

# Lord Howe Island Communications Network Options Paper – Summary Sheet

## Purpose

---

The purpose of the [Options Paper](#) is to provide potential options for addressing current and future communication needs of the Island. It presents the Board, stakeholders, and relevant parties with a clear and informed overview of the communications networks available for Lord Howe Island.

The following provides a brief overview of the paper's findings.

## Current State on LHI

---

Lord Howe Island lacks cellular connectivity. There is a pre-paid public Wi-Fi service available in the CBD, as well as a few of its surrounding areas.

The Island's Wi-Fi previously relied on high-latency (longer delay), limited-data NBN satellite internet until [Starlink's low-latency](#) (faster response time), unlimited data service became available.

Concerns exist about the potential discontinuation of the Island's copper network. We rely heavily on a VHF network for emergency and safety communications.

## Enhanced Communications Network Options

---

### Investing in new infrastructure

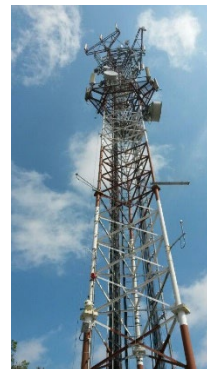
There are several potential approaches to improving communications on the Island:

#### Microcell Network (Telstra Black Spot Program) or Macrocell Network

- One microcell can be installed for free by Telstra as part of the Mobile Black Spot Program, an initiative with the Federal Government to provide coverage to all of regional Australia.
- Telstra have provided an indication of the cost for a second microcell. This additional cost would be covered by LHIB and would be eligible expenditure under the approved Regional NSW grant.
- Telstra have not been able to provide accurate data around the capacity and range of microcells.
- To achieve full Island coverage, multiple microcells (approximately up to 10) would need to be installed to achieve effective coverage.
- Installing a macrocell would provide full Island coverage but requires significant infrastructure and investment.



Example of a Satellite Small Cell mounted on the skid with a 9m structure



Left: An example Telstra microcell | Right: An example macrocell

### Improved Wi-Fi Network

- Several methods can be used to extend the existing Island Wi-Fi network, including straight Wi-Fi, Wi-Fi fiber, and Wi-Fi bridge variations.
- These approaches would provide connectivity to specific strategic locations through a wireless connection, but would fall short of delivering comprehensive, whole of island coverage.
- Deploying a Wi-Fi network that covers a large part or entirety of the Island is not financially feasible due to the substantial hardware, interconnecting infrastructure, and ongoing maintenance demands.

### Advanced 5G/6G (Long-term option)

- Emerging technology suggests that telcos will further leverage low-latency internet services ([e.g. Optus and Starlink partnership - explained here](#)) to provide full coverage to black spot areas.
- Once Advanced 5G/6G is introduced, no additional infrastructure will be required to take advantage of this function (iPhone14 already uses this satellite technology to enable texts to emergency services).
- Advanced 5G/6G is currently expected to become available to all of Australia by mid-late 2025. Satellite-powered SMS is anticipated for late 2024, and satellite-powered voice and data for late 2025.

### Maintaining existing technology

We will continue to rely on landlines and radios as part of the existing communications network. The Options Paper notes that it is important to ensure these technologies are maintained and the existing infrastructure is leveraged where possible:

#### Landlines

- The existing Island landline network relies on Telstra's maintenance of the fixed copper lines. Telstra has assured its commitment to maintaining these lines for the foreseeable future.
- The recent availability of low-latency internet services like Starlink makes VoIP phones (devices that make and receive data via internet connection) a feasible substitute for the traditional fixed copper line network. This can be considered as a way of mitigating the risk of losing the fixed copper line network.

## Radio

- The VHF radio network is essential to the Island's safety, emergency, and operational communications. It should continue to be invested in, to ensure that it is operating effectively.

## Overall summary of connectivity options

- The existing technology options to achieve Island-wide connectivity pose various challenges. These include being structurally intrusive, requiring substantial financial investments, requiring increased operational and maintenance expenses, or delivering performance that falls short of our needs.
- Emerging technologies may offer complete coverage without imposing costs or physical impacts on the Island and render the alternative existing technologies unnecessary.
- In order to establish comprehensive connectivity sooner, various short-term solutions can be considered (refer to page 3-4 and the [solutions pros and cons table on our website](#)).

## Our Short-Term Solutions

The combination of short-term solutions we could consider establishing greater Island-wide connectivity are:

### 1. Installing 3 microcells at strategic locations around the Island

Completion time	Coverage	Infrastructure required	Anticipated cost	Operating/Maintenance cost per year	Lifespan
12-24 months	20%-40% of Island	3 x 3.2m <sup>2</sup> concrete slabs, 9m pole + antennae	\$508,000+	\$0 provided by Telstra	10-20 years

### 2. Installing 2 microcells and strategically placed public Wi-Fi points across the Island

Completion time	Coverage	Infrastructure required	Anticipated cost	Operating/Maintenance cost per year	Lifespan
12-24 months	20%-40% of Island	2 x 3.2m <sup>2</sup> concrete slabs, 9m pole + antennae + Wi-Fi equipment	\$374,000+ *	Upwards of \$40,000**	7-20 years

### 3. Installing strategically placed public Wi-Fi points only (up to 4 locations)

Completion time	Coverage	Infrastructure required	Anticipated cost	Operating/Maintenance cost per year	Lifespan
3-6 months	20m-60m per location	Wi-Fi equipment but can attach to existing infrastructure	\$160,000+ *	Upwards of \$40,000**	5-7 years

4. Installing strategically placed public Wi-Fi points only (up to 12 locations)

Completion time	Coverage	Infrastructure required	Anticipated cost	Operating/Maintenance cost per year	Lifespan
3-8 months	20m-60m per location	Greater infrastructure required due to not all locations having current infrastructure	\$465,000 to \$750,000+ *	Upwards of \$110,000**	5-7 years

5. Do nothing - wait for developing technologies and future national infrastructure like 5G Advanced/6G (likely available from mid-late 2025). Allow the market to respond to need re: provision of publicly available wifi.

Completion time	Coverage	Infrastructure required	Anticipated cost	Operating/Maintenance cost per year	Lifespan
12-24 months (Delivered in 2 stages)	Whole island coverage	Compatible phone and sim	\$0	\$0	Long term

\* Includes 3-year Starlink/wireless bridge ownership of each Wi-Fi site

\*\* Note that consideration of an appropriate business model is required, and options explored for full or partial cost recovery, and provision by a commercial operator

## Have Your Say

---

The full Communications Network Options Paper is [on our website](#) and open for public exhibition until Tuesday, 17 October 2023.

A community survey will be shared to provide feedback on the proposed short-term solutions to bridge the communications gap on LHI.