



Submission in response to  
the Australian Government's  
Mobile Black Spot Program

**Round 5A Discussion  
paper**

Public Version

June 2020

## EXECUTIVE SUMMARY

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1. Optus welcomes the opportunity to provide information in response to the Federal Government's Mobile Black Spot Program (MBSP) Round 5A Discussion paper.
2. In regional Australia, mobile coverage and connectivity is critical for the effective running of businesses, connecting people with their family and friends and for public safety and emergency responses.
3. Optus has a long commitment to regional Australia, which is evidenced by the more than \$1 Billion we have invested in recent years to bring choice, improved coverage and world class voice and data services to regional communities.
4. Optus has been an active participant in the MBSP, obtaining funding in several rounds for infrastructure builds that have complemented our own investments in regional and remote areas of Australia.
5. To date, our mobile black spot sites have generated more than 11.3 million calls with over 1.4 million individual users taking advantage of this new coverage in some of the most remote parts of Australia.
6. As part of the program, Optus is currently co-funding and building a total of 258 mobile sites in black spots across the country, many of which are in very remote parts of Australia. At the conclusion of the projects, Optus will have covered over
  - 55,000 residences with new in-building services
  - 5,100km of enhanced in-car and rail coverage.
7. We note that in the most recent round of funding, \$43.2 Million of the available \$80 Million was unallocated. This supports Optus' view that the current MBSP model has run its course. Reform of the program is essential since it is becoming more difficult to justify investment in ever more remote areas. The reality is that even with capital subsidy, there are significant costs to carriers to operate and maintain networks in rural and regional areas where population is sparse, and revenues are limited.
8. However, we recognise that communities continue to raise concerns about limited local coverage and look for new network investment to improve connectivity and enhance public safety.
9. We recommend that three key changes are made to the scheme to support future investment opportunities:
  - (a) Funding should prioritise shared infrastructure models such as the Victorian Regional Rail Connectivity project, which will better allow for multi-carrier asset sharing and co-building.
  - (b) The coverage assessment criteria should be amended to better reflect the practical on-the-ground circumstances and not theoretical coverage claims; and
  - (c) The scheme should specify geographical locations that will be deemed eligible for funding and adopt an EOI process to help facilitate carrier collaboration.
10. Appropriate time should be allowed to develop the new arrangements and enable carriers to explore sharing opportunities before a new round of funding is launched.

11. Optus also recommends that future Federal funding supports 5G solutions, since investment in 5G technology in regional Australia is likely to be more challenging than for legacy technologies given the propagation characteristics of 5G and its likely use-cases.

## COVERAGE BENEFITS FOR NON-COMMERCIAL REGIONAL AND REMOTE AREAS

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12. The Federal Government committed \$380 Million to improve and extend mobile phone coverage in regional and remote Australia through the MBSP that is co-funded by state governments, local governments, Optus, Telstra, Vodafone and Field Solutions Group.
13. This level of investment in regional and remote telecommunications has helped deliver sustainable competition and made significant improvements in the breadth and depth of coverage for regional communities. It has brought much needed coverage to ensure communities and businesses in regional Australia have access to the same state of the art mobile services as those in metropolitan areas.
14. Optus' participation in the MBSP builds on and complements our existing and significant network expansion programs in regional Australia. In recent years Optus has invested over \$1 Billion to bring improved coverage and choice to regional Australian communities.

### Question 1

Are there any comments on the coverage areas proposed to be targeted?

15. Even with capital subsidy, there are considerable costs to carriers of constructing new infrastructure in remote areas where population is sparse.
16. Optus recommends the Government clearly identifies an exhaustive list of areas for new coverage eligible under future MBSP rounds that meet program criteria i.e. a list of eligible locations as opposed to leaving it open ended. For example, the scheme should specify requirements such as:
  - The Illawarra Rail Line between Corrimal and Helensburgh
  - Stuart Highway between X town and Y Town
  - Village of "Willow Tree", NSW.
17. Funding sites along transport corridors will support safety of highways and enhance visitor experience at key tourist destinations and on rail lines for commuters.
18. Whilst funding new coverage in areas of high natural disaster has merit, it should be understood that during a natural disaster, there is no guarantee mobile sites will remain operational due to fire damage or loss of mains power.

## Question 2

Are there any comments on the types of proposals that would be eligible for funding, including the required coverage outcomes?

19. The decreasing success rate of bids in each program round reflects on the coverage eligibility criteria.
20. Optus has offered over \$(CinC) investment as part of the program, but only \$75 Million of our proposed capital contribution has been approved under the program's guidelines.
21. We have lobbied for change to the coverage criteria for all rounds of the program as this remains the single largest impediment for allocation of sites.
22. Public coverage maps show the general extent of mobile coverage when a device is used outdoors or with an external antenna. It should not be used as a means of assessment, since we note that overwhelming feedback during varying Regional Telecommunications Reviews clearly shows a desire for enhanced in-building and in-vehicle (including in-paddock) coverage.
23. MBSP design should use as part of its criteria "new handheld coverage at -90dBm" which is an in-building level of radio coverage and addresses the feedback from residents in regional areas.
24. Optus also recommends that MBSP is expanded to include 5G solutions, since investment in 5G technology in regional Australia is likely to be more challenging than for 4G given the propagation characteristics of the technology.

## PROMOTING COMPETITION OUTCOMES

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25. Optus has always supported measures to encourage greater sharing of infrastructure.
26. Optus believes co-build opportunities that share the prohibitive cost of deployment among multiple carriers is the best means of further extending the nation's mobile coverage footprint in areas that have symmetry and demand.
27. Policy and guideline amendments (such as clearly nominating eligible locations) can, and will, encourage the expansion of co-build projects that allow industry to deploy new sites at a cost that can be halved or reduced to one third.
28. Given the likely economic challenges associated with the funding of new sites, we strongly recommend that Government funding is prioritised for shared builds.

## Question 3

Is the RAN model an effective sharing model for Australia?

29. Optus notes that some 70 per cent of site costs relate to passive infrastructure, so sharing of passive infrastructure remains a priority. However we believe there is also benefit in shared Radio Access Network models.
30. The MBSP may be more effective if it allows for the entry of a neutral host to own infrastructure and equipment. The three carriers would have the opportunity of connecting to sites owned and run by the neutral host supplier independently.
31. Any RAN Share/Neutral Host model will require individual carriers to undertake technical Proofs of Concept and make individual commercial agreements with the supplier(s)

32. (CinC)
33. To practically implement this approach, Optus recommends that the Government should release a list of all coverage locations it wants in future rounds rather than having an open ended process as in the current program. Government should also seek an EOI before RFP to potentially align or encourage carriers to collaborate. Alternatively, an EOI where carriers and MNIP/Neutral Host Suppliers nominate areas they would want to invest may also work.

#### Question 4

What other design options could be considered that provide multi-provider outcomes?

#### **The Victorian Regional Rail Connectivity model**

34. In April 2018, the Victorian Government announced a project to enhance regional rail coverage and invited carriers to submit an EOI for the \$18 Million project.
35. Optus invited Telstra and VHA to collaborate on a response during which time we worked through competition law challenges.
36. As an industry, we worked with the Victorian Government to allocate the \$18 Million towards deployment of carrier grade repeater solutions on its rail fleet.
37. To supplement the on-board repeater solutions, the carriers constructed 35 new mobile towers within the rail corridors.
38. Critical to the success of this program, and the ability to work more collaboratively and within competition laws, was the very clear coverage objectives provided (5 Regional Rail Lines) that all responders understood upfront.
39. The co-build arrangements from this program provide a model that could be adopted for the blackspots programs. Key to this approach was the EOI process including specified sites, which should be adopted for the Federal program.

#### **The New Zealand model**

40. The New Zealand Government's Mobile Black Spots Fund (MBSF) has been established to expand mobile service to support safety of state highways and enhance visitor experience at key tourist destinations.
41. In this model, all mobile network operators will share radio access network equipment and one set of antennae on each facility built by the Rural Connectivity Group - an independent entity established by New Zealand's three carriers in partnership.
42. With all three New Zealand carrier network operators accessing the MBSF sites, all mobile customers will benefit from improved coverage regardless of their chosen provider.
43. Optus notes that unlike the NZ model, an Australian version would not necessarily require a separate neutral host entity to be set up by the carriers.

## **CAPITAL COSTS OF PROPOSED SOLUTIONS**

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### Question 5

Are there any comments on the funding cap for Round 5A and eligible costs?

44. Funding gaps need to be reviewed in areas of sparse permanent population and limited transient population. This includes any highway extension outside the carriers' existing network footprint.
45. Funding caps need to be reviewed for solutions that require high cost power solutions that may only be determined during site feasibility i.e. Government should set aside an amount of capital to "Top Up" some sites.
46. Operational expense, such as power (or maintenance for solar for example) should also be considered for sites awarded in areas of sparse population or low transient population.
47. The Government should consider re-introduction of the 10% mobilisation payment and make the AAA 30% to allow carriers to better handle costs of sites that fail during the feasibility stage (Stage 1).

## SOLUTIONS OFFERING SERVICES FROM AT LEAST 2 MOBILE NETWORK OPERATORS

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48. It should not be taken as a given that if government awards a contract to one carrier for a site, that the others would automatically seek co-location. Other carriers would also likely require a similar level of funding to utilise the new site.
49. It also should be noted that not every MBSP awarded site will fit within a carrier's current or proposed network, or necessarily align to its own horizon plans, meaning they fall outside current and future capital plans.
50. Listing eligible locations and offering an EOI to market, would better allow Government to see where multiple carriers/MNIPs have an interest in applying for MBSP Funding. This would make it easier for carriers to discuss potential opportunities to jointly bid when they can openly discuss clearly identified eligible locations.

### Question 6

Are there any comments that you wish to make in relation to eligibility to apply for funding?

51. The fundamental coverage eligibility criteria appears to be a significant hurdle and a lost opportunity to enhance mobile coverage for regional Australia.
52. This is clearly borne out in MBSP Round 5 where \$43.2 Million of the available \$80 Million was not allocated.
53. Optus submitted a comprehensive bid, but due to coverage guidelines that do not reflect actual on the ground coverage, we were awarded significantly less sites than proposed.

## STATE GOVERNMENT AND 3<sup>RD</sup> PARTY CO-CONTRIBUTIONS

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54. State and Territory governments have used better coverage eligibility metrics to launch their own black spots programs.
55. At the conclusion of Round 2, Optus offered to work directly on non-awarded, state backed sites, with the Victorian, South Australian and NSW governments. Subsequently, the NSW and VIC Governments have since then set up their own programs (VMP 2.1, 3, NSW Direct).
56. Optus has directly engaged and been awarded funding with SA (complete) VIC, WA, NSW and TAS on their state-based programs.

#### Question 7

Are there any comments that you wish to make regarding ways the program could assist potential state government and third party co-contributors?

57. The Victorian Government ran a separate regional rail program that resulted in an industry collaborated project. The Victorian Regional Rail connectivity project was unique but demonstrated the cost of regional investment can be effectively lowered through co-investment and site co-building within ACCC regulations. This would incentivise market investment and reduce gaps in service delivery more quickly. Notably, the Victorian Government designed new coverage assessment methodology for this project based on consultation with industry.
58. This state-based project should be considered by the Federal Government for delivery of a more effective operating model for its MBSP that would encourage greater co-building and collaboration involving carriers in areas where they are keen to invest.
59. State Governments invest significant time prioritising locations based on many factors, including feedback from Emergency Services. This locally generated information is critical in ensuring sites are planned in areas that are backed with demand.

## LENGTH OF SERVICES PROVIDED AFTER ASSET COMPLETION

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#### Question 8

Are there any comments regarding the need for a shorter minimum operational period, particularly in remote and very remote areas?

60. Optus agrees with the current 10-year minimum period of service operation but suggests that flexibility should be maintained for technology upgrades over that time period, assuming the same connectivity and coverage objectives are met. Optus contends that no solution should be reliant on 3G technology in an MNO response.

### Question 9

Are there any comments on the proposed equivalency requirement and 4G reference power levels for handheld and external antenna coverage?

61. Optus calls on the Government to amend its coverage assessment metrics. The major flaw of the current program is the requirement for in-building coverage, when government actually assesses bid coverage against the carriers' public coverage maps (which show outdoor coverage only).
62. Optus does not recommend the use of External Antenna for any assessment or eligibility criteria. For further information see Proposed Assessment Criteria (p9).

## OTHER DESIGN PRINCIPLES

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63. The ferocity and widespread geographical reach of the 2019-20 Australian bushfires had devastating impacts on rural communities.
64. Damage and loss of power to telecommunications infrastructure, combined with existing mobile black spots left people stranded and out of contact. This may have led to important public safety messaging not reaching people who were trying to evacuate.
65. The increasing regularity of extreme weather events in Australia - such as flood, cyclone, storm and bushfire - illustrates the importance of improving communications coverage and resilience in regional areas.
66. Optus believes the Government must extend network resilience measures to existing program sites in disaster-prone areas to ensure at least 12 hours of auxiliary power through larger batteries and the utilisation of solar power to operate independently of the power grid.

### Question 10

What criteria should be used to identify key sites where independent power systems or redundant backhaul could be funded?

67. Optus recommends that funding is prioritised to:
  - (a) Existing sites in known high risk areas, rather than new sites;
  - (b) Exchanges and hub sites where loss of service would impact a number of downstream towers; and
  - (c) Sites that are subject to high mobile and data traffic use.
68. Optus believes the improved network resilience measures proposed for disaster-prone areas in Round 5A - including bigger batteries and solar power sources that can operate independently of mains power - need to be expanded to sites in disaster prone areas that were not previously funded by the program.
69. While priority is being given to bushfire prone areas, the Government should also consider areas prone to other natural disaster events such as cyclones and flooding.
70. It is worth noting that in February 2020, the carriers had to quickly pivot from dealing with bushfires to manage further issues to networks arising from the impact of wild storms and floods in Sydney, other parts of NSW and around the country.



## Question 11

Are there any comments regarding the requirement for at least 12 hours of auxiliary backup power for small cells?

71. Optus welcomes the improved network resilience measures proposed for disaster-prone areas in Round 5A.
72. This includes bigger batteries and solar power sources that can operate independently of mains power. These measures also need to be expanded to existing sites in disaster prone areas that were not previously funded by the program.
73. Throughout the 2019-20 bushfire crisis, Optus' priority was to restore network infrastructure required to support service capability that was lost as quickly as possible once it was safe to do so.
74. The predominant issue we faced related to loss of power supply resulting from mains power outages. Whilst mobile sites typically have a battery back-up, these can only accommodate a modest outage of around four to six hours.
75. For extended outages we deploy generators at the site. However, these in turn may need to be topped up with fuel if the power outage extends over several days. This can cause other challenges if there is continued fire danger in the area.
76. Larger batteries with an extended operating life, or a solar power source, that operates independently of the grid, will help keep communities connected in future bushfire emergencies.
77. These solutions can be costly and will require additional lease areas. Consideration of these increased costs, including operational expense, should be factored into the program.

## PROPOSED ASSESSMENT CRITERIA

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78. Improving connectivity in rural and regional areas can be better supported by the Federal Government making improvements to its processes and systems to encourage further extension of market investment into more difficult areas, including improving infill coverage.
79. Analysis of submissions to Regional Telecommunications reviews in recent years, identifies two key take outs:
  - Building depth of coverage within carriers' existing coverage footprint i.e. increased in-building and in-vehicle coverage.
  - Beyond Farm gate solutions where an alternate solution for mobile access (and may not be carrier operated) to maximise Ag Tech on larger properties on the edge of a carrier's network.
80. On the first point, this is effectively converting "outdoor" coverage, as shown on websites, to "in-building" levels, consistent with our previous comments on coverage.

## Question 12

Do you have any comments on the proposed assessment criteria?

81. As previously indicated, we are concerned the options for Round 5A will use the same coverage metrics as every previous round, with the result that they will not deliver the hoped-for improvements.
82. Each MNO's claims for new in-building coverage will be tested during Round 5A. But the department's current methodology means that bid coverage will be assessed against the carriers' public coverage maps.
83. Public coverage maps represent the general extent of a mobile network when using a device outdoors or with an external antenna. So in other words, like-for-like coverage is not being considered during the department's assessment.
84. The program's flawed coverage guidelines, which use public coverage maps to determine 'eligibility' and 'new coverage', has had significant impacts on site selection throughout every program round. As a result, many attractive sites, submitted by Optus in its program applications, have not proceeded.
85. (CinC)
86. A new coverage assessment methodology - that simply requires carriers to supply the comparative handheld (-90dBm) of the existing network - could easily be introduced without issue. This would deliver on overall improvement of the program.
87. This could be achieved through amendments to the current guidelines relating to coverage eligibility in the first instance. Optus does not support the use of public coverage maps as a means of eligibility when it comes to designing to far higher coverage levels as required in the guidelines.

**[ENDS]**