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Submission to National Regional Roads Australia Mobile Program Consultation Paper

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About Waveconn

Waveconn is an Australian developer, owner, and neutral host operator of digital infrastructure, and one of the three major mobile network infrastructure providers (MNIPs) in the country. Established in 2022 following the Ontario Municipal Employees' Retirement System's (OMERS) acquisitions of TPG's tower and rooftop portfolio and Stilmark Holdings Pty Ltd (Stilmark), Waveconn owns approximately 1,400 tower and rooftop sites nationwide, with additional sites under active development.

As an MNIP, Waveconn's core business involves deploying and managing digital infrastructure for a diverse range of clients, including all three national mobile network operators (MNOs), Government radio networks (GRNs), and wireless internet service providers (WISPs).

While our existing infrastructure is predominantly located in metropolitan areas, we are actively supporting our customers' plans to expand coverage in regional and remote parts of Australia. We are also focused on delivering wireless infrastructure to new residential developments, ensuring digital connectivity keeps pace with demand.

Waveconn operates independently, with no direct or in MNO ownership or funding. This autonomy allows us to provide access to all our customers without any incentives aligning us to a specific MNO. With one of our subsidiaries holding a carrier licence, Waveconn is classified as a carrier company group under the Telecommunications Act 1997 (Cth).

1. Introduction

Waveconn welcomes the opportunity to respond to the National Regional Roads Australia Mobile Program (RRAMP) Consultation Paper.

We appreciate the Australian Government's initiative to improve multi-carrier mobile coverage on highways and major roads in regional and remote Australia. Our submission draws on our experience working closely with national Mobile Network Operators (MNOs) and deploying wireless infrastructure across Australia.

Emerging Technologies and Market Dynamics

Terrestrial wireless networks and Low Earth Orbit (LEO) satellite services each have distinct roles in Australia's connectivity landscape. While terrestrial networks deliver superior speeds, lower latency, and support comprehensive digital services in areas with sufficient population density, LEO satellites are emerging as a practical solution for basic connectivity in extremely remote areas where terrestrial infrastructure cannot be economically justified, even with government support. The optimal connectivity strategy recognises this complementary relationship rather than viewing these technologies as competing alternatives.

The economic viability of terrestrial wireless networks relies on a sufficient population density and contiguous expansion from existing coverage areas to justify the investment and ongoing operational costs, even with government funding. The commercial reality is that extending terrestrial coverage to isolated pockets on remote and regional roads offers minimal return on investment for MNOs due to limited subscriber growth opportunities and increased operational complexities.

LEO satellite technology is capable of delivering basic voice and text messaging services in areas with low population density or non-contiguous coverage pockets that are uneconomical for terrestrial wireless networks. LEO satellite technology may therefore provide a cost-effective solution for fundamental communication needs in these remote areas, complementing universal mobile access objectives without requiring extensive terrestrial infrastructure where it is not economically sustainable.

Re-evaluating Government Investment Approach

In light of these market developments, we recommend the Government consider five strategic shifts:

1. **Reallocation of funding priorities**: A portion of funding currently allocated to RRAMP and the Mobile Black Spots Program (MBSP) should be redirected toward programs such as the Peri-Urban Mobile Program (PUMP) that target growth areas with higher population densities and economic activity. These peri-urban areas often suffer from sub-optimal digital connectivity despite their proximity to metropolitan centres and represent an efficient use of Government funds to achieve meaningful digital inclusion and public safety outcomes, consistent with Government policy.
2. **Market led engagement**: RRAMP funding should be prioritised to support terrestrial wireless infrastructure deployment in locations nominated by market participants including MNIPs and MNOs. This approach would strike a balance between Government policy objectives and commercial incentives.

3. **Stronger emphasis on multiple-carrier presence including active network sharing**: Investment in regional infrastructure should prioritise the presence of multiple MNOs, including MNOs participating in active network sharing arrangements, such as the MOCN agreement between Optus and TPG (MOCN Agreement). The MOCN Agreement should be recognised as delivering genuine multi-carrier coverage through active sharing, increasing the efficiency of public funds and promoting increased competition. Additionally, passive sharing solutions with three MNOs also provide substantial public benefits through infrastructure cost sharing and enhanced service competition. A tiered funding approach should recognise both models - with active sharing arrangements like the MOCN Agreement receiving the highest support for their network efficiency gains, while three-carrier passive sharing sites also receive strong support for delivering competitive multi-carrier outcomes.

4. **Equal treatment of infrastructure owners**: The Government should provide equivalent funding terms for both MNIPs and MNOs to ensure optimal program outcomes. The current proposal's exclusion of MNIPs from operational funding support creates significant challenges in that it:

    - Disadvantages the neutral host model that has proven effective in delivering multi-carrier coverage across Australia
    - May inadvertently encourage less efficient ownership structures in locations where shared infrastructure would deliver better outcomes
    - Overlooks MNIPs' track record of successfully operating multi-carrier infrastructure in challenging regional locations

    This is a critical design consideration because RRAMP sites typically require ongoing operational support to remain viable, regardless of ownership structure. Providing operational funding based on multi-carrier outcomes rather than ownership type would encourage the most efficient infrastructure solutions and increase program participation, ultimately delivering better coverage outcomes for regional Australians.

5. **Efficient administration**: The RRAMP should be administered at the Federal level of Government. This approach will accelerate the award and implementation of terrestrial wireless infrastructure under the RRAMP by materially reducing the number of stakeholders to manage and allow respondents to put forward a holistic national proposal.

2. Responses to Threshold Questions

a) Need for terrestrial mobile coverage on regional and remote highways and major roads

While terrestrial wireless coverage remains the gold standard for comprehensive data services, the emergence of LEO satellite technologies is creating a viable alternative for basic communications. Working closely with MNIPs and MNOs, the Government should assess where terrestrial wireless coverage is economically viable and where satellite services may provide acceptable minimum service levels, particularly for emergency communications.

The primary focus for RRAMP should be on creating contiguous expansions of existing terrestrial wireless networks where they can deliver the greatest social and economic benefit, rather than isolated coverage pockets that service a small number of transient users.

b) Role of LEO satellites and direct-to-device (D2D) technology

LEO satellite and D2D technology may serve as complementary solutions to terrestrial wireless networks. While offering lower data rates and higher latency than terrestrial wireless networks, these technologies will provide essential baseline connectivity in areas where terrestrial wireless coverage is not economically feasible.

The changing technology landscape necessitates an assessment of Government investment strategies, focusing terrestrial wireless infrastructure funding on areas where population density, contiguous network expansion and economic activity can support the initial capital investment and ongoing operational costs.

While LEO satellite and D2D technology will continue to improve in performance and cost-effectiveness, they will remain best suited for basic connectivity in less densely populated areas for the foreseeable future. The Government should regularly review the terrestrial/satellite boundary as technology evolves, ensuring public investment remains targeted at the most appropriate solution for each location over time.

c) Commercial outcomes for MNOs

Locations funded under the RRAMP that provide contiguous terrestrial wireless network coverage expansion and align with MNO commercial incentives, will maximise MNO participation.

The Government should recognise that deploying isolated coverage pockets on regional and remote roads will likely require 100% funding of both capital and operational costs to secure any interest from MNOs.

d) Prioritising multiple MNO presence and active sharing

The presence of multiple MNOS, including MNOs participating in active network sharing arrangements such as the MOCN Agreement should be incentivised through preferential funding models.

3. Responses to Questions on Infrastructure Upgrades

a) Incentives for infrastructure sharing

To effectively incentivise infrastructure sharing, eligible costs should include:

1. Backhaul capacity upgrades
2. Structural capacity upgrades
3. Power grid connectivity upgrades
4. Compound space expansion

b) Additional activities supporting active sharing

The MOCN Agreement represents a significant market-led active sharing solution already delivering services to customers. The Government should ensure RRAMP sites delivered under this agreement are fully eligible for funding, recognising this as an efficient use of public resources.

c) Eligibility of MOCN Agreement proposals

Proposals leveraging the MOCN Agreement should be considered eligible for active sharing incentives. This existing active sharing solution meets the Government 's objectives of efficient capital utilisation and demonstrates market willingness to collaborate when economic incentives align with policy goals.

d) Market or technical challenges

Key challenges impacting new mobile coverage infrastructure include:

1. Power supply limitations in rural areas, with grid connectivity often slow and costly to establish
2. Difficulties accessing Government-owned or managed land
3. Prohibitive backhaul costs in regional and remote areas
4. Limited commercial case, particularly for non-contiguous coverage expansions

These challenges highlight why traditional grant programs often struggle to generate sufficient industry participation in regional areas without addressing both capital and long-term operational costs.

4. Responses to Questions on Multi-carrier Coverage

a) Facilitating cooperation between MNOs

To achieve the Government's objective of expanding multi-carrier coverage, multi-carrier sites should be eligible for greater funding. The MOCN Agreement should be recognised an approach that substantially improves capital and operational efficiency, with proportionally higher funding allocated to sites deployed under active sharing arrangements.

b) Alternatives for demonstrating multi-carrier outcomes

Letters of intent from MNOs should be sufficient to demonstrate multi-carrier commitments, reducing administrative burden while ensuring program objectives are met.

c) Market or technical issues impacting multi-carrier outcomes

Different sharing models present varying levels of complexity. While passive multi-carrier solutions through colocation are well-established with minimal barriers, active sharing arrangements such as the MOCN Agreement involve substantial upfront investment and coordination. The successful implementation of the MOCN Agreement demonstrates that these challenges can be addressed when appropriate incentives exist. We encourage the Government to value both passive and active sharing approaches, with funding levels that recognise the different efficiency gains each model provides.

5. Responses to Questions on Eligible Roads

a) Roads to consider for eligibility

The Government should prioritise roads that have been nominated by the applicants and provide for contiguous expansion of existing terrestrial wireless coverage. This market-led approach leverages MNIP and MNO commercial analysis to identify locations with the highest potential for sustainable coverage expansion, naturally targeting areas with the greatest need and user benefit. This alignment between commercial viability and public benefit ensures better value for government investment while avoiding stranded assets in locations with minimal usage.

b) Roads not viable for investment

Deploying terrestrial wireless coverage that results in isolated coverage pockets is unlikely to attract MNO participation, even with substantial funding. The opportunity cost for MNOs to allocate resources to such deployments makes these investments unattractive.

c) Non-listed road proposals

Applicants should be permitted to propose solutions on roads not included on the initial eligibility list, provided they can demonstrate outcomes in terms of population served, traffic volumes, or safety benefits.

6. Responses to Questions on Strategic Locations

a) Additional Strategic Locations to consider

Additional locations that should be considered include:

1. MNO priority locations that extend new contiguous coverage to regional roads
2. Infill for major roads between capital cities
3. Known accident black spots

b) Additional indicators for identifying Strategic Locations

Proximity to existing terrestrial wireless coverage should be a critical consideration. The gradual, contiguous expansion of existing coverage would generate significantly more MNO participation than isolated coverage pockets, creating a sustainable approach to improving regional connectivity.

7. Responses to Questions on Grant Funding

a) Funding models' effectiveness

Given the challenging economics of regional coverage deployment, we recommend:

1. Capital funding:
    - 100% capital cost funding for sites with three MNOs (whether passive or active sharing, including under the MOCN Agreement)i
    - 85% funding for sites with two MNOs (whether passive or active sharing, including under the MOCN Agreement)
    - 50% funding for sites with a single MNO, on the condition that the infrastructure is sharable for future colocation from other MNOs.
2. Operational funding:
    - Equal treatment for funding of eligible operational costs over ten years should be available to both MNIPs and MNOs providing multi-carrier infrastructure.
    - The current proposal limits operational cost support to MNOs only, which creates implementation challenges such as:
        - It may discourage use of the neutral host model that has efficiently delivered multi-carrier outcomes across Australia
        - It doesn't account for MNIPs facing the same economic challenges as MNOs in regional deployments
        - It could reduce the diversity of solutions available to meet the program's multi-carrier objectives
        - It may limit participation from proven infrastructure providers
    - We recommend the Government consider providing operational cost support based on infrastructure outcomes (multi-carrier coverage) rather than ownership structure. This approach would align funding with program objectives while encouraging the most efficient infrastructure solutions for each location.

b) Risks or unintended outcomes

The primary risk with current grant approaches is misalignment between Government coverage objectives and industry commercial imperatives, resulting in limited program participation. By considering the role that LEO satellite technology can play in connecting regional Australian, addressing both capital and operational costs for all infrastructure owners (MNOs and MNIPs alike), and incentivising the presence of multiple MNOs, including MNOs participating in active network sharing arrangements, the Government will likely achieve broader participation and better program outcomes.

8. Responses to Questions on Operating Requirements

a) Minimum resilience requirements

Enhanced backup power for macro sites, with supplementary funding available for extended duration lithium-based battery energy storage solutions (BESS) with Virtual Power Plant (VPP) capabilities. Consistent with the approach recently taken in MBSP Round 8, sites choosing to implement extended backup power with grid support functionality could access additional funding for these incremental costs. This maintains flexibility while encouraging resilient infrastructure that provides broader community benefits. Such a configuration will provide an efficient model for multi-day power backup, while contributing to grid stability and Australia's energy transition when connected to the grid.

b) Additional operating requirements

Additional operating requirements should include performance reporting that aligns with existing industry norms to demonstrate ongoing compliance with coverage obligations.

9. Conclusion

Waveconn appreciates the opportunity to provide feedback on the National Regional Roads Australia Mobile Program consultation paper. As a neutral host infrastructure provider with extensive experience in the telecommunications sector, we believe our insights contribute meaningfully to the evolution of Australia's connectivity policies.

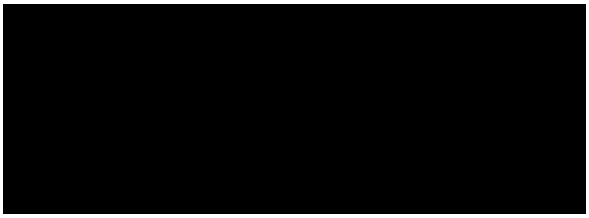
We urge the Government to consider five fundamental shifts in approach:

1. **Recognise the impact of emerging technologies**: LEO satellite and D2D technology may facilitate the delivery of a minimum level of digital connectivity in regional locations that do not support the capital and operational investment required for terrestrial wireless networks.
2. **Reallocate funding priorities**: Shift a portion of funding from RRAMP and MBSP toward programs like PUMP that target peri-urban areas with suboptimal connectivity and stronger economic fundamentals.
3. **Market led engagement**: Prioritise RRAMP funding to support terrestrial wireless infrastructure at locations nominated by MNIPs and MNOs.
4. **Recognise the MOCN Agreement as an active sharing solution**: Eligibility of sites that full under the MOCN Agreement should be considered as two MNO active sharing sites and be eligible for two MNO funding levels.
5. **Equal treatment of MNIPs**: Provide operational cost support to all infrastructure owners, both MNIPs and MNOs, recognising that the economic challenges of regional deployments affect infrastructure owners equally.

We respectfully emphasise that addressing the operational funding eligibility for all infrastructure providers is essential for program success. Equal treatment of MNIPs and MNOs will encourage efficient infrastructure deployment and ensure the broadest possible participation in delivering multi-carrier coverage to regional Australia. This approach aligns with the Government's objectives while leveraging the strengths of different infrastructure models.

With these five adjustments, the Government can achieve more effective and sustainable improvements to Australia's digital connectivity while maximising the return on public investment. Waveconn stands ready to support these initiatives through our neutral host infrastructure model and extensive experience in telecommunications infrastructure deployment.

Sincerely



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