348</td>
<td>52,000</td>
<td>71.55</td>
</tr>
<tr>
<td>Richmond East</td>
<td>5,994</td>
<td>2,235</td>
<td>55,900</td>
<td>75.30</td>
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<tr>
<td>Richmond West</td>
<td>6,282</td>
<td>2,496</td>
<td>55,000</td>
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</tr>
<tr>
<td>Motueka West</td>
<td>3,669</td>
<td>1,404</td>
<td>45,900</td>
<td>65.81</td>
</tr>
<tr>
<td>Motueka East</td>
<td>3,924</td>
<td>1,674</td>
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<td>64.16</td>
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<td>Moutere Inlet</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Jackett Island</td>
<td>9</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Oceanic-Tasman Region</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Inlet-Ligar Bay</td>
<td>12</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

* The Census question asking for the percentage of households with broadband access is incorrectly stated.
1  The 2013 Census data, as provided, records the number of occupied households with internet access.
2  This is not the same as broadband access. Many rural and Tasman homes are still on dial-up speeds, well below the threshold set for any measure of broadband connectivity.
See Appendices: District Information and Demographics

(c) Statistics New Zealand population growth projections, descriptions of business activities, number of businesses by type, GDP per capita and list of health care facilities: See Appendices: District Information and Demographics

(d) Areas prioritised in the order which you believe would achieve the most benefit from RBI2 investment:

A clear picture has emerged from the combination of the community survey and community mapping events, which when compared with the suggested existing coverage show that there are specific gaps which need remedying. Once this was integrated with Council growth priorities identified in the Tasman District Council 2014 Growth Strategy, the following priorities were able to be determined.

The regional DHB has also submitted a supportive document for the ROI which identifies the benefits to patients who are on broadband who are then able to access services including for those suffering from tuberculosis, mental health issues and diabetes. More widely the DHB notes: “With increased internet coverage, patients in rural areas of Tasman that would normally have to travel for a consultation may be able to access the care, results and management they need utilising this service from their own home.” See Appendices: Letters of Support (Final Telehealth)

Special note:
Both Marahau and Pohara are known areas of requirement. However, resistance to the building of towers in both these areas has halted any installations. For this reason, Council is not listing these areas in its top priority list. There would be a high level of benefit if these obstacles could be overcome, whether through a rural or ultrafast broadband solution. Pohara/Port Tarakohe/Tata Beach has been highlighted as a priority in the section on UFB2 but should urban fibre not prove viable then it would become a top priority for RBI2.

We understand that Network Tasman may intend to run fibre to Collingwood and Pohara, and we are supportive of this as a potential solution.

The information below covers Tasman District Council’s top three areas, with a list of additional areas which also require improved rural broadband access based on the above criteria:

Priority 1 equal: Golden Bay - Bainham/Aorere Valley/Collingwood/Parapara

Rationale:

- Tourism: this area serves as a jumping off point for a range of tourism destinations, including the Heaphy Track, Farewell Spit, Wharariki and the west coast of Kahurangi National Park.
- Safety: SH60 serves the region - road safety will be improved with better coverage, as will search and rescue activities (see Golden Bay Search and Rescue in letters of support).
- Business: the dairy industry is a significant sector in Golden Bay, with Fonterra giving the Aorere Catchment as a good example of an important dairy area negatively impacted by poor broadband (See Appendices: Letter of Support – Fonterra) Equally dairy farmers with poor connectivity are unable to attain full business advantage, for example through use of Fonterra’s primary digital channels. There are many other business examples, such as Nick Riley Electrical
(See Appendices Letter of Support - Challis) which support the dairy industry and yet cannot offer a range of industrial applications to clients.

- Social inclusion: community feedback gave a very strong indication that Bainham, in particular, has a range of homes and businesses needing access to better broadband. (See Appendices: Letter of Support Bainham Branch Rural Women)

Priority 1 equal: Riwaka

Rationale:

- Tourism: Riwaka is on Tasman’s Great Taste Trail and also provides a range of accommodation for tourists for the region.
- Social inclusion: the resident population is impacted negatively by poor connectivity as was seen through the community feedback events.
- Business: Riwaka is a significant horticultural area (hops and apples), as well as housing a range of tourism businesses including activities and lodges, and home based businesses.

Priority 1 equal: Aniseed Valley

Rationale:

- Social inclusion: a geographically isolated community disadvantaged by lack of connectivity, yet situated within close distance of Tasman’s major population node in Richmond.
- Business: there are a range of small businesses operating out of the valley – see Letter of Support – Aniseed Valley:
  - Aniseed Valley Residents Letter
  - Aniseed Valley Petition Signatures 1
  - Aniseed Valley Petition Signatures 2
- Tourism: the reserves and walks in the valley are a popular destination for domestic tourists

Other priority areas (non-exclusive list)

- Moutere Highway including Upper Moutere
- Redwood Valley
- Motueka Valley

Rural broadband feedback:

‘The Motueka/Riwaka area could be significantly energised by Internet savvy businesses who have rich access to Internet. Given its climate, access to housing and wealth of outdoor activities, excellent broadband/internet access could see this area develop as a green Silicon Valley, energising a rural area and removing pressure upon more built up centres, e.g. Auckland’ (survey)

‘The lack of mobile coverage and the very slow internet speed in Aniseed Valley is creating a major obstacle to selling our property as buyers today regard good connectivity as a basic requirement’ (survey)

‘Everyone in Richmond has great internet. Lots of businesses run from Aniseed Valley homes it would be great if we could get better coverage here’ (survey)
'Satellite connections (Farmside is our only option) is very expensive and slow in comparison to options available in urban areas. For the economic benefit of NZ, rural businesses need to be given top priority to internet access, speed and it needs to be cost effective. It’s all very well to put in high speed fibre, but in most rural areas we will still miss out. Landline on one of our farms is pathetic and unusable.’ (survey)

‘It is so slow and very frustrating and tourists can’t believe that the coverage is so poor and when the Internet connection is down, it is hard for us to make sales as our POS is Internet based.’ (survey)

RBI2

1 Areas of Local Authority Assistance

(a) Consents:

Tasman District Council allows for the upgrading of an existing facility or construction of a new facility for any network utility or public work, or any change in activity within an existing facility, as a permitted activity that may be undertaken without a resource consent, if it complies with the conditions in Section 16.6.2.1 of the Tasman Resource Management Plan (TRMP) for Land Use.

Download Chapter 16.6 of the TRMP from the Tasman District Council website

(b) Identification of Infrastructure:

Council has identified multiple possible infrastructure sites. It has engaged in an extensive GIS mapping exercise which has identified that Council itself has a number of Remote Measurement System (RMS) sites dotted across Tasman.

Council’s advisors have also met and spoken with various other owners or occupiers of high sites in Tasman that could potentially assist with extending both wireless broadband and cellular provision. These included the Department of Conservation which has numerous sites and which has indicated an open approach to sharing sites.

See Appendices: Letters of Support – Department of Conservation

While any arrangement would require specific discussion, negotiation and individual agreement, each organisation has indicated a willingness to engage via Council, as an independent arbiter and clearing house, with any telecommunication suppliers who may desire access to such high sites around Tasman. There is a wide appreciation that there is a major community benefit in ensuring much greater broadband connectivity, as well as other benefits accruing to individual organisations of whatever type.

2 Uptake and Awareness

(a) Utilising existing Council communications:

Tasman District Council communication channels will be used to support the successful rollout of UFB2, RBI2 and MBSF. These channels include:

- Local and national media – print and radio
- Online and social media – Council Facebook and Twitter as well as website technology, the utilisation of the Gigatown network
- Use of Council’s ‘Newsline’ magazine which is distributed to every household in the Tasman District to raise awareness of the benefits of UFB and its availability
- Physical presence to deliver the presentation of the ROI and Digital Engagement Plan by the Mayor and responsible staff
- Use of Council facilities for community engagement around connectivity

This area will be fully outlined in the Digital Enablement Plan

(b) Conducting basic research:

An online community survey was conducted with our community over the period 25 May to 19 June 2015, with 1,255 respondents. When integrated with results from community mapping events and other community feedback, it enabled to Tasman District Council to establish a comparison between the services listed as being available, and the reality for residents in a range of areas. The story told was one of limited internet access having adverse effects on education and business, as well as highlighting the need to consider social inclusion given the ageing profile and rural profile of much of the Tasman District population. Equally the survey revealed a large appetite for improved services – highlighting opportunities and challenges across key industry sectors such as tourism and agriculture. The survey left us in no doubt that our residents are more than ready for better connectivity and the digital age.

The full summary response survey data can be viewed online, but we list below some of the key findings:

**Internet access:**
- 44.46% of respondents on copper ADSL/VDSL
- 24.38% on fixed wireless
- 7.01% on satellite
- 13.15% on mobile
- 4.14% on dialup
- 1.75% on fibre

**Internet speed:**
- 31.86% of respondents experience internet speeds of less than 5mbps
- 48.09% respondents experience poorer connection outside of school hours

**Business Internet use?**
Yes - 65.79%
No - 34.21%

**Types of business:**
Working from home highest category (53.4%) followed by farming and tourism

**Are speeds considered sufficient for business use?**
No - 65.17%
Yes - 34.83%

**Example comments:**
- Have an online accounting programme, and we experience such slow speeds that data cannot synchronise with the database
- Connection is too slow and unstable to allow Citrix access
- Constant delays with updating inventory system and transferring important files to customers and exporting officials
- Outside of school hours and in the evening mostly only one person can use the Internet or we are unable even to open a web page
- I could not expand the scope of my business without faster more reliable speed
- I write software and work on a VPN, response times are slow. Downloading large files can take days.
- Too slow to communicate with my patients
- For work our servers are based in the US. The poor Internet means there is a lag making it incredibly difficult to be productive.
- We have to pay for satellite as the other alternative would mean we couldn't make sales via the shop

Is cell-phone coverage where you generally are sufficient for internet use?
Yes - 37.35%
No - 30.78%
Other - 30.86%

Is Internet speed sufficient for everyone's learning needs?
No - 59.11%
Yes - 40.89%

If fibre and thus high speed internet was readily available for your property would you connect to it?
Yes - 85.2%
No - 1.15%
Already connected - 2.57%
Don’t know - 11%

Would you be interested in upgrading your internet connection if higher speed became available?
Yes - 90.80%
No - 1.79%
Don’t know - 7.42%

Cell-phone ownership?
Yes - 97.34%
No - 2.66%

Current provider?
Spark - 49.87%
Vodafone - 35.61%
2degrees - 17.80%
Skinny - 3.63%
Other - 4.6%

NOTE: Some respondents had multiple suppliers, as a result % do not total to 100%.
See appendices: Community Surveys
(c) Working with the successful RBl bidder to encourage uptake:

This awaits the conclusion of the current ROI process and/or the acceptance of Tasman District Council’s proposal for “Location Agnostic Broadband” to deliver the greatest possible uptake of services and resolve the wide ranging issues identified as a part of the Council’s ROI.

3 Investment options

Tasman District Council’s Long Term Plan does not contain funding for extension of telecommunications services. The timing of this process was such that there was no opportunity to consider funding through the development of the Long Term Plan 2015-2025. Please see the comments in points 3.1 below about Council investment in kind.

3.1 Rural Broadband Option - Partnering with The Pacific.Net (TPN)

Since the mid-2000s, Tasman District Council has housed the TPN fixed wireless Internet termination point for Golden Bay at the Golden Bay Council Service Centre. Council provides roof access for aerial mounts, cabinet space, power and security access restrictions to the fixed wireless POP. This POP provides wireless point to point, WAN and Internet services across Golden Bay to schools, rural businesses and residents. This POP could be expanded to provide high quality UFB service to Motueka residents.

Council has worked in partnership with TPN since the Project Probe funding was awarded in 2004, assisting with the extension of a competitive fixed wireless solution for our region, and would like this considered as an in kind investment. Please note that Council is of course very happy to work with any supplier.

4 Other assistance

Council has met local suppliers and is prepared to engage with them and National Suppliers related to there being a potential for access to Radio Spectrum Management (RSM) sites.

See Appendices: - GIS Infrastructure Maps including RSM Sites
Mobile Black Spot Fund

The Tasman District is a large geographic area, with many dispersed settlements, major highways and areas of high tourist activity. Existing mobile coverage beyond major settlements varies from poor to absent. Mobile connectivity is critical to health, safety and welfare, as well as economic development. Tasman District Council views this as critical infrastructure for our future.

The survey and public engagement organised by Council saw strong responses on mobile phone black spots. Residents of rural areas identified the pressing need for improved service to assist with emergency issues, to enable visitors to connect in a region with three national parks and many other attractions, for health and other benefits.

The Tasman Rural Fire Authority, Federated Farmers and St John’s amongst others have endorsed the need for improved cellular coverage in our rural communities. See Appendices: Letters of Support

The lack of cell-phone service is also serious issue for emergency services when engaged in such operations as Search and Rescue in national parks and other remote areas of Tasman District.

(a) Significant tourism areas with no consistent 3G/4G coverage

Tourism is one of the major economic drivers for the Nelson Tasman region contributing $490 million per year in visitor spend. The way in which businesses communicate and engage with consumers trying to find information on the region has changed dramatically in the last five years. A significant amount of engagement is done through visitors (international and domestic) accessing websites and booking channels via mobile devices. See Appendices: Letters of Support (NT Tourism)

The Abel Tasman National Park, the Kahurangi National Park and the Nelson Lakes National Park are all located in the Tasman region.

These National Parks and the region’s many other attractions have made Tasman District a tourist mecca. Our region is host to almost 700,000 visitors each year. At best cell-phone reception is patchy in many Tasman areas. Maps provided by the three mobile service operators tend to show good coverage in wide, open areas of water. Such maps often also show coverage where there is little, if any cell-phone availability. Typically coverage disappears when you reach shore, as baches, resorts and homes tend to sit under hills away from the easy coverage points.

(b) Sections of State Highways with no consistent 3G/4G coverage:

Tasman includes several important State Highways, and there are coverage issues across each of them.

(c) Areas prioritised according to the level of benefit:

In looking at mobile black spot priorities Tasman District Council has drawn on a range of sectors feedback, including tourism, health, civil defence, as well as the 2014 Growth Strategy, the community survey and community mapping sessions.

Special note:
Both Marahau and Pohara are known areas of requirement. However, resistance to the building of towers in both these areas has halted any installations. For this reason, Council is not listing these...
areas in its top priority list. There would be a high level of benefit if these obstacles could be overcome.

The following three priority areas emerged, but this by no means excludes the other areas in the secondary list:

**Priority 1: Mapua / Ruby Bay**

Mapua / Ruby Bay remains a major growth area and is a tourism destination around the whole year, as well as having a peak summer season with out of region visitors. Specifically the wharf (Mapua’s fast growing tourism and commercial hub) has been highlighted as a mobile blackspot. The surrounding area also has mobile blackspots, including the coastal highway – see comments below:

- Tourism (Tasman’s Great Taste Trail transit point plus it is a major domestic tourism destination with high tourism business levels).
- Growth (identified as major growth node in 2014 Growth Strategy).
- Safety (the associated area along the Mapua coastal highway to Tasman SH60).

**Priority 2: Wakefield**

There are consistent pockets of black spots around Wakefield which is an issue as it has been identified as a major growth area as part of the Richmond/Wakefield corridor, with a high percentage of families with children:

- Tourism (Tasman’s Great Taste Trail).
- Growth (identified as major growth node in 2014 Growth Strategy).
- Safety (SH6 - major route to Christchurch).

**Priority 3: Bainham**

This is an important tourist transit point in Golden Bay as well as including many small isolated communities.

- Tourism: jump off for Heaphy Track plus Aorere area and entry into Kahurangi National Park.
- Business: as noted in comments for RBI2, this area has a significant dairy sector.
- Social inclusion: there is a widespread community in geographically isolated pockets.
- Safety: Kahurangi National Park/Heaphy Track attracts a significant number of adventure tourists. Search and Rescue have highlighted the need for cell-phone coverage for safety reasons. See Appendices: Letters of support (Golden Bay Search and Rescue)

**Priority 4: Nelson Lakes to Murchison**

The area around Nelson Lakes and through to Murchison is an important tourist destination and it contains several small, isolated communities.

- Tourism (entry to Nelson Lakes National Park).
- Safety – major highway junctions on routes to Blenheim, West Coast and Christchurch, civil defence, search and rescue.
- Social inclusion – wide spread isolated communities.
Other priority mobile black spot areas

Please note that due to the large geographic area of the Tasman District, there are multiple critical black spots throughout the District. The list below is representative, rather than complete.

- Pakawau/Farewell Spit, Golden Bay (tourism, safety, social inclusion).
- Cobb Dam/Upper Takaka/Takaka Hill (safety/civil defence, tourism as an entry into Kahurangi National Park).
- Riawaka (social inclusion, business, tourism).
- Tapawera (social inclusion, safety, future tourism with the proposed extension of Tasman’s Great Taste Trail).
- Kawatiri/Belgrove SH60 (safety, social inclusion, tourism).
- Totaranui (safety, tourism as one of DOC’s largest campsite and a major attraction with the Abel Tasman National Park).
- Marahau (tourism as an entry into Abel Tasman National Park, social inclusion, safety).
- Area surrounding Murchison (business, social inclusion, safety).
- Pockets in Motueka, plus Motueka River West bank/valley.
- Aniseed Valley (business, social inclusion, safety).
- West Coast of Golden Bay, north of Kahurangi lighthouse to Paturau River (tourism, civil defence, safety).

Mobile Black Spot Feedback:

‘In Collingwood and Takaka it is adequate. As soon as you travel either up the valley towards Bainham or out the coast towards Puponga, cell phone coverage is patchy and inconsistent. This effects our business because we need to be on call 24/7 no matter where we are to attend to breakdowns and other clients. We cannot do this when we have no service. We use GSM units which rely on text messaging to remote controllers which cannot be used at a lot of our farms because of no cell phone reception’ (survey)

‘Coverage sporadic around Hope, Brightwater and Wakefield. Very poor south of Wakefield through to Murchison.’ (survey)

‘We live in a busy area of Wakefield/Brightwater and cannot get Spark coverage. Using 2degrees only because of the reception available.’ (survey)

‘Places around Mapua are weak - new Sprig and Fern, places along Aranui Road’ (survey)

‘Most of Marahau! Does the NZ government really want the most popular national park to have no cell or Internet coverage? We have Old MacDonald’s campground just down the road from us with hundreds of guests per night in the high season...not having mobile coverage is a complete liability in case of incidences where emergency contact with families is necessary. The severe flooding in Marahau of 2013 made many homes lose landline coverage and we were not able to be in touch with families to assure them of our safety due to no mobile coverage. What would we have done in the middle of the night if a mudslide had taken over our house, as happened to two residences in town, one of them fatal?’ (survey)

‘We need coverage at Lake Rotoroa for search and rescue. So many more times we are called on to help get people rescued in the Nelson Lakes National Park, Lake Rotoroa. I work in health and lives can depend on phone coverage. The safety of staff is put at risk every day due to the lack of cell coverage. Traveling to Nelson there is danger of bad road conditions, break down or as happened a few weeks ago to me a person trying to make me stop by throwing a large object at the car there is no way to be able to contact police or any help.’ (survey)
'I am 7.34km from Murchison township. I am one of 3 PRIME Nurses in our community who spend a good portion of my off duty time on call for emergencies. No Mobile coverage means I am confined to the house when I am on call. This can be from 1700hrs on Friday to 0800hrs on Monday. During public holidays / long weekends this time is extended. If I had mobile coverage it would greatly reduce my response time for accidents and emergencies. Similarly my husband is a Search Dog handler and works closely with the Police when people are missing and overdue. No mobile coverage means his callout times are prolonged as it requires the Search and Rescue Sergeant to leave a message on our land line which we check throughout the day. The prolonged call out times effect public safety in a very real way. In addition any of our side valleys and state highways need increased mobile coverage. As an Emergency Health worker we have the technology to send information via mobiles to our Clinical support desk or talk directly to the Emergency Dept Doctor. However the poor mobile coverage often stymies the use of this advanced technology. Road side accidents have a delayed response time as first public person on the scene has to drive such a long way to get mobile coverage to report the accident. Add all the delays and the best practice "Golden Hour" for emergency care is not attainable. If we had greater mobile coverage it would allow me to use the St John's online resources via a smart phone for emergencies procedures and drug doses and calculations for children etc. Our colleagues in the metropolitan areas have this ability but rural practitioners do not.’ (survey)

MBSF

1 Areas of Local Authority Assistance

(a) Consents:

Tasman District Council allows for the upgrading of an existing facility or construction of a new facility for any network utility or public work, or any change in activity within an existing facility, as a permitted activity that may be undertaken without a resource consent, if it complies with the conditions in Section 16.6.2.1 of the Tasman Resource Management Plan for Land Use located on the Tasman District Council website. Download Chapter 16.6 of the TRMP from the Tasman District Council website

(b) Identification of Infrastructure:

Council has identified multiple possible infrastructure sites. It has engaged in an extensive GIS mapping exercise which has identified that Council itself has a number of RMS sites dotted across Tasman. See Appendices: GIS Infrastructure Maps including RSM Sites

Council’s advisors have also met and spoken with various other owners or occupiers of high sites in Tasman that could potentially assist with extending both wireless broadband and cellular provision. These included the Department of Conservation which has numerous sites and which has indicated an open approach to sharing sites. See Appendices: Letters of Support (Department of Conservation)

While any arrangement would require specific discussion, negotiation and individual agreement, each organisation has indicated a willingness to engage via Council, as an independent arbiter and clearing house, with any telecommunication suppliers who may desire access to such high sites around Tasman. There is a wide appreciation that there is a major community benefit in ensuring much greater coverage, as well as other benefits accruing to individual organisations of whatever type.
2 Uptake and Awareness

Tasman District Council communication channels will be used to support the successful rollout of UFB2, RBI2 and MBSF. These channels include:

- Local and national media – print and radio.
- Online and social media – Council Facebook and Twitter as well as website technology, the utilisation of the Gigatown network.
- Use of Council’s ‘Newsline’ magazine which is distributed to every household in the Tasman District to raise awareness of the benefits of UFB and its availability.
- Physical presence to deliver the presentation of the ROI and Digital Engagement Plan by the Mayor and responsible staff.
- Use of Council facilities for community engagement around connectivity.

This area will be fully outlined in the Digital Enablement Plan.

3 Investment options

Tasman District Council’s Long Term Plan does not contain funding for extension of telecommunications services. The timing of this process was such that there was no opportunity to consider funding through the development of the Long Term Plan 2015-2025. Please see the comments in points 3.1 below about Council investment in kind.

3.1 Mobile Blackspot and Fixed Wireless Option

Council Meteorological Stations
A map of Council owned meteorological station sites is included with this document. These sites are available to provide open access Mobile and Fixed Wireless sites across the District. Sites may include road access and power (but not always).

Council is supportive of any measures to use these sites to extend and improve mobile and wireless services in our District and would like this considered as an in kind investment.

4 Other assistance

Council has met local Suppliers and is prepared to engage with them and National Suppliers related to there being a potential for access to Radio Spectrum Management (RSM) sites.

See Appendices: - GIS Infrastructure Maps including RSM Sites
TDC Case for Funding Support – “Location Agnostic Broadband”

In an environment of ongoing restraint, the demands of the Christchurch Earthquake Recovery, increasing requirements for more effective delivery of services to communities and Crown directives for state sector entities to live within their means, a different localised approach to the delivery of broadband is necessary. Tasman District Council sees a combination of “Location Agnostic Broadband” (“LAB”) proposal as the best possible response.

Even with the earlier UFB and RBI initiatives Council is aware of an increasing level of frustration within its region and community and sees evidence this is more widespread.

Council sees there is a far more effective way of moving forward, delivering needed and essential services rapidly to our communities.

We consider that the “LAB” initiative will:

1. Look to support the efforts of MBIE and the Crown in a constructive manner.
2. Demystify the whole domain of broadband delivery for the whole community, region and country
3. Establish more realistic end user Quality of Service requirements, easily achievable using a range of available technology, cost effectively.
4. Provide greater transparency and co-operation among individual business entities.
5. Better serve the interests of rural communities by enabling smaller telecommunications providers to get more involved in the service delivery.
6. Enable greater transparency in the delivery by various suppliers.
7. Make the best of the building blocks that Tasman District has across the district.
8. Be wholly supplier, location, vendor, technology agnostic.
9. Be underpinned by a deep technical understanding of the existing supplier technology delivery capability.
10. Be underpinned by a deep technical understanding of the available delivery technology and how to best use it.
11. Deliver the greatest possible “Bang for Buck” in the interests of the Tasman community, the region and New Zealand.
Tasman District Council ROI Document Library Supporting the Region’s Bid

As work has progressed, Tasman District Council has been steadily building and improving a Tasman District Council -ROI document library.

View the document library

The development of the document library has the following purpose and intent:

1. **Providing a baseline of verified information** for further discovery and confirmation during the Post-ROI Strategic Design, Planning and Road-mapping phase.

2. **Identify those areas of concern** to the region and which will or are **likely to have a material effect** upon regional delivery of broadband; for further review during Detailed Regional Broadband Strategy and Planning (DEP Development).

3. **Support and ensure cross-region alignment** across a broad range of broadband delivery efforts, whilst ensuring **direct alignment with Central Government** initiatives.

The full Tasman District Council ROI document library together with the concepts and business delivery constructs associated with the terms “Location Agnostic Broadband” represents an investment by Tasman District Council and its advisors, Digital Development Associates Limited, in the development of intellectual property and commercial property, with significant value for the region.

The various detailed documents contained in the library are set out in the *Appendix – ROI- Document Library Index* which provides plain English guidance on content and use. All documents have been subject to extensive review by Tasman District Council.
The Region - Broadband Current State

Tasman District Council has undertaken an extensive exercise to understand the current state of the broadband infrastructure throughout the region. This has taken the form of a Digital Infrastructure Audit which establishes the way in which broadband has been delivered to meet the needs of our communities, schools, health care providers and emergency services across the region.

The various broadband delivery layers have been mapped, together with the actual technologies in use. The mapping has followed the broadband and internet access layers and terminology used throughout the telecommunications industry. That is the following:

- Final Mile
- Regional Transit
- National Transit
- International Transit

The principles established for the fully open access and peering of such technology for the interconnection and interchange of information between multiple suppliers have also been followed.

Keys to understanding

There are certain design and delivery principles that drive the correct design and build of both small and large scale telecommunications and broadband delivery networks. This understanding serves to de-mystify the whole domain at a basic level. Those principles are as follows:

Broadband is like a water supply

The whole telecommunications network can be viewed as being the same as a network for the delivery of a mains water supply.

1. Final Mile = at the house there are multiple hoses and taps fed by larger pipes in the house.
2. Final Mile = the pipes in the house are fed by somewhat larger pipes in the street.
3. Regional Transit = the pipes in the street are fed by larger mains on the thoroughfares.
4. Regional Transit = the larger mains on the thoroughfares are fed by much larger pipes from the town pumping station.
5. National Transit = the town pumping station is fed by much larger pipes from the regional pumping station.
6. International Transit = the regional pumping station is fed by massive pipes from the reservoirs.

Only so much water can be pushed down the pipes and hoses, so the right sizing, using the appropriate technologies, with ongoing maintenance, together with sensible capital refresh of equipment is essential; otherwise it all stops working. The same principles apply to Internet, Broadband, and Telecommunications Network Design, which are all really one and the same.

Wireless

Some secondary, yet important facts deserve consideration as part of the “LAB” concept:
All wireless services in whatever form, be it mobile telephony, mobile broadband, Wireless Lan, Wireless internet, fixed wireless, fixed microwave etc are similar. Wireless service. There is no real difference between any of them except for the transport mechanism used, the wireless spectrum frequency used to transmit from point to point, and what the particular form of transport/spectrum was actually designed to achieve. Marketing efforts by suppliers will attempt to convince the buyer that what they provide is bigger, better, more advanced than what others can provide. Mostly this is not true; mostly suppliers use the same/similar technology in the same/similar ways, to produce only slightly different results.

Fixed line

All fixed line services use fixed line, physical point to point connections. These may flow over copper (in which case self powered) or they may flow over fibre (which actually stops working without power). For fibre communications a UPS (Un-interruptible Power Supply) is required to ensure that the connection keeps on working.

- There are various links in the Internet chain from international to the home to connect the various parts together; however the actual delivery mechanism is pretty much the same regardless of the technology in use.
- This is a truism, regardless of who the fixed line supplier may be, or whether or not they use copper or fibre to deliver the service.

All networks use ethernet and internet technology to deliver

For many years ALL telecommunications providers have used much the same form of transport to provide bandwidth to the end consumer. That is to say the Transmission Control Protocol/Internet Protocol (TCP/IP) networking protocols, the Ethernet networking protocols, the Border Gateway Protocol, Multiprotocol Layer Switching (MPLS) prioritisation protocol and TCP/IP network addresses.

- Regardless of the marketing and statements from the suppliers it’s all very much the same, and is all perfectly capable of easy and transparent interconnection and exchange of information.
- It appears that various suppliers may limit the form and type of interconnection and exchange of information to access to “their network” to prevent competitors from being able to operate effectively and efficiently.

Fibre transport – available bandwidth is not the issue

There are three main forms of fibre transmission technology to enable the transport of all the information around the internet and across the broadband and telecommunications network.

1. **Coarse Wavelength Digital Multiplexing** – allows for 4 Xs 3.1gb/s bandwidth across a fibre pair. Designed principally with urban environments in mind, this requires boosting of the transmission lasers every 40km-60km. This tends to be highly capital intensive as a result and represents older technology.
   - Bandwidth is completely manageable from the Network Operations Centre using software, once the appropriate network data switches are in place.
   - This is what a large part of the Gigabit Passive Optical Network (GPON) delivery network is based upon.

2. **Dense Wavelength Digital Multiplexing** – allows for 40 Xs 10gb/s bandwidth across a fibre pair. Using dark fibre and designed for urban and long distance bulk bandwidth, this requires boosting of the
transmission lasers anywhere between 400-800kms. Less capital intensive for the implementation of an entire network as a result. Has a simplified transport when compared with Coarse Wavelength Division Multiplexing (CWDM). Bandwidth is completely manageable from the Network Operations Centre using software, once the appropriate network data switches are in place.

(a) What independent fibre companies (SNAP, Enable, FX); lines (power) companies and Local Fibre Companies (LFCs) are usually implementing for regional fibre roll outs.
(b) This is what Chorus is rolling out for non-UFB inter region and national backhaul.

3. **ATM (Asynchronous Transfer Mode)** – a transmission technology that is hardware rather than software based. ATM can interconnect all types of transport (fibre, copper etc) however in the New Zealand implementations can manage either 155mb/s of 622mb/s across a fibre pair providing a good Quality of Service. As a transport it has been largely superceded by gigabit Ethernet technology, which is more easily managed from the software layer. Rather less than optimal as a transport mechanism for UFB or RBI.

(a) Chorus still has much ATM equipment installed at local and regional exchanges.
(b) May be able to be managed from the Network Operations Centre using software.

**Who has built what**

Within New Zealand our major network infrastructure was originally built by the New Zealand Post Office, which morphed into Telecom, which was then broken up into Spark, Spark Digital and Chorus. In more recent years there have been a range of other entrants into that market who have also been building major network infrastructure. Those newer entrants have been spread across mobile phone carriers (example Vodafone), mainly fibre carriers (e.g. FX Networks and SNAP), power companies rolling out fibre, either as lines companies (e.g. Network Tasman) or Local Fibre Companies (LFCs) for UFB (e.g. WEL and Northpower).

**What happened in the past and perhaps also the present**

The traditional telecommunications companies, both in New Zealand and offshore, have historically engaged in competition for limited markets, except for where cooperation has been absolutely necessary. The necessary equipment and delivery services have not necessarily been delivered in the most efficient and effective way, or as transparently as is desirable. Artificial barriers to true commercial competition may have also been introduced. Such barriers can take the form of excessive charging for access or relatively simple upgrades and forms of contract which are unclear about what is to be delivered.

**Results of digital infrastructure audit - Tasman**

On the following page is a diagram which sets out graphically the range of known issues identified related to the delivery of Broadband and Mobile Services across the wider Top of the South region. Consultation has been entered into with Local, Regional and National Level Suppliers.

The diagram also shows the various layers and types of technology used across the region.

The issues identified from community feedback across the region include:

1. Chorus GPON design and some perceived lack of Chorus transparency.
2. Chorus sometimes asks communities to meet what is considered to be a Chorus cost.

3. Chorus handoff points for Regional Points of Presence and First Data Switch locations appear to be less than transparent.

4. Chorus’ apparent use of older technology or the re-cycling of older technology as “new” hinders the effective and rapid deployment of broadband services.

5. Mobile transmission technology in use appears to have been over-built in some locations by the suppliers who are largely competing for the same communities and customers, while ignoring others, particularly rural.

6. Broadband and mobile coverage maps published by suppliers can be described as overly optimistic based upon community feedback (refer to coverage maps and community feedback). This has been clearly demonstrated by the evidence of community feedback and the identification of black spots in the middle of published coverage areas.

   - RBI Coverage Maps
   - Mobile Coverage Maps
   - Survey Response Summary Feedback

7. RBI towers proposed for the District appear stalled and have not actually been built in some instances.

8. Regional and local suppliers indicate that co-location fees charged for access to the RBI towers are excessive.
**Digital Infrastructure Audit**

**Known Regional Broadband Issues and Mobile Issues**

- **GPON design dated**, transparency lacking.
  - Multiple Contract layers for delivery, Access and Services appear built to obscure, not provide open network transparency. May breach new laws related to fair contracts.

- Where near a rural school, examples of local community being asked to pay for upgrades when actually payable by provider as a part of RBI fibre delivery.

- Much UFB fibre in “urban” areas overbuilt, with low appreciation of where commercial business located.
  - Anomalies.

- Excessive charging to deliver fibre to rural communities, even when fibre trunks are available.

- Rural school fibre cabinets should have this tech, examples where this is not the case.

- Suppliers required to reduce use of copper based tech, ADSL, VDSL extend the life of copper.

- **Transport Available**
  - 4 Xs 3.1gb/s channels per fibre pair (minimum)
  - 40-50km hops
  - High Capital intensive

- **Fibre Link**
  - Fast Ethernet Switch Multiplies of 1gb/s
  - ATM Switch Max 500mb/s
  - ATM Switch Multiples of 1gb/s
  - Transport Available
    - Typically ADSL via copper only
  - Transport Available
    - Typically 100mb/s Up to 1 x 500mb/s channel by fibre pair

- **RPF Handoff Point**
  - Need Upgrade To
  - NZIX Open Transparent Peering more appropriate

- **Use of old technology**, rather than priority replacement with Gigabit Ethernet.

- **Many rural areas have “new” cabinets**, which are often re-sited old technology on copper. Too many people on the cabinet means very poor broadband.

- Examples where used for RBI Rural School rollouts, cannot be expanded & not easily shared with Health or others.

- Planned RBI towers have not been built in region. “Not commercially viable” yet CFH funded. Fibre fed only if ordered by Vodafone.

- Mobile Transmission technology less suited to broadband delivery. Providers may say otherwise.

- Excessive charging to deliver fibre to rural communities, even when fibre trunks are available.

- Suppliers required to reduce use of copper based tech, ADSL, VDSL extend the life of copper.

- **Transport Available**
  - 4 Xs 3.1gb/s channels per fibre pair
  - Or much more, supplier dependent

- **RPF Handoff Point**
  - Need Upgrade To
  - NZIX Open Transparent Peering more appropriate

- **Use of old technology**, rather than priority replacement with Gigabit Ethernet.

- **Many rural areas have “new” cabinets**, which are often re-sited old technology on copper. Too many people on the cabinet means very poor broadband.

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- Mobile Transmission technology less suited to broadband delivery. Providers may say otherwise.

- Excessive charging to deliver fibre to rural communities, even when fibre trunks are available.

- Suppliers required to reduce use of copper based tech, ADSL, VDSL extend the life of copper.

- **Transport Available**
  - 4 Xs 3.1gb/s channels per fibre pair
  - Or much more, supplier dependent

- **RPF Handoff Point**
  - Need Upgrade To
  - NZIX Open Transparent Peering more appropriate

- **Use of old technology**, rather than priority replacement with Gigabit Ethernet.

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- Excessive charging to deliver fibre to rural communities, even when fibre trunks are available.

- Suppliers required to reduce use of copper based tech, ADSL, VDSL extend the life of copper.

- **Transport Available**
  - 4 Xs 3.1gb/s channels per fibre pair
  - Or much more, supplier dependent

- **RPF Handoff Point**
  - Need Upgrade To
  - NZIX Open Transparent Peering more appropriate

- **Use of old technology**, rather than priority replacement with Gigabit Ethernet.

- **Many rural areas have “new” cabinets**, which are often re-sited old technology on copper. Too many people on the cabinet means very poor broadband.

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Moving parts – broadband to the end user

The following diagram shows how broadband can or is actually delivered to the end user regardless of where they may be located. Specific local issues of concern are also identified.

**Individual Companies are shown as examples only.**
The Tasman Region – Future Broadband State

End user quality of service outcome focused

The provision of high capability broadband services to the end user in their home or at their business regardless of their physical location, be it Rural or Urban, is the focus of the “Location Agnostic Broadband” initiative. These have been developed by the Marlborough District Council, together with Digital Development Associates Limited and are used by permission.

For Communities and the end user of broadband services:

1. Broadband available on a “Location Agnostic Basis” (LAB). Under a LAB model, all users whether urban or rural, have equitable access to high quality broadband at an affordable cost.

2. Minimum Quality of Service (QoS) required to the end user, both for upload and download. Providing 150-300mb/s is the optimum for the end user.

3. In a step-change towards that future-proofing, Council would seek to establish 50mb/s as an initial base minimum requirement for newly-funded services, with regular, scheduled upgrades of equipment towards achieving gigabit delivery.

4. Multiple broadband supply options are preferred, which meet minimum Quality of Service levels. The end buyer can decide upon who will supply their broadband dependent upon the QoS and service provided by the supplier.

5. Fibre link with minimum of 1GB/s Ethernet bandwidth delivery to any Point of Presence at wholesale pricing, where servicing a rural school, rural community or rural health centre.

Legislative changes required

The implementation of Tasman District Council’s “LAB” proposal may require Central Government and Local Government Policy Changes to rapidly implement policies and legislation to allow an integrated and whole of region approach.

The Council is subject to legal and regulatory processes and obligations, including those under the Local Government Act 2002, which will need to be complied with before the Council can enter into any final and binding arrangements.

Desired future state – broadband for the Tasman Region

The proposed Future State for Broadband delivery for the region has the following key features:

1. “Location Agnostic Broadband” – It does not matter where you may be located in Tasman District, you will receive high quality broadband.

2. Wherever possible, this will take a vendor and supplier agnostic approach, making the best of what is available, and where necessary building what is not, whilst engaging with suppliers across the spectrum to deliver to the needs of the Tasman District and its communities.
3. There will be a common service and delivery framework for all of the community and which will apply to all suppliers equally.

4. Identifies and exposes necessary technology links, delivery and upgrade requirements.

5. Establishes a delivery model enabling the rapid expansion of cell-phone networks to hard to reach areas, by better leveraging available towers. Mobile carriers can focus on what they do best (cell-phones) and much needed rural broadband services can be quickly extended using wireless internet service providers.

6. Leverages the existing and appropriate owned infrastructure (Sites: Radio Spectrum Management, Meteorological) of Tasman District Council and other parties for the benefit of all.

7. Allows for an absolute focus upon meeting and delivering to the health, safety, education, welfare, economic development and individual needs of both urban and rural communities.

8. Addresses and resolves all known issues related to UFB, RBI and MBSF delivery to the region, scalable for other regions and communities.

What Council seeks to provide and deliver to the District may be best described as end-user, service-centric, location agnostic, high capacity broadband and mobile services.

“Location Agnostic Broadband” delivery requirements are shown in the diagram on the following page.
Location Agnostic Broadband

Making the Best of What We Have - Providing Broadband - Long Valleys and Distant Bays

Transport Available
4 Xs 3.1gb/s channels per fibre pair (minimum)
40-60km hops
Highly Capital intensive

Transport Available
4 Xs 5gb/s channels per fibre pair
Northern Half of Region
More cost effective

Fast Ethernet Switch
Multiples of 1gb/s

Gateway Switch/Router
Typically at Chorus Regional
Exchange then link back to
Regional/National Backhaul

Gateway Switch/Router
Typically at Chorus Local
Exchange then link back to
Rural Broadband Providers

Transport Available
Typically ADSL via copper only

Transport Available
Up to 1 x 500mb/s channel by fibre pair

Landline Via VoIP
if desired

Transport Available
4 Xs 3.1gb/s channels
per fibre pair
Or much more, supplier dependent

Satellite dish

Appropriate for
Very hard to reach locations
Can be affected by weather

Fibre Link

WISP Coverage can expand mobile
Typically WISP has
coverage in hard to
reach areas.
WISPs can offer Co-
location to greatly
expand existing
Mobile coverage

100m b/s to 150m b/s

POINT TO POINT WIRELESS TRUNK
Up to 50km Hops

1gb/s

Transport Available
4 Xs 3.1gb/s channels
per fibre pair
Or much more, supplier dependent

RURAL and DISTANCE Communities
LONG VALLEYs and DISTANT BAYS within REGION

Transport Available
Up to 20mb/s to
user, more limited
speed up
Can be affected by weather

Transport Available
Typically ADSL via copper only

1gb/s

Transport Available
Between 1gb/s and
5gb/s depending on
implementation

1gb/s

Transport Available
Up to 1 x 500mb/s channel by fibre pair

Uurban Communities within Region, Also SOME RURAL

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Benefits – “Location Agnostic Broadband” for the Region

The following Table sets out the Benefits associated with the work carried out to support and inform the Tasman ROI Response, as well as those achievable as a result of the acceptance of the proposals made in this document:

<table>
<thead>
<tr>
<th>Main Benefits</th>
<th>Who Benefits?</th>
<th>Direct or Indirect?</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Support better understanding of the broadband domain for the end-user</td>
<td>Community Supplier</td>
<td>Direct</td>
<td>Provides the end-user and the community with more clarity related to delivery. Being well informed leads to sound decision making</td>
</tr>
<tr>
<td></td>
<td>Crown</td>
<td>Direct</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Direct, Indirect</td>
<td></td>
</tr>
<tr>
<td>2. Focus upon delivery to the End-User, Consumer requirements and delivery</td>
<td>Consumer Supplier</td>
<td>Direct</td>
<td>Promotes the Quality of Service delivery to the end user and supports supplier transparency of offerings,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Direct</td>
<td></td>
</tr>
<tr>
<td>3. End-User Quality of Service Focus</td>
<td>Consumer</td>
<td>Direct</td>
<td>Promotes commercial competition. The buyer will choose a supplier based upon their ability to deliver a service</td>
</tr>
<tr>
<td>4. &quot;Location Agnostic Broadband” delivery</td>
<td>Rural Communities</td>
<td>Direct</td>
<td>Removes the so-called rural / urban divide</td>
</tr>
<tr>
<td></td>
<td>Region Country</td>
<td>Direct</td>
<td></td>
</tr>
<tr>
<td>5. Realistic delivery to end-user based upon what the technology can deliver when properly implemented</td>
<td>Region Communities</td>
<td>Direct</td>
<td>Recognises that the technology is capable of delivering much more when implemented efficiently without artificial constraints</td>
</tr>
<tr>
<td></td>
<td>Crown</td>
<td>Direct, Direct</td>
<td></td>
</tr>
<tr>
<td>6. Highly cost effective delivery</td>
<td>Communities</td>
<td>Direct</td>
<td>Cost of delivery optimised, whilst achieving the desired end result. Transparency on delivery costs, reduction in capital requirements</td>
</tr>
<tr>
<td></td>
<td>Region</td>
<td>Direct</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crown</td>
<td>Direct</td>
<td></td>
</tr>
<tr>
<td>7. Increased commercial supplier transparency</td>
<td>Crown</td>
<td>Direct</td>
<td>Highly transparent delivery model, resolves current issues related to contracts and delivery of broadband</td>
</tr>
<tr>
<td></td>
<td>Region</td>
<td>Direct</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communities</td>
<td>Direct, Indirect</td>
<td></td>
</tr>
<tr>
<td>8. Highly transparent for all those involved, particularly the community and the end-user.</td>
<td>Region Communities</td>
<td>Indirect</td>
<td>Support better understanding and transparency of the whole broadband supply and delivery process. Simple and plain English delivery and communication</td>
</tr>
<tr>
<td></td>
<td>Suppliers</td>
<td>Direct</td>
<td></td>
</tr>
<tr>
<td>9. Make the best use of the existing broadband building blocks that are available across the region, regardless of what they may be</td>
<td>Crown</td>
<td>Direct</td>
<td>Better leverage all of the available technology to rapidly deliver to the needs of the region, in particular rural and distance communities. Deliver mobile phone coverage to remote areas and communities more quickly</td>
</tr>
<tr>
<td></td>
<td>Region</td>
<td>Direct, Direct</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communities</td>
<td>Indirect</td>
<td></td>
</tr>
<tr>
<td>10. Looks to support the efforts of MBIE and the Crown in a constructive manner, whilst addressing and resolving the shortcomings of the past.</td>
<td>Crown</td>
<td>Direct</td>
<td>Recognises the limitations of the past, whilst addressing and resolving them</td>
</tr>
<tr>
<td></td>
<td>Country</td>
<td>Direct, Direct</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Region</td>
<td>Direct</td>
<td></td>
</tr>
<tr>
<td>11. Address the known regional issues with UFB, RBI and MBSF leveraging all available technology to rapidly deliver a solution for the region</td>
<td>Crown</td>
<td>Direct</td>
<td>Resolving the identified issues, whilst allowing for a rapid delivery approach.</td>
</tr>
<tr>
<td></td>
<td>Region</td>
<td>Direct, Direct</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remote</td>
<td>Direct</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communities</td>
<td>Direct</td>
<td></td>
</tr>
</tbody>
</table>
12. Delivers the greatest possible “Bang for Buck” in the interests of the Tasman community, the region and New Zealand as a whole.

<table>
<thead>
<tr>
<th>Crown Country Region Suppliers</th>
<th>Direct</th>
<th>Direct</th>
<th>Direct</th>
<th>Indirect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supports the efforts of the Crown seeking to achieve the desired outcome for the end community, rural and remote communities, more cost effectively.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Assumptions, Constraints and Dependencies

Assumptions

All assumptions associated with this ROI response have been documented and subject to ongoing review by Tasman District Council, with reference to its advisors.

- Formal planning and costing is required as a part of “LAB” pilot and proof of concept
- The funding requested is unlikely to be sufficient to address all of the needs of the Tasman District.
- National providers can be convinced that it is worthwhile and appropriate to adopt “LAB” as it is in the community interest and their commercial interest to do so.
- Regional providers can be convinced that it is worthwhile and appropriate to adopt “LAB” as it is in the community interest and their commercial interest to do so.
- LAB is built on the availability of accessible open access multi-core fibre.
- Tasman District Council owned or managed tower locations (or equivalent) are made available to allow the expansion of LAB to service remote and rural communities, at minimal cost.
- LAB will operate on a principle of mutual co-location on existing transmission sites where applicable.

Other assumptions as may be appropriate and subsequently identified

Constraints

- The need for local knowledge to be combined with appropriate technical and commercial expertise.
- Tasman District Council is not positioned to deliver LAB.
- Local delivery of LAB will require the funding. A previous example of this approach was the Nelson Regional Economic Development Agency’s successful delivery of the Broadband Challenge for the Ministry of Economic Development.
- Timely delivery of the necessary funding.

Other assumptions as may be appropriate and subsequently identified
<table>
<thead>
<tr>
<th>Critical Success Factor</th>
<th>Future State</th>
<th>Recommended Option Fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Fit TDC</td>
<td>Directly aligns with ROI and deliverables</td>
<td>Complete</td>
</tr>
<tr>
<td>Strategic Fit MBIE</td>
<td>Directly aligns with ROI and deliverables</td>
<td>Complete</td>
</tr>
<tr>
<td>Strategic Fit National</td>
<td>Directly aligns with and supports desired Central Government Outcomes for Broadband</td>
<td>Complete</td>
</tr>
<tr>
<td>Strategic Fit Functional Leadership</td>
<td>Directly aligns with design, intent and directions of government ICT functional leadership</td>
<td>Complete</td>
</tr>
<tr>
<td>Meets TDC Objectives</td>
<td>Supports de-risk of existing systems and platforms. Improves delivery capability, releases funds for investment elsewhere</td>
<td>Complete</td>
</tr>
<tr>
<td>Minimise Exceptions in process or platforms broadband delivery across the region</td>
<td>Focused Approach to Standardisation and Modernisation. Minimise exceptions in process or platforms via robust management process. Clear mandate to deliver and manage</td>
<td>Delivers – Reducing Variance</td>
</tr>
<tr>
<td>Communicate capability internally</td>
<td>Clear and consistent communications and understanding on what is being delivered and why</td>
<td>Delivers</td>
</tr>
<tr>
<td>Measure Costs and Delivery</td>
<td>More effective ability to measure all regional Broadband Delivery against a single Service and Delivery Framework.</td>
<td>Delivers</td>
</tr>
<tr>
<td>Manageability</td>
<td>Highly manageable</td>
<td>Much greater than existing</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Increased flexibility in delivery approach and ability to deliver Location Agnostic Broadband to region on demand</td>
<td>Much greater than existing due to economies of scale</td>
</tr>
<tr>
<td>Do-ability</td>
<td>Yes, more easily achievable than other alternatives, with clear direction and mandate to do so</td>
<td>Complete</td>
</tr>
<tr>
<td>Quality of Service</td>
<td>Full High Capability Broadband available to end-user, location agnostic on a rapid delivery timetable for proof of concept, then Regional rollout Design and delivery construct allows for region to work co-operatively with vendor community, to delivery to Community needs</td>
<td>Complete – Whole of region coverage, scalable to national</td>
</tr>
<tr>
<td>Completeness of Service</td>
<td>Complete service, all aspects of technology and broadband delivery</td>
<td>Complete – Entire technology stack for entire region requirement</td>
</tr>
<tr>
<td>Politics/Organisational Dynamics</td>
<td>Clear and unequivocal leadership and direction is necessary to deliver to requirements in the interests of the common good, rather than individual or large commercial delivery agendas</td>
<td>Recognition needed that whole of region benefit is of paramount importance.</td>
</tr>
<tr>
<td>Regional and National Innovation</td>
<td>Yes. Allows the region to focus upon broadband delivery and innovation, supporting communities, rather than worrying about the infrastructure and platforms to deliver them</td>
<td>Much higher, unlocks ability of region and Suppliers to deliver an increased level of innovation in approach to broadband delivery.</td>
</tr>
<tr>
<td>Capital Investment Required</td>
<td>Least cost option, when compared with other future state options being considered by Central Government</td>
<td>Requires lower level of capital investment when compared with other options</td>
</tr>
<tr>
<td>Ongoing BAU run cost once implementation Complete</td>
<td>Lower than any other available option</td>
<td>Requires lowest level of BAU run cost when compared with other options</td>
</tr>
</tbody>
</table>