

# The Treasury

## Budget 2015 Information Release

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The Chair  
Cabinet Economic Growth and Infrastructure Committee

## **EXTENSION OF BROADBAND INITIATIVES AND ESTABLISHMENT OF MOBILE BLACK SPOT FUND**

### **Proposal**

1. This paper seeks agreement to extend the Government's existing Ultra-Fast Broadband initiative and Rural Broadband Initiative, and to establish a Mobile Black Spot Fund. Agreement in principle is sought for the policy parameters for these three initiatives, a timetable and process steps. Approval is also sought for the release of a *Registrations of Interest – Supply* document to potential service providers and key stakeholders and a *Registrations of Interest – Support* document for local authorities, both of which relate to all three initiatives. The *Registrations of Interest - Support* document provides local authorities with practical information on ways they can seek to make their districts attractive for broadband and mobile investment. Finally, agreement is sought for subsequent operational decisions to be delegated to appropriate Ministers.

### **Executive summary**

2. Information and communications technology is a critical driver of economic growth. A recent assessment found that high-speed broadband applications could have economic benefits to end-users of \$32.8 billion over 20 years. Improved broadband connectivity is particularly important for New Zealand businesses to overcome some of the challenges faced by geographic isolation and distance to markets. Similarly, broadband and mobile connectivity in rural and remote areas has significant economic benefits, as well as social benefits for rural populations with improved access to healthcare, education, and emergency services and reduced social isolation.
3. The Government's Ultra-Fast Broadband initiative, Rural Broadband Initiative, and 700 MHz 4G mobile network obligations were developed as New Zealand's aging telecommunications infrastructure required upgrades to provide high speed broadband to a greater number of New Zealanders and support growing usage of bandwidth-intensive applications. Private investment in broadband infrastructure was limited due to the extent of investment required and the demand risk or uptake by users, so Crown funding and levy spending was used to attract network operators.

4. The programmes are on track with good uptake. An opportunity has arisen to extend the Ultra-Fast Broadband and Rural Broadband Initiative programmes, as there remains considerable unmet demand and poorly served customers; for example, there are around 20,000 end users only able to access the internet through dial-up. It is also proposed to implement a new programme aimed at reducing mobile black spots. The Prime Minister announced the Government would extend the Ultra-Fast Broadband programme from the 75% population target to reach 80% of New Zealanders. In addition mobile coverage and broadband connectivity in rural and remote areas would be improved through the proposed RBI extension and a new fund aimed at addressing gaps in cellular mobile coverage. Use of this funding requires a legislative change to continue the levy at its current rate, as it is due to decrease from 2016/17.
5. The first step in the process of extending the Ultra-Fast Broadband and Rural Broadband Initiative programmes and implementing a new Mobile Black Spot Fund will be to undertake a *Registration of Interest – Supply* process with potential providers and other stakeholders, while concurrently seeking *Registrations of Interest – Support* from local authorities wishing to support these programmes in their districts. Local authorities will be invited to make commitments aimed at preparing their communities to make maximum use of potential infrastructure and encouraging more rapid and extensive deployment in those areas. The Registration of Interest process will outline to potential providers and stakeholders the nature and scope of the proposed programmes and seek feedback on policy and technical elements.
6. Decisions on the final coverage for each of the three programmes, and the amount and phasing of Crown expenditure, are matters proposed to be considered once additional information has been gathered through the Registration of Interest processes by June 2015. This information will enable Cabinet to assess the specific aspects of each programme before decisions to commit to expenditure are made.
7. It is proposed that technical decisions within the broad parameters set out in this paper be delegated to a group of Ministers including the Prime Minister, and the Ministers of Finance, Economic Development, Local Government, and Communications.

## **Background**

8. The Government's Ultra-Fast Broadband (UFB) initiative, Rural Broadband Initiative (RBI), and 700 MHz spectrum build targets for mobile network operators to provide 4G services are improving connectivity for New Zealanders. These initiatives have dual objectives of addressing social and rural exclusion, and boosting economic growth.
9. Information and communications technology (ICT) is one of the critical levers for achieving the Government's economic growth objectives, through contributions from both the ICT sector and through the productivity increases that ICT can provide across the economy. ICT enables a wide range of economic and social benefits by changing the way organisations can operate across most sectors of the economy. Greater and smarter use of digital technologies can encourage business productivity across a range of sectors, improve health and education outcomes, enhance service delivery, and increase social connectivity and inclusion.

10. A recent assessment indicates that the wider economic benefits to end-users of high-speed broadband applications could amount to \$32.8 billion over 20 years.<sup>1</sup> This assessment considered the application of fast broadband across four sectors: healthcare, education, business, and dairy and estimated the value of increased productivity, and new revenue from online marketplaces.
11. The Government has a role in assisting New Zealand's responsiveness to technological change by increasing the speed at which we can embrace opportunities presented by ICT. Without investment by the Government, infrastructure development in rural areas would be sporadic and limited, as the expected rate of return on the investment for such new rural infrastructure in remote and less densely populated areas is generally not commercially viable.
12. Given the success of the Government's current broadband initiatives, there is an opportunity now to extend them to a greater number of New Zealanders and to implement a new programme to provide mobile network coverage in unserved areas.
13. The Speech from the Throne stated the Government would continue its programme of investment in modern infrastructure and specifically that the UFB programme would be extended from its 75% population target to reach 80% of New Zealanders. The Prime Minister separately indicated that funds of \$152 million to \$210 million will be set aside for this purpose from the Future Investment Fund. In addition, it was announced in the lead up to the General Election that \$150 million would be set aside from the Telecommunications Development Levy revenue to improve mobile coverage and broadband connectivity in rural and remote areas.
14. This paper sets out proposals to progress these goals.

## Comment

### *Ultra-Fast Broadband (UFB)*

15. The UFB initiative was developed as a key part of the Government's wider strategy to increase New Zealand's global competitiveness. Improved broadband connectivity has been shown to have strong economic and social outcomes. The economic benefits of fibre-to-the-premises (FTTP) to 75% of the New Zealand population are in the range of \$2.7 billion to \$4.4 billion per year.<sup>2</sup> Government intervention was required to achieve these benefits as two key constraints limit private investment in FTTP: the size and timing of investment required, and the demand or uptake risk by users.
16. The UFB initiative was established with Crown funding to accelerate the deployment of FTTP to 75% of New Zealanders over ten years (by the end of 2019) – concentrating in the first six years (by the end of 2015) on priority broadband users such as businesses, schools and health services, plus greenfield developments and certain tranches of residential areas. The level of Crown investment in the first phase will be up to \$1.345 billion, which is expected to be at

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<sup>1</sup> Building the Benefits of Broadband: How New Zealand can increase the social & economic impacts of high-speed broadband, Alcatel-Lucent, 2013.

<sup>2</sup> New Zealand Institute, 2008. Delivering on the Broadband Aspiration: A Recommended Pathway to Fibre for New Zealand.

least matched by private sector investment, to deliver UFB services on a wholesale basis to any retail service provider (RSP) on a non-discriminatory basis.

17. The Crown-owned company Crown Fibre Holdings (CFH) was established to manage the tender, contracts and implementation of the UFB deployment. New Zealand was divided into 33 candidate areas (selected as the country's largest population centres according to Statistics New Zealand projections for 2021) and tenders were let for the provision of the UFB infrastructure. The Crown invests in UFB via CFH through four partnerships:
  - Chorus – 69% coverage
  - Enable Networks – 15% coverage (partner Enable Services)
  - Ultrafast Fibre – 14% coverage (partner Waikato Networks)
  - Northpower Fibre – 2% coverage (partner Northpower Ltd).



Local Fibre Companies
18. Implementation began in 2010, and as of December 2014 (the latest figures available), approximately 70,000 end users were connected to UFB with deployment tracking 7% ahead of plan. Uptake rates are at 12% and increasing, with approximately 5,000 new connections per month and forecasts indicating 40-45% of all potential end users (customers) will be connected to UFB by late 2019. The Crown's net investment as at 31 December 2014 totalled \$527.5 million and the project was 42% complete. By the end of 2015 all priority users, that is, schools and hospitals as well as 90% of businesses, will be able to connect to the UFB infrastructure.
19. The UFB initiative has seen strong success in the education area. All urban schools will have access to UFB by the end of 2015, with deployment to 92% of the target urban schools achieved to date, and 97% of urban schools connected among those able to connect. The vast majority of these connections are through the Government's Network-for-Learning initiative. A number of schools have reported improved educational outcomes as a result.<sup>3</sup>
20. Demand for UFB from residential customers is expected to rise as video entertainment increasingly moves online, in particular with the recent launches of online video services by Spark (Lightbox) and Sky (Neon), and the upcoming launch of Netflix.
21. The current UFB initiative will not conclude until 2019. Projections now indicate that the approved funding for UFB 1 could support deployment to a slightly higher percentage of the population than the programme's 75% target due to efficiency gains, changes in urban density and extensions within existing candidate areas. This could fund a further 1% population coverage on current contractual funding terms [12]

I will update

Delegated Ministers upon receipt of this advice.

<sup>3</sup> 2020 Communications Trust "Digital Technologies in New Zealand Schools 2014 Report" October 2014

22. A number of major economies have policies focused on lifting broadband speeds.<sup>4</sup> New Zealand currently has an average broadband speed of 7 Mbps<sup>5</sup> (42nd global ranking), while fibre-rich nations such as Japan and South Korea have average speeds of 15 Mbps and 25 Mbps respectively. The UFB initiative is already having an impact on New Zealand's relative performance amongst OECD countries, with New Zealand being first in the OECD for growth of fibre connections in the year to June 2014.<sup>6</sup>

### *Ultra-Fast Broadband Extension (UFB 2)*

23. The Government's role in enhancing connectivity is to invest in communications infrastructure where it is uneconomic for private investment alone. Given the success of the existing UFB programme ("UFB 1"), there is now an opportunity to extend UFB to a greater number of New Zealanders, enhancing the economic and social benefits of improved broadband connectivity. As noted above, the Prime Minister has announced the intention to extend UFB to reach 80% of New Zealanders, and funds of \$152 million to \$210 million will be set aside for this purpose. Extending UFB will accelerate the construction of a world-class high-speed broadband network to enable the majority of New Zealanders to take advantage of digital technologies.
24. I propose an Ultra-Fast Broadband extension ("UFB 2"), with a key policy goal of increasing population coverage from the 75% target for UFB 1 by at least a further 5%, to not less than 80% population coverage, within the stated funding envelope of up to \$210 million. The exact percentage coverage and required level of expenditure can be assessed against criteria I outline below, once additional information has been gathered from the market and stakeholders, and the UFB 1 baseline confirmed.
25. UFB 2 should retain the central objective of deploying an open access FTTP network capable of delivering at least 100 Mbps, upgradeable to 1 Gbps. Other policy settings in place for UFB 1 would also apply to the expansion ensuring consistency for the industry.
26. I consider UFB coverage should be increased in:
- areas surrounding existing deployments which are not covered by UFB 1, or where the original boundary lines have become outdated; and
  - additional towns selected for deployment<sup>7</sup>.

<sup>4</sup> For example, the President of the United States announced in January 2015 a major US Federal Government policy to remove legislative and regulatory barriers hindering high speed (Gbps) network development especially in smaller communities. The Governor of the State of New York has announced a public-private partnership of US\$0.5 billion to match private sector investment in fibre networks to provide speeds of at least 100 Mbps in urban areas of the state.

<sup>5</sup> Akamai State of the Internet Report, Q3-2014 (Volume 7, number 3), January 2015

<sup>6</sup> OECD Broadband Statistics, Annual Growth of fibre connections among countries reporting fibre subscriptions, June 2013-2014.

<sup>7</sup> Material issued during the General Election stated that the following towns could be strong contenders for inclusion in the UFB 2 extension including, but is not limited to: Te Puke, Motueka, Morrinsville, Kerikeri, Huntly, Thames, Matamata, Otaki, Kawerau, Waitara, Kaitia, Dannevirke, Alexandra, Stratford, Whitianga, Cromwell, Taumarunui, Picton, Foxton, Kaikohe, Marton, Te Kuiti, Katikati, Temuka, Waihi, Waipukurau, Warkworth, Carterton, Dargaville, Opotiki, Snells Beach, Te Aroha, Wairoa, Paeroa and Westport.

27. While there are risks associated with extending the UFB initiative, given the experience gained during the Government's existing broadband initiatives, I am confident the risks can be successfully managed. The major risks, which are interrelated, are fiscal and demand side risks: [12]

I plan to manage this issue with a set of integrated policies that aim to improve the costs and risks of investment in UFB 2 with the Crown's private commercial partners:

- Actively engage with local authorities on ways they can lower the cost and risks associated with deployment and uptake to encourage greater UFB provider investment;
  - Refine elements of the existing UFB technical specifications and explore use of alternative technology architectures; while remaining consistent with core UFB objectives; and
  - Competitive tendering of providers for UFB deployment and flexible Crown funding models that enhance negotiation leverage.
28. I explore each of these elements further below. The other major risk relates to management; I have confidence in the existing CFH management processes and intend to retain these.

*Local Authority Incentive to be "Fibre Ready"*

29. In order to maximise the benefit to be gained from the public expenditure on the infrastructure, I propose CFH and MBIE undertake an active programme of engagement with Local Government New Zealand (LGNZ) and local authorities to explore practical ways that the cost and risk of investment in UFB 2, RBI 2 and mobile black spots by suppliers can be reduced.
30. Local authorities would be invited to make contractual commitments (in relation to all three programmes proposed in this paper) to attract supplier investment and encourage more rapid and extensive deployment. This could include, among other things, lowering regulatory costs, granting of necessary consents in advance, or guaranteeing minimum demand levels and providing uptake assistance. This approach would lower the level of Crown funding per premise to support infrastructure deployment. Attached as Annex 3 is a *Registration of Interest – Support (ROI – Support)* document designed to inform local authorities of the Government's three programmes outlined in this paper and to provide a template Digital Enablement Plan to encourage investment in a defined area. A Guide to assist local authorities to prepare a Digital Enablement Plan is attached as Annex 4. The *ROI – Support* also seeks binding commitments from local authorities that would be made available, in turn, to inform the final bid process for provision of infrastructure for these three programmes. I propose a period of 3½ months for local government to prepare and submit commitments on mechanisms for attracting deployment investment and 6 months for the completion of the Digital Enablement Plan.

### Refine Elements of UFB 1

31. The technical specifications for the UFB 1 programme should be largely maintained, as they are international best practice and widely utilised by the industry. With ongoing technological advances and experience gained in the programme to date, some changes are being assessed that could reduce costs or increase uptake while not impacting adversely on the performance outcome or strategic objective. Specific issues being explored include:
- **Additional technological options for customer connections** – such as the option to use G.fast (only where the owner elects to do so), which provides very high speeds along copper for short distances and enables the use of existing copper lead-ins to the customer’s premise from the fibre termination point in the street, or in a multi-tenanted building basement. The G.fast technology is still in the early stages of commercialisation and has not yet reached general vendor availability. If the technology is assessed as reliable and becomes available within the project timeframe, then an option for end users to use this less expensive technology could assist with raising uptake rates for the current and expanded UFB initiatives. Use of existing copper lead-ins would avoid the complications that local fibre companies (“LFCs”) have had under UFB 1 of gaining access to some land under shared ownership to install fibre lead-ins (although I note that the copper lead-ins for single dwellings are owned by Chorus). I consider that such technology should only be used as a customer option, and I am separately considering options to address the issues with land access.
  - **Contract specifications** – such as increasing the length of the customer premise lead-in (the connection from the road to the premise) that is funded to a standard 100m per end user, up from the existing range of 15 to 100m depending on deployment circumstances. [12]  
[12] but may increase uptake rates.
  - **Backhaul** – assistance for purchasing backhaul from UFB 2 towns to existing UFB points of interconnection. This support was not necessary for UFB 1 as the size of candidate areas meant that RSPs had points from where they could provide services. Given the size of smaller towns to be considered for the proposed extension, [12]
  - **Pricing** – [12]
32. I have instructed officials to explore these and other options. I propose the release of *Registration of Interest – Supply (ROI - Supply)* document to potential providers and stakeholders that will outline the nature and scope of the Government’s three broadband and mobile programmes proposed in this paper, and seek feedback on policy and technical elements. I attach that document as Annex 2. I propose that Delegated Ministers be given authority to approve any changes in Government

policy, following consideration of the feedback from industry and stakeholders, in respect to the policy outcomes and high level technology choices for UFB 2 that are different to UFB 1.

### *Crown Funding Model*

[12]

[12][15]

35. Greater potential coverage can be achieved with a higher level of Partner contribution. [12]
  
36. The final amount of Crown funding per premise passed and the amount of new coverage will not be certain until after tenders have been received from potential suppliers and the subsequent commercial negotiations are concluded (this reflects the UFB 1 approach). Responses to the *ROI – Supply* will give an earlier indication of the level of investment interest from potential suppliers, and I will report back to the Cabinet Economic Growth and Infrastructure Committee if the anticipated coverage area changes materially. The tendering process is outlined below, and an indicative timeline is outlined in Annex 1.

### *Process and Criteria for UFB 2 Coverage Area*

37. I note that the cost of deploying UFB will vary on a town by town basis due to issues such as availability of overhead infrastructure, ground conditions (such as a shallow rock base) and the length of backhaul required (that is, connecting to an existing fibre network). These and other issues, such as uptake projections, will

need to be weighted and assessed when selecting areas for UFB 2 coverage. The uptake and economic growth assessments or other special factors could result in some areas that involve higher cost per premise being selected over some lower cost areas.

38. Given the significance of the criteria for the selection of the UFB 2 coverage areas, I will seek feedback in the *ROI – Supply* document on the criteria relevant to the technical specifications and terms of supply, involving such issues as:
  - Coverage achieved by set date
  - Cost to the Government per premise passed
  - Compliance with network requirements.
39. These criteria focus on the objective of achieving a cost effective increase in population coverage of at least 5%. Other criteria that relate to the support and commitments offered by local authorities will also be evaluated. Local authorities could influence the likelihood of investment in particular areas by undertaking a range of initiatives to reduce the cost of deployment or encourage uptake, and by developing a comprehensive Digital Enablement Plan that is focussed on increasing business and community digital engagement.
40. In addition to these project and support criteria, assessment will also be made of factors that relate to the overall desired outcome of the programme, such as the economic growth potential of the area, provision of Better Public Services and social inclusion.
41. I have outlined my plan above to release a *ROI – Support* document, which is designed to enable local authorities to make their preferred areas attractive for UFB investment. Upon review of information received in response to the *ROI – Supply* process, and to the *ROI – Support* from local authorities on supplier-neutral commitments they intend to implement to lower the cost or risk of investment, CFH will issue a Request for Proposals (RFP) document. Tenders received from potential suppliers would incorporate local authority commitments. CFH would then assess and select the bids that meet the criteria. I will consult with Delegated Ministers and assess other factors such as economic growth potential and demographic information, before making a recommendation to Cabinet on the selection of new deployment areas and the total cost to the Crown of the expansion.
42. Once Cabinet has confirmed the UFB 2 areas and costs to the Crown, CFH will make available information concerning the coverage and towns to the successful bidders.
43. I expect that UFB 2 contracts could be in place by 2016, with completion possible in [12]
44. I propose that the UFB 2 programme maintain CFH in the role of managing deployment. Note that commercial arrangements established as part of the funding of UFB 1 infrastructure mean that CFH has a potential conflict of interest in respect of certain LFCs. CFH co-invests in these LFCs with existing Partners, has appointed its officers as directors on the boards of LFCs, and has a fiscal interest in

repayment of the Crown subsidy. While this conflict is acknowledged.<sup>[9]</sup>

I am advised that to the extent the issue arises it can be addressed by appropriate legal disclosure and other standard probity strategies. Officials will report to Delegated Ministers specifically on this issue.

### *Rural Broadband Initiative (RBI)*

45. The RBI was developed to address social and rural exclusion, and to boost economic growth. From a qualitative perspective, there is broad consensus both in New Zealand and internationally about the importance of electronic connectivity for households and businesses for communications, information, daily business (including access to government services), education, health care and entertainment. Fast national and international internet connections are of particular importance to New Zealand to reduce the challenges of New Zealand's distance from markets and small size. Similarly, faster connections are desirable for remote areas within New Zealand to achieve social and economic integration with the rest of New Zealand and internationally.
46. The objective of the RBI is to ensure that broadband services are available to all non-urban New Zealand schools, hospitals, and communities. The RBI is funded by \$48 million of Crown funding and \$252 million, spread over six years, from the Telecommunications Development Levy (TDL).
47. The current RBI programme is designed to provide broadband access at peak speeds of  $\geq 5$  Mbps by the end of 2016 to:
  - 80% of rural homes and businesses that cannot be addressed under the UFB programme,
  - High priority rural users (schools, libraries and hospitals) via fibre capable of  $\geq 100$  Mbps
  - 57 remote rural schools via wireless connections capable of peak speeds of  $\geq 10$  Mbps.
48. While the RBI programme is addressing its objectives, I outline below the unmet demand in rural areas outside of the existing programme for broadband services, in terms of quality and availability.
49. The RBI programme is directly managed by MBIE and deployed by Chorus and Vodafone. It is currently on track to be completed by the end of 2016, with Vodafone having upgraded 305 rural cell towers for broadband services (79% of total programme target) and constructed 104 new rural towers (68% of total programme target). Chorus has upgraded over 81,000 rural fixed copper lines for new or improved broadband services (80% of total programme target).
50. High speed broadband connections have been made available to 961 rural schools as at 31 December 2014 (93% of total programme target for rural schools under the

RBI) and 36 rural hospitals, leaving only one more hospital to be connected. In addition, 44 remote rural schools have received wireless connections.

51. There are encouraging commercial and community initiatives which extend broadband services beyond current UFB 1, RBI 1 and 700 MHz build targets. Examples include:
- Satellite services providing 5 Mbps or more are available throughout New Zealand
  - A number of small providers, such as Gisborne.net and Inspire.net, offer vertically integrated local broadband services, often based on wireless technologies
  - Vodafone has indicated that the RBI roll-out, where it is providing fixed wireless links, has revealed more commercial potential for cellular services than expected
  - A number of small providers are now offering wireless broadband services to local communities based on fibre connections to schools. The Ministry of Education has released guidelines for schools entering into arrangements with such providers.
52. However, the following limitations and caveats apply:
- The retail cost of 5 Mbps or higher service by satellite is expensive, at about \$220 a month, plus significant installation costs. It may therefore be overly expensive for many remote households. Satellite service also has general performance problems including an inherent lag (latency), which limits its usefulness for browsing media-rich web pages and for two-way services such as voice services and gaming.
  - Many of the small niche fixed wireless services use non-licensed spectrum (which can be subject to interference) and solar power (subject to outages) and are consequently less reliable.
53. Overall, while market developments are encouraging, many gaps remain and the commercial roll-out of broadband to remote areas is likely to be patchy and slow. There is a risk of a digital divide between urban and non-urban areas, which impacts not just on business but educational, health and social outcomes. The divide could widen as urban areas gain access to more reliable applications and increased data capacity and speed. Discussions with industry indicate that Government assistance will be required to improve access to basic broadband services at reasonable prices in rural and remote areas outside of the existing RBI.

*Rural Broadband Initiative extension (RBI 2)*

54. I propose a Rural Broadband Initiative extension ("RBI 2") with the objective of expanding fast broadband outside of UFB 1 and 2 areas to achieve the greatest population coverage percentage able to access the minimum performance standard within the \$100 million funding envelope.

55. The complex challenge of expanding rural broadband coverage is likely to involve a multi-technology mix of solutions. The increased dissatisfaction with services from rural fixed line cabinets is due to increased customers, high download demands constrained by cabinet technology and backhaul limitations. For example, around 20,000 end users are only able to access internet through dial-up. Depending on the policy and technology options chosen, it is feasible to expand broadband access of a minimum performance standard to a greater percentage of rural premises within the funding envelope for RBI 2. Where broadband coverage which meets the minimum standard is unlikely to be achieved for remote populations with this funding, non-terrestrial (satellite) broadband may be the only practical solution.
56. Therefore, RBI 2 may involve a mix of performance upgrades in areas with existing copper-based services (via upgrades to backhaul and to low-capacity or non-broadband cabinets), expanded terrestrial wireless broadband coverage where this is achievable, and where it is not, a solution which enables rural users to access satellite broadband, such as through a subsidy of customer premises equipment. I propose that those areas where unmet demand for adequate broadband is greatest be prioritised, in order to achieve the greatest benefit for the funding allocated.
57. RBI 2 will avoid areas of existing and anticipated UFB 1 and UFB 2 coverage. I will ensure that the RBI 2 programme limits overbuilding areas of existing telecommunications infrastructure, where this meets the performance specifications of the existing Rural Broadband Initiative ("RBI 1") and RBI 2.
58. I propose that the *ROI – Support* process apply to all three programmes covered in this paper. The *ROI – Support* would seek commitments from local authorities to leverage physical and financial resources, regulatory assistance, and marketing and uptake support to minimise deployment, operational and uptake challenges. These would be in the form of binding commitments which would then be taken into account in provider bids.
59. The *ROI – Supply* will invite consideration of innovative technological solutions. I consider that the performance specifications of the original RBI (minimum 5 Mbps peak speeds) should remain as minimum guidelines, however as technology has advanced since the inception of the RBI, I suggest that the *ROI – Supply* invite telecommunications providers to explore ways to improve upon this.
60. For RBI 2 to improve economic and social outcomes by lifting connectivity, end users must effectively exploit their use of infrastructure. I intend to direct my officials to implement a work programme to monitor, evaluate and promote maximum use of RBI 2 infrastructure.

### ***Telecommunications Development Levy (TDL) Funding***

61. The Government's announced policy is that \$150 million will be set aside to improve mobile coverage and broadband connectivity in rural and remote areas. While these objectives are interrelated, subject to budget and legislative decisions, I propose \$100 million be allocated to RBI 2, and \$50 million to the establishment of a Mobile Black Spot Fund (discussed below).
62. I propose that the \$150 million is to be appropriated from the TDL. At present the TDL amount steps down from \$50 million in 2015/16 to \$10 million for 2016/17 and thereafter (with CPI indexing). I propose that the period of the current levy payment

be extended by three years. This has legislative implications as outlined below. Additionally, I intend that amendments are made in respect of the determination process for allocating the TDL across the telecommunications industry.

### ***Procurement Approach***

63. I have asked my officials to explore additional technical, regulatory and pricing issues through the *ROI – Supply*, and to report back to me with recommendations. I propose that Delegated Ministers apportion \$100 million of RBI 2 funding by deciding upon the exact mix of technologies and funding arrangements. Such apportionment would occur after responses to the single *ROI – Supply* released for all three programmes are received. The *ROI – Supply* will seek feedback on the following issues, among others:
- Open access requirements for RBI infrastructure. The existing RBI contracts with Vodafone and Chorus require both providers to offer wholesale access to their RBI infrastructure. In the case that RBI 2 contracts are won by smaller service providers, or on region-by-region terms, contract recipients may not be practically able to offer wholesale services. This limits the extent of open access objectives. There are some precedents under RBI 1; some small community markets are currently served by vertically-integrated providers.
  - Mandatory roaming or co-location (or a combination of these) arrangements for any new mobile towers built under the RBI 2 programme, which would require all three mobile networks to be able to co-locate on any RBI 2 tower built by any one network. Co-location and roaming would facilitate competition but may incur technical challenges.
64. I propose that an RFP seeking provider tenders for the RBI 2 programme be released following the receipt of additional coverage information obtained through both ROI processes, to avoid any overbuild of infrastructure in areas scheduled for fibre deployment under UFB 2. Local authority commitments made during the *ROI – Support* process to reduce the cost or risks of deployment should be reflected in provider tenders.

[8]

[8]

67. The *ROI – Supply* process will provide further information to assess the most suitable management structure for RBI 2 and the Mobile Black Spots Fund. I propose that Delegated Ministers decide this matter following the completion of that process.

#### *Mobile Black Spots*

68. Collectively, Spark, Vodafone and 2 Degrees networks provide mobile access to approximately 97% of New Zealand premises. However, existing mobile networks achieve less than fifty percent (46%) of geographic coverage of New Zealand. There remain many rural and remote areas of New Zealand that would benefit from extended coverage, such as sections of State Highways and remote tourist areas.
69. Initial analysis indicates that the State Highways which carry the majority of tourist traffic<sup>8</sup> collectively have gaps in mobile network coverage (“Black Spots”) of between 5% and 40% of their length depending on the highway. Further information is being gathered in respect of tourism and important business routes. The Black Spots require basic voice service coverage to mitigate elevated safety of life risks on sections of highway, and to provide general mobile services in locations popular with visitors but isolated from core network coverage.
70. I consider that government intervention is necessary to improve network coverage in these Black Spot areas. The benefits of expanded coverage include:
- Improved communications for businesses and residents in these areas
  - Improved public safety, especially on State Highways
  - Making tourism more attractive, especially in remoter and smaller communities.

#### *Mobile Black Spot Fund (MBSF)*

71. I propose the establishment of a Mobile Black Spot Fund to provide funding to network operators for the establishment of cell sites in current Black Spots.
72. The first pre-requisite for an area to be considered a Black Spot is that it has no reliable 3G/4G coverage from any mobile operator for hand held devices. In areas where coverage is available from only one mobile operator emergency calls can still be made from most mobile devices (subject to frequency compatibility) through pre-existing emergency services network roaming arrangements.
73. I propose that the MBSF be established as a \$50 million contestable fund with the objective of providing mobile emergency calling, voice and contemporary data service coverage by subsidising the construction of telecommunications infrastructure in relation to:

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<sup>8</sup> North Island – SH 1, 2, 3; South Island – 1, 6, 8, 73, 94)

- Coverage of selected segments of State Highways, especially where there would be a benefit from providing calling access to emergency services for safety of life and property
  - Coverage of particular tourist sites where access to contemporary mobile voice and data services would improve the visitor experience.
74. I propose that the MBSF be funded from the TDL, as the programme's objectives fall within the terms of the levy (section 90 of the Telecommunications Act).
75. On the assumption that the average cost of Crown funding for each site is around [12] based on RBI 1 site costs, approximately [12] sites could be funded. Terrain and power constraints make the selection of sites an important factor in achieving the greatest balance of costs and benefits under the programme. Additionally it is likely that the nature of service offered at each site, from basic voice to contemporary mobile services, may not be a significant factor in the establishment and operational costs.
76. Selection of sites will need heavy community and other stakeholder engagement, given the extent of Black Spots that exist on priority State Highways and important tourist sites alone. To ensure the greatest benefit is achieved from the MBSF I propose:
- Through the *ROI – Support* process, local authorities be invited to nominate areas consistent with the objectives, and to provide or facilitate ways to reduce the cost or risk of infrastructure investment including demand-side risks. Information will be provided to local authorities on practical ways to reduce costs and risks, such as providing regulatory or land access assistance, or identifying existing infrastructure which can be leveraged.
  - MBIE seek input on nominated areas from a range of stakeholders such as the NZ Transport Agency, Ministry of Transport, New Zealand Police, New Zealand Fire Service, Business NZ, Tourism New Zealand, the Tourism Industry Association and Ministry of Civil Defence and Emergency Management.
  - MBIE prepare a long list of candidate MBSF areas and make the list available to potential service providers.
  - Service providers be invited to assess the operational practicality of sites long listed by MBIE to cover proposed candidate areas
  - MBIE report to Delegated Ministers on locations (not specific sites) for proceeding to open tender and advise on how funding may be balanced between the objectives of safety and tourism.
77. Most costs associated with reducing Black Spots relate to the establishment of the site (e.g. costs associated with access, power, and building the antenna support structure), rather than each site's associated service electronics. As a result, I consider the MBSF should focus on funding of the new site, as opposed to the electronics. This would simplify the programme given the wide range of issues that

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<sup>9</sup> Based on median cost as at January 2015 of [12] assuming lower tower technical specifications and allowing for backhaul to the fibre network.

relate to individual Black Spot sites. This is a matter that I propose be explored in the *ROI – Supply* and will assess further following feedback.

78. I consider it important that the programme:

- Consider opportunities to leverage additional RBI coverage from the MBSF initiative, and use compatibility opportunities with that programme
- Be open to small scale technical solutions for achieving the requirements to provide mobile emergency calling, voice and contemporary data service coverage
- Provide grants for provision of infrastructure where communities offer the most effective assistance in developing and operating new sites, either financially or in kind (e.g. land, access, track maintenance, etc.)
- Not provide funding in areas where one provider has already provided coverage (but service may not be available to a user on a competitor's network except for emergency services roaming)
- Not count winning bids from providers for the MBSF towards existing or future contractual tower-build requirements under the RBI 1 and 2 or 700 MHz programmes.

79. Feedback from the *ROI – Supply* document will inform the programme design that achieves most effective coverage. Officials are examining a number of technical issues, including regulatory issues associated with roaming, whether cost effective co-location would be a requirement for any subsidised towers, and various options regarding technical issues. I propose Delegated Ministers be given authority to decide these issues and progress the programme.

#### *Programme Timeframe and Coordination*

80. Annex 1 outlines the nominal timeframe for major steps for all three programmes, based on the strategy outlined in this paper and its attachments. As noted throughout this paper, I propose that technical decisions within the broad parameters set out in this paper be made by Delegated Ministers. I propose that those Delegated Ministers include the Prime Minister, and the Ministers of Finance, Economic Development, Local Government, and Communications.

81. Following this paper, I will release the *ROI – Supply* document covering all three proposed programmes, and officials and CFH will engage in discussions with local authorities and other stakeholders via the *ROI – Support* document that I will be releasing concurrently with the *ROI – Supply*. The outcome of those discussions, as well as feedback on the *ROI – Supply*, will provide information on the technologies, regulatory, commercial and other issues. By the end of June 2015 once these issues are reported on and decided by Delegated Ministers, it will be possible to assess the preferred approach to each of the three programmes. This will primarily be described in terms of the locations for new fibre roll-out and new and enhanced broadband coverage.

82. While the UFB 2 and RBI 2 projects will broadly move forward in parallel, there will be regulatory, design or pricing issues that require analysis and decision-making by Delegated Ministers. The *ROI – Supply* will explore whether current RBI co-location arrangements have been effective and what could be done to improve these. For RBI 2, in particular, these issues may require some parts of that project to be advanced more slowly and tendering will not proceed until UFB 2 areas have been selected. There may also be advantages in delaying aspects of the RBI 2 and MBSF, if the *ROI – Supply* feedback suggests there is leverage that can be achieved between the two programmes.
83. Following the ROI process, an RFP will be issued to potential infrastructure suppliers, and proposals will be assessed upon a set of agreed criteria. Delegated Ministers will make recommendations to Cabinet before the release of the RFP in August regarding the exact nature and weighting of assessment criteria. Criteria are expected to include factors such as economic growth potential and demographic information. Delegated Ministers are expected to make a recommendation to Cabinet on the selection of new deployment areas and the total cost to the Crown in November, following the RFP review process.
84. I plan to have contract negotiations for UFB 2, the bulk of RBI 2 and at least some of the MBSF underway by the fourth quarter of the 2015 calendar year.

### **Consultation**

85. This paper has been consulted on with The Treasury, Ministry for Primary Industries, Ministry of Social Development, Te Puni Kokiri, the Department of Internal Affairs, the Ministry of Civil Defence and Emergency Management and the Ministry of Transport. The Department of Prime Minister and Cabinet has been informed.
86. I note that the Telecommunications Forum (TCF) which represents levy payers and others in the industry has already made its views known to me about the planned change to the TDL. The TCF stated in its briefing to me that it understands the Government has a role in facilitating and funding the provision of infrastructure in some circumstances, but that “any proposal to extend the levy would not be appropriate”.
87. However, I consider that the extension of the TDL is of overall benefit to industry and consumers. Levy payers also receive direct benefits from levy spending. It is anticipated that much of the future TDL funding earmarked for RBI extensions could be allocated to the larger TDL payers if they secure contracts to supply infrastructure for the RBI extensions. In addition, RBI infrastructure creates opportunities for the industry as a whole as it is open access. This creates competition within the industry, and particularly provides competitive options for consumers in areas where previously there was no service whatsoever. It is proposed that the open access requirement also apply to infrastructure installed under RBI 2 and the MBSF. The *ROI – Supply* will seek feedback on the practicality of open access requirements in the case that RBI 2 contracts are won by smaller service providers, or on region-by-region terms.

## Financial Implications

88. I propose that the UFB extension will be a charge of between \$152 million and \$210 million against the Future Investment Fund. A more precise estimate for the extension will not be known until the business case is completed in June, following the *ROI – Supply* process. The final amount to be appropriated will not exceed this amount. If a lower amount is adequate for the extension this will be the final amount sought for approval by Delegated Ministers, with any surplus remaining in the Future Investment Fund.
89. I propose that the extension of the Rural Broadband Initiative and the Mobile Black Spots Fund, totalling \$150 million, will both be a charge against the Telecommunications Development Levy. I propose that the Telecommunications Development Levy is held constant for a further three years to generate an additional \$120 million to fund these initiatives. The remaining \$30 million is due to be collected by the Crown in 2015/16 under the current provisions in the TDL. This expenditure has been included in the fiscal forecasts and will be fiscally neutral to the Crown with no impact on the operating balance or debt.

## Legislative Implications

90. To fully fund the RBI 2 and the MBSF from TDL revenue the TDL amounts prescribed in Schedule 3B of the Telecommunications Act 2001 will need to be re-set for the three years (2016/17 - 2018/19). In this respect it is intended that the current TDL amount of \$50 million be continued for a further three years (2016/17 – 2018/19). This amendment was sought to be included as part of the Telecommunications (Development Levy) Amendment Bill 2015 in the 2015 Legislative Programme with a suggested priority of category 3: to be passed if possible in 2015.

## Regulatory Impact Analysis

91. The proposed changes to the TDL are subject to Regulatory Impact Analysis requirements. A Regulatory Impact Statement (RIS) has been prepared and is attached to this paper as Annex 5.
92. The General Manager, Strategic Policy Branch and the Regulatory Impact Analysis Review Panel have reviewed the attached RIS prepared by the Ministry of Business, Innovation and Employment. They consider that the information and analysis summarised in the RIS **partially meets** the criteria necessary for Ministers to fairly compare the available policy options and take informed decisions on the proposals in this paper. This is because it is not clear that the preferred levy option provides the greatest net benefit.

## Human Rights

93. There are no human rights issues.

## Gender Implications

94. There are no gender issues.

## Disability Perspective

95. There are no disability issues.

## Recommendations

96. It is recommended that the Committee:

1. **Note** that improved broadband connectivity has been shown to have significant economic and social benefits;
2. **Note** that in the 2015 Speech from the Throne, the Prime Minister stated the Government would continue its programme of investment in modern infrastructure and specifically that the Ultra-Fast Broadband programme would be extended to reach 80 per cent of New Zealanders;
3. **Note** that 'black spots' in mobile network coverage on New Zealand's major State Highways and tourist spots elevate safety of life and property risks, and negatively impact on tourists' experiences;
4. **Note** that the initiative to extend Ultra-Fast Broadband coverage to at least an additional 5% of the population is expected to cost up to \$210 million, as a charge against the Future Investment Fund;
5. **Note** that the initiative to extend the Rural Broadband Initiative to additional areas outside of Ultra-Fast Broadband coverage is expected to cost up to \$100 million, to be drawn from the Telecommunications Development Levy;
6. **Note** that the initiative to establish a Mobile Black Spot Fund to provide funding to mobile network operators to establish cell sites is expected to cost up to \$50 million, to be drawn from the Telecommunications Development Levy;
7. **Note** that the costs estimated in paragraphs 4 to 6 above are subject to confirmation following the outcome of a *Registration of Interest – Supply* process and assessment of commercial, financial and management aspects associated with each of the initiatives;
8. **Agree** that the Telecommunications Development Levy remain at \$50 million per year for a further three years to 2018/19 in order to fund the extended Rural Broadband Initiative and the Mobile Black Spots Fund;
9. **Invite** the Minister for Communications to issue drafting instructions to Parliamentary Counsel Office to give effect to the decision referred to in paragraph 8;
10. **Agree** that the Minister for Communications release *Registration of Interest – Supply* document to potential providers and stakeholders, which will outline the nature and scope of the three initiatives proposed in paragraphs 4 to 6 above, and which will consult on a range of matters including selection criteria and technical specifications for the three programmes;

11. **Agree** that the Minister for Communications release a *Registration of Interest – Support* document to local authorities to inform them of the three programmes referred to in paragraphs 4 to 6 above, and to seek binding commitments from them that will reduce the costs and risks of these programmes to the Crown and suppliers;
12. **Agree** to delegate decision-making regarding the *Registration of Interest – Supply* and *Registration of Interest – Support* processes and their outcomes to the Prime Minister, Minister of Finance, Minister for Economic Development, Minister of Local Government and Minister for Communications;
13. **Agree** that following the *Registration of Interest – Supply* and *Registration of Interest – Support* processes, Delegated Ministers referred to in paragraph 12 will approve the release of a Request for Proposals seeking tenders from potential suppliers for the extended Rural Broadband Initiative in July 2015;
14. **Agree** that following the *Registration of Interest – Supply* and *Registration of Interest – Support* processes, and at the direction of the Delegated Ministers referred to in paragraph 12, Crown Fibre Holdings will issue a Request for Proposals seeking tenders from potential suppliers for the extended Ultra-Fast Broadband initiative;
15. **Agree** that the Minister for Communications report back to Cabinet in November 2015 with a recommendation from Delegated Ministers, referred to in paragraph 12, on areas for deployment of Ultra-Fast Broadband 2 and Rural Broadband Initiative 2 programmes and the cost to the Crown of the programmes, and an update on the Mobile Black Spot Fund as well as providing remaining elements of the business case outlining the commercial, financial and management aspects associated with each of the initiatives;
16. **Agree** that management of the Ultra-Fast Broadband 1 and 2 programmes remain with Crown Fibre Holdings;
17. **Agree** that the management of the Rural Broadband Initiative 2 and Mobile Black Spot Fund programmes will be considered by Delegated Ministers referred to in paragraph 12, following completion of the *Registration of Interest – Supply* process; and
18. **Note** that the Minister for Communications will report to Cabinet by April 2015 on proposals to amend the Telecommunications Act 2001 in respect of the Telecommunications Development Levy's operation, levy amount and expenditure categories, avoidance concerns and associated matters.

Hon Amy Adams  
**Minister for Communications**

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## Annex 1: UFB2, RBI2, Mobile Black Spots – Indicative Activity and 2015 Timeline

Activity	February	March	April	May	June	July	August	September	October	November	December	January
<b>Cabinet</b>												
In Principal approval		→										
Final Coverage approval											→	
<b>Minister(s)</b>												
Report on RoI responses, modification of approach and technical solutions, and nominal coverage							→					
Approval of UFB2, RBI2, MBSF short list+ negotiating terms										→		
<b>MBIE</b>												
RoI Supply release		→	→	→	→	→						
Review feedback						→						
RoI Support release		→	→	→	→	→						
Review TA commitments						→						
RoI + TA briefings		→	→	→	→	→						
RBI/MBSF RFP release		→	→	→	→	→	→	→	→	→	→	→
Review									→	→	→	→
Contract neg.									→	→	→	→
DEP reviews									→	→	→	→
<b>TAs</b>												
TA DEP preparation		→	→	→	→	→	→	→	→	→	→	→
<b>CFH</b>												
UFB1 continuation	→	→	→	→	→	→	→	→	→	→	→	→
UFB2 RFP prep/release			→	→	→	→	→	→	→	→	→	→
Review								→	→	→	→	→
Contract neg.									→	→	→	→

**Annex 2: Registration of Interest – Supply**

**Annex 3: Registration of Interest – Support**

**Annex 4: Digital Enablement Planning Guide**

**Annex 5: Regulatory Impact Statement – Telecommunications Development Levy Extension**