

Infill sites

Mobile phone users rely on their ability to be able to make calls and access mobile broadband anywhere and at any time.

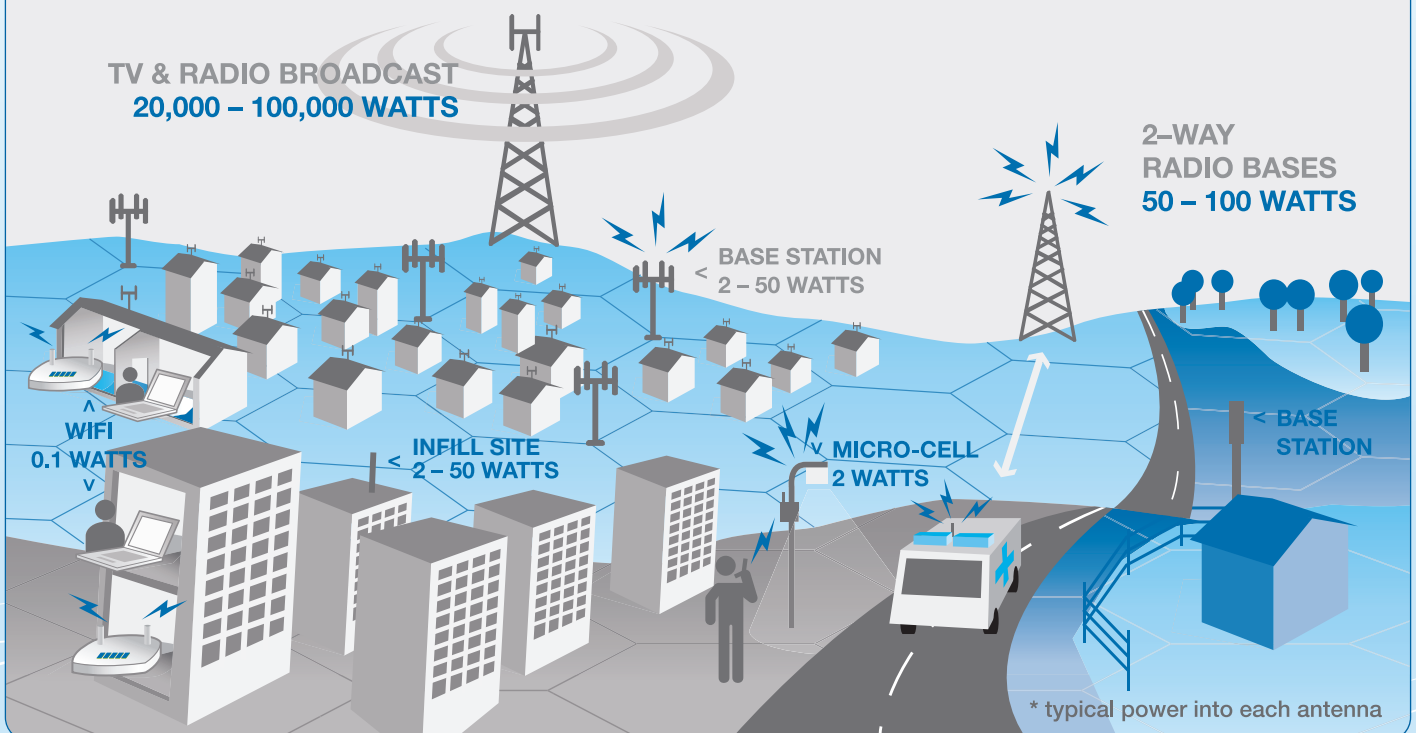
Mobile networks continue to evolve in response to customer demand. In the early days of mobile phone coverage, calls could only be made and received in certain locations. Since then, networks have expanded to provide continuous coverage in most metropolitan areas. As the number of mobile phone and broadband users increases and the level of network traffic increases, then pressure is put on mobile network operators to continue to provide the level of service people have come to expect.

The rate of change in mobile network technology is rapid and these advances have led to enormous growth in the uptake of mobile broadband. Users accessing the internet via mobile internet and broadband devices place considerable additional demand on mobile networks. Australians have enthusiastically adopted mobile services and analysts predict a compound annual growth rate of mobile broadband traffic over the period 2010 to 2014 of around 90%

In designing a mobile network, engineers take in to account the amount of mobile phone and data traffic in each specific area. Each mobile base station can typically carry up to 100 calls at any one time and some even more depending on the network design. If the base station is handling traffic at this maximum capacity any new call or connection will not be able to be connected to the network at that time.

In areas where the use of mobile phone and wireless enabled devices is high, such as business districts, major retail areas and metropolitan areas, networks must continue to expand to cater for increased network traffic. Often new base stations, referred to as 'infill sites', are required to be built to cater for the increased network traffic. Their target coverage area can be very limited in size to just a few hundred metres.

RADIO COMMUNICATIONS IN THE COMMUNITY



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This means that new base stations are required to be located in areas that already have mobile phone coverage where the existing base stations cannot carry the amount of traffic that is generated in that geographical area. Quality mobile network services can only be maintained where base stations are located in close proximity to the user.

Comparisons can be drawn with other everyday infrastructure we live with. For example, whilst there may be a road that carries traffic from the CBD to a residential suburb, that road becomes heavily congested during peak hour traffic. Traffic can be too congested to actually allow much movement and cars cannot enter and exit the road easily. Roads with extra capacity, such as an additional lane or two, are more easily able to manage traffic flow during periods of congestion. Planning for more lanes, clearways and more roads allows the traffic congestion to be eased. Building “infill sites” is a strategy that mobile network operators use to ensure their networks provide reliable connection for customers and avoid congestion.



Mobile phone base stations are carefully designed taking in to account the number of people using the networks in that geographical area as well as the physical limitations such as hills and valleys or buildings.

Mobile phones and broadband devices continue to play an important role in the lives of Australians, from providing the fundamental ability to be in contact with family and friends, to operating businesses more efficiently and effectively. As the networks evolve mobile technology is also contributing to create a low-carbon economy through “virtual” alternatives, such as video-conferencing and smart logistics solutions. Networks continue to evolve in order to be able to cater for the ongoing and varied applications of mobile phone technology.

More information

For more information, please contact:

Mobile Carriers Forum

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Australian Communications and Media Authority (ACMA)

Ph: (03) 9963 6800

<http://acma.gov.au>

Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)

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www.arpansa.gov.au

EMF Explained web site

www.emfexplained.info