

# Fact Sheet: How will **nbn** design the Fixed Wireless network?



Australia's  
broadband  
network  
bring it on

## Fixed Wireless background

Fixed Wireless systems have a long history of being used for voice and data communications, supporting networks operated by phone companies, cable TV companies, utilities and railways. The name 'Fixed Wireless' explains the way signals are delivered to stationary, or 'fixed' antennas and facilities mounted on buildings, homes and other structures.

Fixed Wireless is different to current mobile wireless networks, which deliver varying speeds and reception depending on how many people are moving in and out of the area and whether they are using the network for low volume email or high volume downloads or video services.

The **nbn**<sup>™</sup> Fixed Wireless network uses advanced technology called LTE (commonly referred to as 4G). The **nbn**<sup>™</sup> network has been designed to reduce the impact of mobile wireless variables by setting a limit on the number of premises serviced by each **nbn**<sup>™</sup> Fixed Wireless facility. People's usage of the network will still vary, but the set number of serviced premises in each area means that the bandwidth available to each household is designed to be consistent, even in peak times of use\*.

To be able to achieve this, each **nbn**<sup>™</sup> Fixed Wireless facility needs to be situated reasonably close to the homes and business which will receive the **nbn**<sup>™</sup> Fixed Wireless network. Each customer will have a small antenna installed on the outside of their home or business, in near line of sight to the **nbn**<sup>™</sup> Fixed Wireless facility. This setup is designed to provide greater consistency in the speed and quality of service that can be delivered to each premises\*.

### How is the **nbn**<sup>™</sup> Fixed Wireless facility designed?

To achieve optimal Fixed Wireless coverage to the greatest number of local premises, **nbn** must locate each **nbn**<sup>™</sup> Fixed Wireless facility reasonably close to the premises that it is intended to service.

A typical **nbn**<sup>™</sup> Fixed Wireless facility will include three antennas mounted above the surrounding area (see diagram below). Each antenna covers a set area to maximise signal strength.

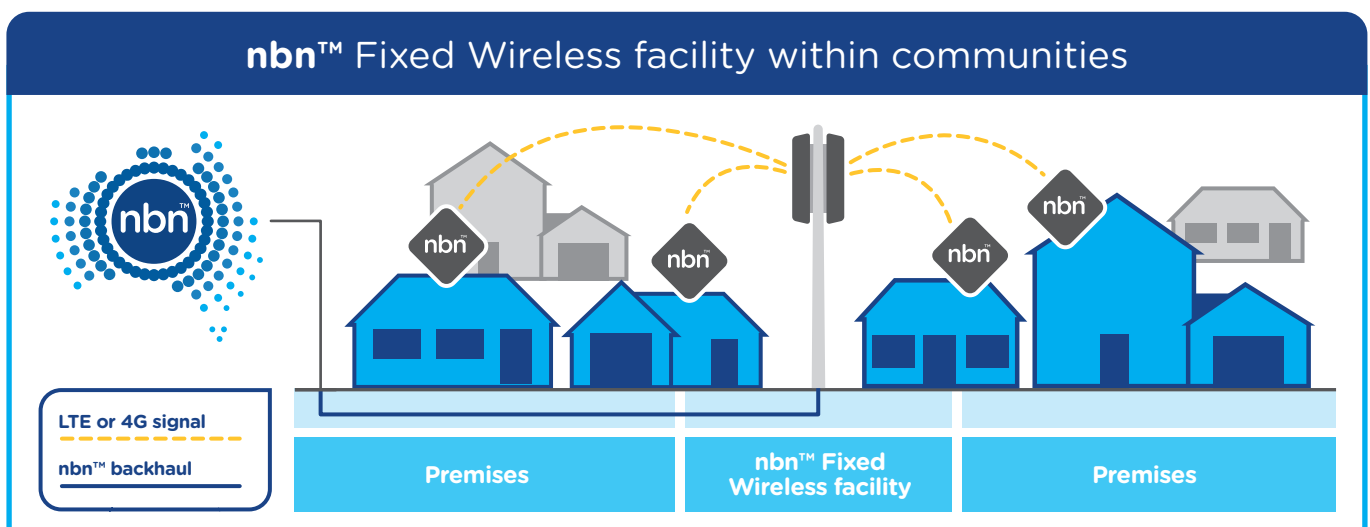
These network antennas communicate to a small antenna installed on the roof of each customer's home or business.

### The **nbn**<sup>™</sup> Fixed Wireless network

Although **nbn**<sup>™</sup> Fixed Wireless facilities are submitted to Council as standalone developments, from a planning perspective, they are highly interdependent. Each **nbn**<sup>™</sup> Fixed Wireless facility is connected to another to form a chain of facilities that link back to the **nbn**<sup>™</sup> Fibre backhaul network. This is called the 'transmission network'.

The transmission network requires line of sight from facility to facility until it reaches the **nbn**<sup>™</sup> Fibre backhaul network. The **nbn**<sup>™</sup> Fixed Wireless network will remain unconnected without the transmission network and a break in this chain can have flow on effects to multiple communities.

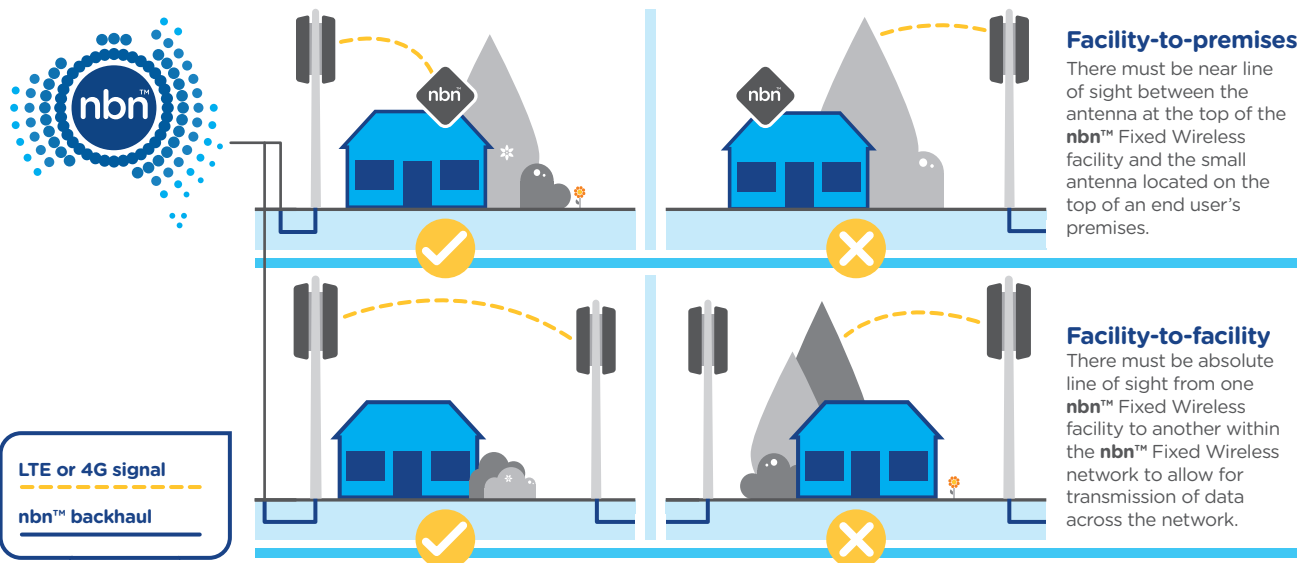
## **nbn**<sup>™</sup> Fixed Wireless facility within communities



\*We're designing the **nbn**<sup>™</sup> network to provide these speeds to our wholesale customers, telephone and internet service providers. Your experience including the speeds actually achieved over the **nbn**<sup>™</sup> network depends on some factors outside our control like your equipment quality, software, broadband plans and how your provider designs its network.

## nbn™ Fixed Wireless line of sight

There is a range of other factors that can influence quality of the nbn™ Fixed Wireless service, which nbn has to take into account when choosing a site with the right characteristics. Achieving a clear line of sight free from obstructions like trees, hills or other buildings must be considered in the following ways:



### Co-location of facilities

Wherever possible, nbn will actively look to use existing infrastructure to provide an nbn™ Fixed Wireless service. This is often referred to as 'co-location.'

Potential co-location sites include existing mobile facilities and other similar structures such as water towers or silos. For an existing facility to be considered as a viable co-location option, it must be positioned in a way that allows nbn to provide the required Fixed Wireless coverage. Adequate space for the nbn™ antennas at the required height must also be available.

nbn plans to inform Council and place a notice in the local newspaper to let people know that an nbn™ Fixed Wireless facility is to be established in the area.

### New nbn™ Fixed Wireless facilities

nbn will only propose a new structure to provide local Fixed Wireless services if there is no opportunity to co-locate on an existing structure. When assessing potential locations for new facilities, nbn will consider several key factors to determine if a new facility is feasible, including technical, planning and property considerations:

- **Engineering requirements and service coverage.** nbn™ engineers will research the region to determine what locations could provide good, reliable service provision, maintaining clear line of sight to surrounding customers and to adjoining network facilities. Additionally,

engineers also assess the availability of low voltage power at proposed locations.

- **Planning requirements.** Planning considerations, including zoning of the land and its current use, can be influential in the site selection process. nbn carefully considers the visual amenity associated with the new facility, proximity to other structures and land uses, and will endeavour to find a location that satisfies all of the relevant Council and State government planning criteria.
- **Property matters and the ability to secure tenure.** nbn must secure tenure of land based on negotiation and agreement with the land owner. A proposal will not proceed without such an agreement.

### What happens when a site has been chosen?

Once a site has been selected and plans drawn up for a proposed new nbn™ Fixed Wireless facility, the proposal will be submitted to the local Council. Residents will then have the opportunity to comment on the proposal in accordance with the relevant planning and development assessment processes.

nbn will always adhere to statutory consultation requirements and typically undertakes broader consultation than is required by the planning legislation for new structures.

Construction of a new nbn™ Fixed Wireless facility will generally commence following the completion of all relevant planning and consultation processes.

**For more information call 1800 687 626 | visit [nbn.com.au](http://nbn.com.au) | [info@nbn.com.au](mailto:info@nbn.com.au)**

If you want to connect to the nbn™ network you will need to speak to a phone or internet provider. Maps showing the current rollout plans for the nbn™ Fibre and nbn™ Fixed Wireless services areas, as well as further information about the nbn™ network rollout are available at [nbn.com.au](http://nbn.com.au)