Proposal for Mobile Black Spot Program Round 8

Project Title:

Enhancing Mobile Coverage for Kellevie, Nugent, and Wielangta Road

Proponent:

Sorell Council

Contact Details:

- Name: Robert Higgins
- Position: General Manager
- Phone:03 6269 0000
- Email: robert.higgins@sorell.tas.gov.au

Executive Summary

This proposal aims to address critical mobile black spots in Kellevie, Nugent, and Wielangta Road in the Sorell LGA, Tasmania.

These areas are underserved, posing risks to community safety, tourism, and emergency response.

Enhanced coverage will support residents, businesses, and emergency services, particularly along Wielangta Road, which serves as the only feasible alternate direct route between Hobart and the East Coast during natural disasters – as evidenced by the significant impact to communities and businesses caused by the 2021 closure of the Tasman Highway at Paradise Gorge.

Location and Context

- **Proposed Location**: Kellevie/Wielangta Road, Tasmania (possibly Mount Reuben, Mount Walter or Middle Peak)
- **Coverage Targets**:
    - Communities of Kellevie and Nugent
    - Wielangta Road (alternate emergency route)
- **Current Issues**:
    - Lack of reliable mobile coverage
    - Limited communication in emergencies such as bushfires and floods

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Project Objectives

1. Improve mobile coverage in underserved communities.
2. Enhance safety and connectivity for residents and visitors.
3. Support emergency services and disaster response along Wielangta Road.

Need for the Project

The lack of mobile coverage in the proposed area impacts:

- **Community Safety**: Limited communication during emergencies.
- **Emergency Services**: Wielangta Road is critical for evacuations and response.
- **Economic Development**: Hinders tourism and local businesses.

Technical Feasibility

- Proposed infrastructure: New mobile base station(s) or upgrades to existing facilities.
- Collaboration with: Optus, Telstra, TPG Telecom Ltd, Field Solutions Group, OneWiFi and local authorities.

Support for the Project

The proposal is backed by:

- Sorell Council
- Tasmanian State Emergency Services
- Sorell Business Association

Outcomes and Benefits

- **Safety**: Reliable mobile communication during emergencies.
- **Connectivity**: Improved services for residents, visitors, and businesses.
- **Economic Growth**: Support for tourism and local enterprises.

Funding and Partnership

- **Estimated Costs**: $500,000 - $1,500,000 (dependant on Site acquisition, infrastructure, equipment, labour, ongoing maintenance)
- **Funding Request**: $500,000 - $1,500,000 through MBSP Round 8
- **Partner Contributions**: [Details of co-funding or support from stakeholders]

Conclusion

This proposal addresses a critical need for mobile connectivity in the Kellevie/Wielangta Road area, improving safety, economic opportunities, and community resilience. We urge the Australian Government to support this project under the Mobile Black Spot Program Round 8.

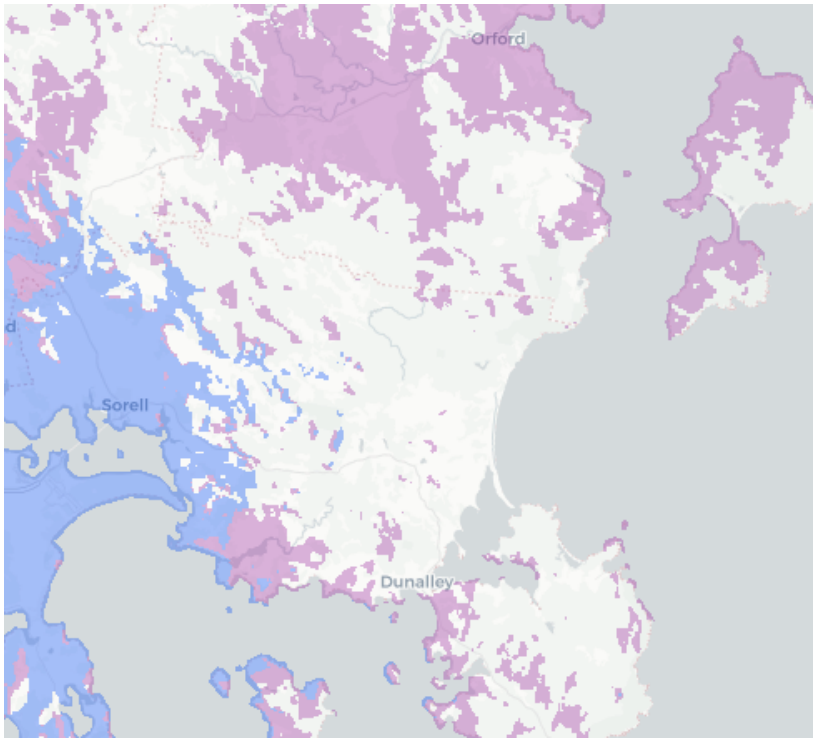
Attachments:

- Coverage Maps
- Letters of Support
- Budget Estimates
- Technical Specifications

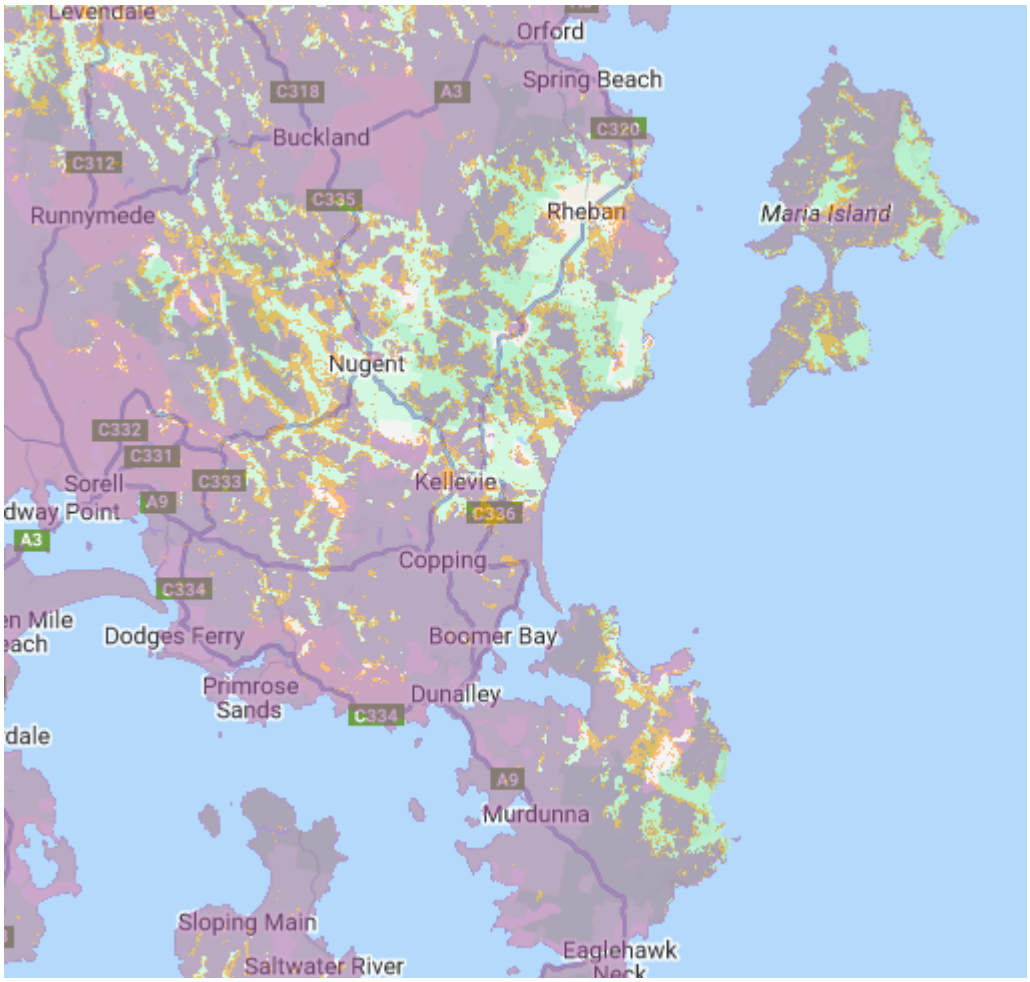
Coverage Maps

Telstra Coverage Map

Vodaphone Coverage Map



Optus Coverage Map



Letters of Support

SORELL COUNCIL

Community Coast Country

20 January 2025

Sorell Council
47 Cole Street, Sorell TAS 7172
PO Box 126, Sorell TAS 7172
03 6269 0000
sorell@sorell.tas.gov.au

To Whom It May Concern,

RE: Letter of Support for Mobile Black Spot Program Proposal for Kellevie, Nugent, and Wielangta Road

On behalf of Sorell Council, I am writing to express our full support for the proposal to address mobile black spots in the communities of Kellevie, Nugent, and along Wielangta Road in the Sorell Local Government Area (LGA). This project aims to enhance mobile coverage and significantly improve community safety, emergency response, and overall connectivity in the region.

Currently, residents and visitors in these areas experience unreliable mobile services, which presents a serious challenge, particularly in the event of emergencies such as bushfires, floods, or other natural disasters. Wielangta Road, which serves as the only alternate route between Hobart and the East Coast, is critical during emergencies, and reliable mobile coverage is essential for both residents and emergency services.

Sorell Council strongly believes that this project will not only improve safety but also support economic development by enhancing communication for businesses and visitors in this vital part of our region. We are committed to working with all stakeholders to ensure the successful implementation of this project and support its objectives.

We wholeheartedly endorse this proposal and request that it be given full consideration for funding under the Mobile Black Spot Program Round 8.

Yours sincerely,

Robert Higgins
General Manager

Tasmanian Government

Department of Police, Fire and Emergency Management

STATE EMERGENCY SERVICE
GPO Box 1290 HOBART TAS 7001
Phone (03) 6173 2700
Email ses@ses.tas.gov.au Web www.ses.tas.gov.au

SES
TAS STATE EMERGENCY SERVICE

15th January 2025

To whom it may concern,

Re: Letter of Support for Mobile Black Spot Program Proposal for Kellevie, Nugent, and Wielangta Road

I am writing to express Tasmania SES's strong support for the proposal to enhance mobile coverage for the Kellevie, Nugent, and Wielangta Road areas. As emergency services providers, we recognize the critical importance of reliable mobile communication in responding to emergencies, particularly in rural and remote regions such as this.

Wielangta Road serves as an essential alternate route between Hobart and the East Coast, especially during natural disasters, when it is necessary to evacuate or provide immediate aid. However, the current mobile coverage black spots in the area hinder our ability to respond effectively and communicate with affected communities.

The proposed improvements to mobile coverage would significantly enhance our emergency response capabilities, ensuring that residents and visitors can access emergency services when needed. It would also help to ensure the safety of those traveling through the region, improving the resilience of the community and emergency response teams.

We fully support this project and encourage its inclusion in the Mobile Black Spot Program Round 8 to address this critical issue.

Yours sincerely,

Kim Fazackerley
Regional Manager South
State Emergency Service – Southern Region

Sorell Business Association
PO Box 232, Sorell TAS 7172
admin@sorellbusinessassociation.com.au

8 January 2025

To Whom It May Concern,

Re: Letter of Support for Mobile Black Spot Program Proposal for Kellevie, Nugent, and Wielangta Road

On behalf of Sorell Business Association, I am writing to offer our full support for the proposal to improve mobile coverage for the communities of Kellevie, Nugent, and the surrounding areas of Wielangta Road. As a community-focused organization, we are deeply aware of the challenges posed by the current lack of mobile coverage in these areas.

Our members, who live and work in the Kellevie and Nugent areas, have experienced significant difficulties with mobile connectivity, especially during emergencies. The lack of coverage leaves them unable to communicate effectively with loved ones or access emergency services when needed. Additionally, it places a strain on local businesses that rely on mobile communication for day-to-day operations.

The proposed mobile coverage improvements will provide vital support to the local community, improving safety, communication, and overall well-being. We strongly believe that this project aligns with our organization's goals of enhancing the quality of life for those living in rural and remote communities.

We wholeheartedly support this project and request that it be considered for funding under the Mobile Black Spot Program Round 8.

Sincerely,

Michael Larkins
President
Sorell Business Association

Budget Estimates for Mobile Base Station Installation

Below is a draft of budget estimates for a project to install a mobile base station to address mobile black spots in the Kellevie, Nugent, and Wielangta Road areas.

The estimates are based on typical costs associated with mobile infrastructure deployment and should be refined with input from relevant contractors and network providers.

These cost estimate values have been sourced from:

- Australian Government Mobile Black Spot Program (MBSP);
- Telecommunications Industry Reports (ACMA reports, industry publications, and market research reports by companies such as PwC, Deloitte, and IBISWorld);
- Construction and Telecommunications Infrastructure Costs (Public tender documents or reports from companies like Downer EDI, RCR Tomlinson, or Nokia);
- Past Project Costing Examples (tender websites like Tenders.net or AusTender, and media releases regarding infrastructure rollout); and
- Telecommunications Provider Cost Estimates (Network providers' submissions to government programs, public partnership announcements, or regulatory filings.)

Budget Estimates for Mobile Base Station Installation

Project Name: Mobile Coverage Improvement for Kellevie, Nugent, and Wielangta Road
Location: Kellevie, Nugent, Wielangta Road, Sorell LGA, Tasmania
Funding Request: $1,500,000

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1. Site Acquisition and Preparation

- **Land or Site Lease Costs**: $50,000
- **Site Access and Surveying**: $15,000
- **Site Preparation (clearing, grading, etc.)**: $30,000

Total Site Acquisition and Preparation: $95,000

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2. Infrastructure Construction

- **Tower Construction (including foundation)**: $250,000
- **Power Supply Installation (solar or grid connection)**: $50,000
- **Road Access/Upgrade (if required)**: $40,000
- **Security Fencing and Site Safety**: $20,000

Total Infrastructure Construction: $360,000

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3. Mobile Base Station Equipment

- **Base Station Equipment (antennas, transmitters, etc.)**: $300,000
- **Radio Frequency (RF) Equipment and Setup**: $80,000
- **Backup Power Systems (e.g., generators, batteries)**: $40,000
- **Installation and Configuration**: $50,000

Total Mobile Base Station Equipment: $470,000

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4. Network Connectivity

- **Backhaul (connection to the main network)**: $100,000
- **Testing and Configuration of Network Integration**: $30,000

Total Network Connectivity: $130,000

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5. Labor and Installation Costs

- **Engineering and Design Services**: $60,000
- **Installation Labor (site and equipment)**: $75,000
- **Ongoing Project Management and Oversight**: $40,000

Total Labor and Installation Costs: $175,000

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6. Maintenance and Operational Setup

- **Initial System Testing and Optimization**: $30,000
- **Initial Year of Maintenance and Monitoring**: $50,000

Total Maintenance and Operational Setup: $80,000

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7. Contingency Fund (10%)

- **Contingency for Unforeseen Costs**: $131,000

Total Contingency Fund: $131,000

Total Project Cost:

$1,411,000

Funding Request Summary

- **Total Requested from Mobile Black Spot Program**: $1,000,000
- **Contribution from State Government/Other Stakeholders**: $411,000

Draft Technical Specifications for Mobile Base Station Installation

Below is a draft example of likely technical specifications for a project to install a mobile base station to address mobile black spots in the Kellevie, Nugent, and Wielangta Road areas.

Project Name: Mobile Coverage Improvement for Kellevie, Nugent, and Wielangta Road
Location: Kellevie, Nugent, Wielangta Road, Sorell LGA, Tasmania

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1. Site Location and Design Specifications

- **Site Selection Criteria**:
    - Geographical location based on signal propagation and coverage requirements.
    - Proximity to electrical supply (grid or solar power options).
    - Access for construction and ongoing maintenance.
    - Environmental considerations (e.g., local wildlife, vegetation, and regulatory compliance with local zoning laws).
- **Tower Structure**:
    - **Tower Type**: Self-supporting lattice tower or monopole (height of 30m to 45m, depending on coverage area).
    - **Foundation Type**: Concrete base with deep foundations to withstand local wind speeds (e.g., up to 200 km/h for cyclone-prone areas).
    - **Tower Materials**: Galvanized steel or aluminium for corrosion resistance.
- **Antenna Mounting**:
    - Antenna arrays will be mounted on the top and/or sides of the tower, designed for both vertical and horizontal propagation to maximize coverage.

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2. Mobile Base Station Equipment Specifications

- **Base Station Equipment**:
    - **Multi-Technology Compatibility**: Support for 4G, and 5G (depending on network requirements).
    - **Cellular Equipment**:

        - 5G NR (New Radio) capable for futureproofing.
        - LTE Advanced (4G) support for current high-speed mobile services.
    - **Sector Antennas**:
        - Tri-sector antennas for 360-degree coverage, each sector with a 90-degree coverage range.
        - Typically, 3 to 6 antennas per site depending on coverage needs.
- **Radio Equipment**:
    - **Baseband Unit (BBU)**: Handles signal processing, connection to the backhaul network.
    - **Remote Radio Head (RRH)**: Mounted near the antennas to reduce signal loss and improve efficiency.
    - **Transmit Power**: Adjustable transmit power based on local regulations and coverage requirements.
    - **Carrier Frequency**: 700 MHz, 1800 MHz, 2100 MHz bands, and 3.5 GHz (for 5G).
- **Backhaul Connectivity**:
    - **Fibre Optic or Microwave Backhaul**: Depending on site availability and cost, either fibre-optic cables or microwave links for high-speed data transmission to the core network.
    - **Redundancy**: Secondary backhaul for failover in case of primary link failure (e.g., satellite backup in remote areas).

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3. Power Supply and Backup

- **Primary Power Source**:
    - Connection to the local electricity grid, with considerations for remote site access.
    - Solar power installation (optional, however, most likely - depending on local grid access and environmental conditions) as a supplementary power source.
- **Backup Power**:
    - Diesel or gas-powered generator with automatic start-up to provide power during grid outages.
    - Uninterruptible Power Supply (UPS) system for continuous power to critical components during short-term power failures.

- **Energy Efficiency**:
    - Low-power consumption base station equipment.
    - Solar energy optimization where applicable, with energy storage (batteries) for night operation.

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4. Environmental and Safety Considerations

- **Environmental Impact Assessment (EIA)**:
    - Completed EIA to assess potential impacts on local ecosystems, particularly in rural or natural settings.
    - Implementation of mitigation measures such as noise reduction, wildlife protection, and landscape integration.
- **Radio Frequency (RF) Safety**:
    - Compliance with Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) guidelines for RF exposure.
    - Safety barriers and signage to restrict access to areas with high RF levels during maintenance.
- **Climate Considerations**:
    - Equipment rated for operation in extreme weather conditions, such as high winds, heat, and cold.
    - Installation of weather-resistant materials for tower, antennas, and electrical components.

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5. Installation and Commissioning

- **Installation Timeline**:
    - Estimated construction time: 4 to 6 months (including site preparation, tower erection, equipment installation, and testing).
    - Testing and optimization of the base station for coverage, capacity, and backhaul integration.
- **Commissioning**:
    - Full system integration and testing for mobile service availability.
    - Signal testing with coverage mapping and performance verification to ensure required service levels are met.
- **Post-Installation Monitoring**:
    - Remote monitoring and diagnostics for system health and performance.

- Regular maintenance schedule to ensure uptime and efficiency.

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6. Operational and Maintenance Support

- **Maintenance and Support**:
  - Routine maintenance contracts, including equipment checks, software updates, and hardware replacements as necessary.
  - 24/7 support for critical issues, including emergency repairs and system failure management.
- **Maintenance Costs**:
  - Estimated annual maintenance cost: $50,000 - $75,000 for remote sites, including system monitoring and component replacements.

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7. Compliance and Regulatory Requirements

- **Regulatory Compliance**:
  - Adherence to Australian Communications and Media Authority (ACMA) licensing and frequency allocation regulations.
  - Compliance with local zoning and land use regulations, including obtaining necessary permits and approvals for tower construction and antenna installation.
- **Health and Safety**:
  - Compliance with Safe Work Australia / WorkSafe Tasmania guidelines for working with telecommunications infrastructure.
  - On-site health and safety protocols during construction and operation, including fall protection, electrical safety, and site access control.