7

Telecommunications and digital futures

"Samford and surrounds requires a high-speed, high-bandwidth telecommunications system to sustainably deliver all existing and future needs of families, businesses and schools, installed in such a way that is sensitive to the environment and public amenity."

7.1 History and background

Up to the turn of the century, Samford and surrounds had been serviced by a fixed-line copper cable network, supplemented in recent times by the relatively recent introduction of high-intensity, mobile wireless telecommunications towers installed at key locations around the Valley.

In some locations, the community has had to opt for the use of costly, low-speed, low-bandwidth, satellite-based technology to connect to the Internet.

Up to the late 1990s, Internet access required dial-up modems, facilitated by the existing fixed-line copper cable network. Since the mid 1990s, rural subdivision developments have typically included the installation of localised cable-based technology systems to permit the future connection of ADSL2 telecommunication hardware. In many instances, this subsequent work has not occurred.

Samford and surrounds does not have any fibre-optic cable-based communication technology offering high-speed, high-bandwidth communications. In some locations, the community has had to opt for the use of costly, low-speed, low-bandwidth, satellite-based technology to connect to the Internet.

In some locations, such as Highvale, Cashmere and Eatons Hill, some property owners have out-dated 'pair gain' connections that are shared with neighbouring property owners. Although the application of ADSL technology is routinely promoted by various service providers, in such locations as these there is little possibility for ADSL2 being applied with the existing installations. In these circumstances, property owners need to have their home and property assessed for Internet access by a third-party service provider before applying for satellite broadband service under the Federal Government Broadband Guarantee Program. Although this technology application improves telecommunication access, the system is limiting and extremely costly to the resident.

In general, the 3 network mobile phones may only work in parts of the home, while Optus offers limited coverage. Virgin mobile reception is considered patchy. Vodafone mobile is almost non-existent. Telstra has the only reliable service for reception, but phone plans are considered by many to be too expensive and Telstra's service and support can be problematic.

Factors that contribute to the problems many residents experience with the existing telecommunications installation include:

- population growth
- old infrastructure unable to provide the level of service available from new technologies
- existing exchanges at Samford and Highvale, which have not been progressively upgraded, leading to overload and lack of functionality
- lack of fixed lines and distance from exchanges so that residents must rely on a wireless-only service
- existing 3G wireless infrastructure, which is unable to cope with demand

A united community voice and involvement is essential to bring about positive change or prevent undesirable change

7.2 Existing network

7.2.1 General background

Networks may comprise fixed-line and wireless technology as follows:

Fixed-line

1. Copper network
2. Fibre optic network (NBN Co)

Wireless

1. Fixed
2. Mobile

7.2.2 Current fixed-line services

Fixed-line services currently come in the form of ADSL / ADSL1 / ADSL2+ by copper phone line.

Asymmetric Digital Subscriber Line (ADSL) or Asymmetric Digital Subscriber Loop technology is well suited for web browsing/client server and emerging applications. The ADSL data rate strongly depends on the length of cable and quality of the phone line connecting the end-user to the telecommunications company. ADSL provides relatively fast downloads and a voice channel, hence the ability to operate a home phone concurrently with a modem and wireless router. ADSL can carry digital data, analogue voice and broadcast MPEG2 video in a variety of implementations to meet customer needs.

The existing Ferny Grove, Samford and Highvale exchanges can be upgraded through the use of 'Top Hat' technology, released by Telstra in November 2011, to facilitate the provision of ADSL services. Five upgrades have been scheduled by Telstra to be undertaken in the Valley for completion by early 2013.

7.3 The proposed Telstra tower at Highvale

On 24 April 2012, Telstra advised the Highvale/Samford community of its intention to provide additional data and voice capacity relief to the area by expanding the 3G network.

Due to federal legislative requirements, Telstra has an obligation to consult with the community prior to the deployment of any new wireless infrastructure. Several members of the community, frustrated by existing services, saw this as a timely opportunity to advocate for an improvement to both the fixed-line and wireless services in the area.

In early 2012, the Samford Progress Association created a Telecommunications sub-committee, which was given the charter to:

1. engage with the community to assess and determine the required telecommunication needs
2. engage with Telstra, as the prime telecommunications service provider, with the aim of securing the appropriate technology to meet community needs
3. engage with council, state and federal government elected members to ensure that community needs were recognised and being considered, and any infrastructure deployed by service providers met relevant planning codes.

7.3.1 Telstra processes

Telstra is legally obliged to undertake a consultation process with the community, but there is no legislative requirement for a telecommunications organisation such as Telstra to actively listen and respond to the needs of a community

Initial discussions with Telstra identified that the Wireless Business Unit does not, as a matter of course, collaborate with the other Telstra business units – Fixed Services or Countrywide – for overall planning or operations. Each business unit assesses an opportunity to expand its own network for a particular area, rather than collaboratively consider the needs for a community or region.

In the case of the proposed tower at Highvale, it became evident through discussion with Telstra that the end result would not meet the expectation or needs of the community, and that the project was being developed to an established Telstra business case. Telstra also confirmed, as a contributing factor to the height of the proposed tower, that Telstra has already on-sold space beneath their double headframe, to accommodate Optus and Vodafone antennae. The proposed tower has a height of 31.8 m and would be festooned with antennae for almost half its height.

The proposed tower for Highvale would be extremely visible by the given topography from a significant number of nearby residences, as well as from many vantage points throughout the valley.

The proposed tower, if approved by council with its current form, would set a precedent for what is deemed acceptable infrastructure along one of greater Brisbane's most popular tourist drives and what is a scenic gateway to the Samford Village. Furthermore, approval for the Highvale tower would nullify objection to any subsequent development application for a similar sized and arranged facility.

Telstra confirmed that the 3G wireless service specified for the proposed Highvale telecommunications tower cannot meet the overall telecommunications needs of the Samford community. The tower can be overlaid at a later date with the 4G LTE technology, but Telstra advised that 'there is no visibility or plan as to when this might happen'.

Telstra confirmed that, in order to provide sufficient capacity for a wireless network service to Samford Valley and surrounds, Telstra intends erecting many additional towers.

The proposed towers would only provide extra capacity, meaning that more people can use the wireless network service concurrently but that network speed and data capability will become progressively reduced as more people access the network service, with a consequential slowdown of operation and reduction in network performance.

The Telstra business case is based on the premise that this area needs additional data capacity, but if this is true then more appropriate technology should be installed to meet the community's needs, now and into the future.

7.3.2 Community engagement with Telstra

Telstra conducted a 1-hour presentation to invited and interested members of the Samford community at the Samford Showgrounds on 24 April 2012. Approximately 90 people participated in the meeting, which was organised via the Progress Association.

After the presentation by Telstra representatives, and questions and answers from the community, a number of decisions were taken by community representatives, namely:

1. The proposal to erect a single tower at the nominated address should be opposed. All present from the community agreed.
2. It was agreed that the priority was to undertake strong advocacy of behalf of the community to investigate the early introduction of the NBN in Samford Valley and surrounds in lieu of wireless technology.
3. As a way of stopping the pending application, we should advocate for the relocation of the proposed tower to a more appropriate location.
4. Further research on the medical aspects of wireless technology should be investigated.
5. A sub-committee was established to implement the decisions itemised in points 1–4 above.

Follow-up meetings with Telstra were requested by the Telecommunications sub-committee and held in May and June 2012 in order to better understand the implications of the proposed Highvale tower development, with a view of identifying the most appropriate form of telecommunications technology required for the Samford Valley and surrounds community.

In order to best understand and categorise the community's needs for telecommunications technology now and for the future, a community questionnaire was framed by the sub-committee and released 14 June 2012. Of 2500 mailings, approximately 290 members of the community responded, and the responses analysed and presented to Telstra and the Progress Association.

Telstra submitted a development application 27061 to MBRC on 8 August 2012 for establishment of a telecommunications facility in Highvale. The public consultation period to consider the application sought submissions by the community from 15 October to 2 November 2012.

About 100 properly made submissions from members of the public regarding the development application have been raised to the MBRC. Approximately 95% of the public submissions express opposition to the development application with respect to the application not conforming to the council planning guidelines covering placement of high-intensity telecommunications facilities in proximity to residential properties.

Approximately 95% of the public submissions express opposition to the Telstra tower development application

7.3.3 Government engagement

From the initial meetings, the sub-committee ensured there was strong contact with all levels of government. This included regular communication with the local MBRC councillor Bob Millar, state member for Ferny Grove Dale Shuttleworth, and federal member for Dickson Peter Dutton.

A site meeting was held on 8 October 2012 with the mayor of MBRC Alan Sutherland, councillor and chair of planning Mike Charlton, and local councillor Bob Millar to discuss the findings of the sub-committee in light of existing council planning guidelines for telecommunications facilities.

The process of government and stakeholder engagement has shown the Telecommunications sub-committee that:

1. A telecommunications service provider, such as Telstra, may lodge a development application with the MBRC proposing establishment or modification of a telecommunications facility regardless of the community's stated needs or requirements.
2. A telecommunications service provider may lodge a development application with the MBRC regardless of the aesthetic, social, technical or otherwise perceived suitability of the proposed development to the community.
3. The MBRC must consider the development application in terms of agreement or contravention to MBRC planning code, and may agree to a development where it is deemed to meet community needs.
4. In general, regional councils and community are usually not successful in developing technical arguments that result in the rejection of a telecommunications development application.
5. A telecommunications service provider may consider legal action in court against the MBRC to seek to have any rejection or conditionality in the approval of the development application overturned.
6. Local and state governments, although active in the encouragement of sensible development within community, are limited in their capacity and with what actions that can be taken to alter the process.
7. The federal government is very supportive of securing the right solution for the community, but existing legislation although strict, allows for self-regulation by the telecommunications industry and is therefore open to being ignored by telecommunications service providers.

Simulation of proposed Telstra Tower location

> *Developments need to fully consider the rural nature of this area.*

7.4 The way forward: our digital future

The community has an expressed need for telecommunications in the Valley to be driven by technology that delivers high-speed, high-bandwidth applications of an open platform type, unconstrained by traditional service providers. The community requires the telecommunications system to be beyond basic email and Internet access, and driven by high-bandwidth applications such as video streaming, video conferencing, cloud services, e-education, e-government and e-health.

The community needs and deserves a communication network that is suitable for purpose: one that is sustainably developed and provisioned, and will continue to meet present and future demand of families, businesses and schools in the area. It should be built for Samford and surrounds in a way that is sensitive to the environment and public amenity.

Increasing the number of households and businesses in the Samford Region that are connected to broadband will deliver positive benefits to both families and communities through social, economic and environmental development.

The digital economy strategy for the Samford region needs to focus on an increased number of digital workforces, online engagement by not-for-profit organisations, digital hubs, interactive community information screens, increased access to online health and education and the ability to stay competitive in this digital world.

The only way to achieve a successful digital future for the Samford Region is through the establishment of quality infrastructure that will provide reliable high-speed broadband to all homes, schools and businesses in the area. Reliable high-speed Internet is already critical for the delivery of, and access to, a vast array of products and services.

The rate of change in technology has a high impact on how we live our lives. Technologies that started as expensive commercial applications are now increasingly available to the everyday consumer.

An example of this is cloud storage. Cloud storage and processing power is now an everyday tool for many of us. We use it for banking, storing of photos and messaging, and business people use it for processing complex algorithms for simulating performance of structure, components or imagery. The ability to use phones to access cloud services starts to break the boundaries of what was accepted as normal only months ago.

Via 'crowd-sourcing' using the Internet, it is now possible to put an idea for a product to a group dispersed worldwide, who in turn will commercialise the idea and have it in production within days weeks or months, with the originator simply receiving royalty payments. There is no capital (or logistics) involved in crowd sourcing: just the ability to communicate in real time via reliable high-speed Internet.

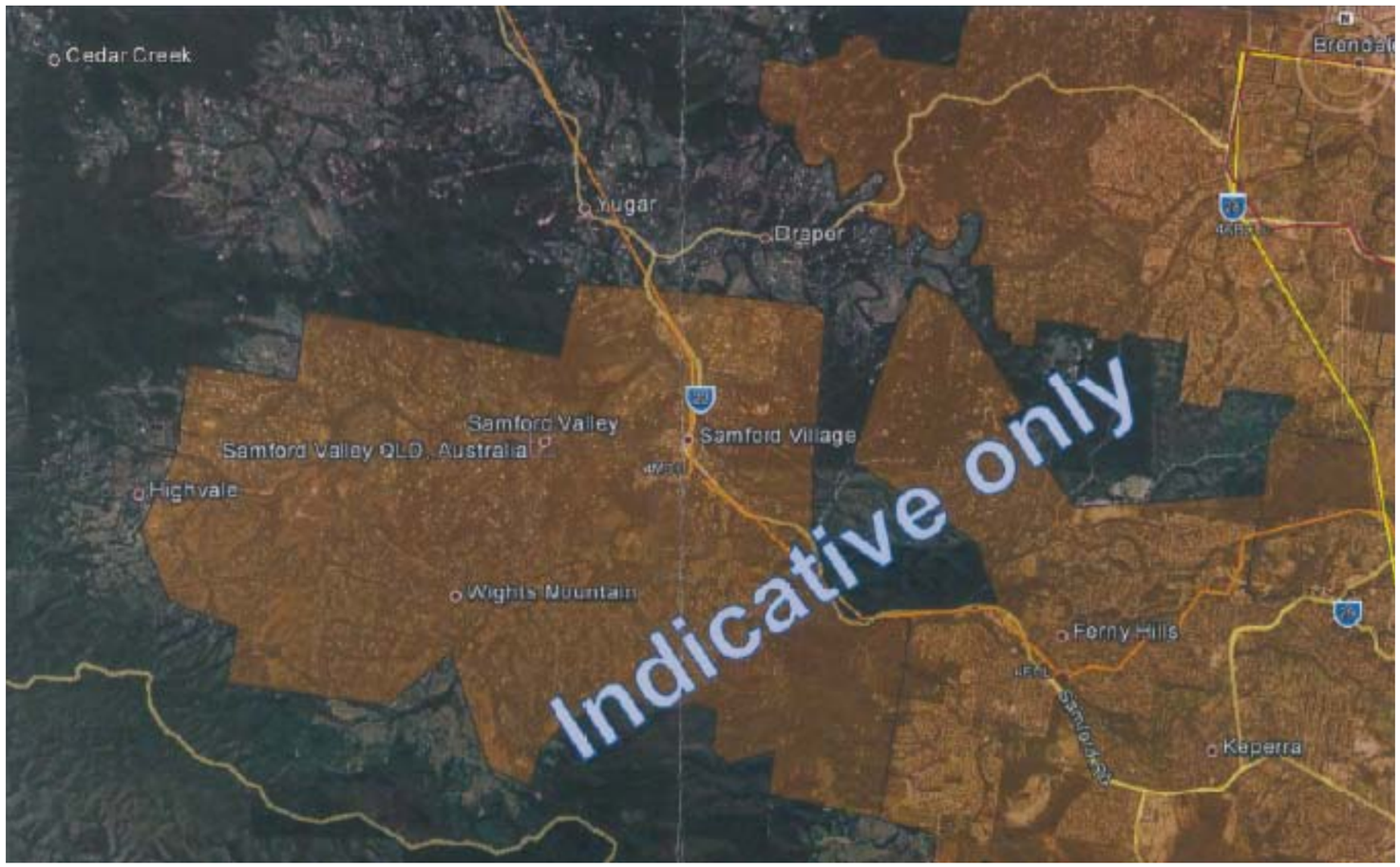
Emerging technologies, which are often totally digital by nature, will continue to transform how we will source, procure, consume, work and collaborate into the future. By taking advantage of the opportunities of digital technologies and advocating for broadband services, we are ensuring we and our children are not disadvantaged by not having access to the tools and technologies that will shape our world in the coming years.

7.4.1 Future fixed-line services

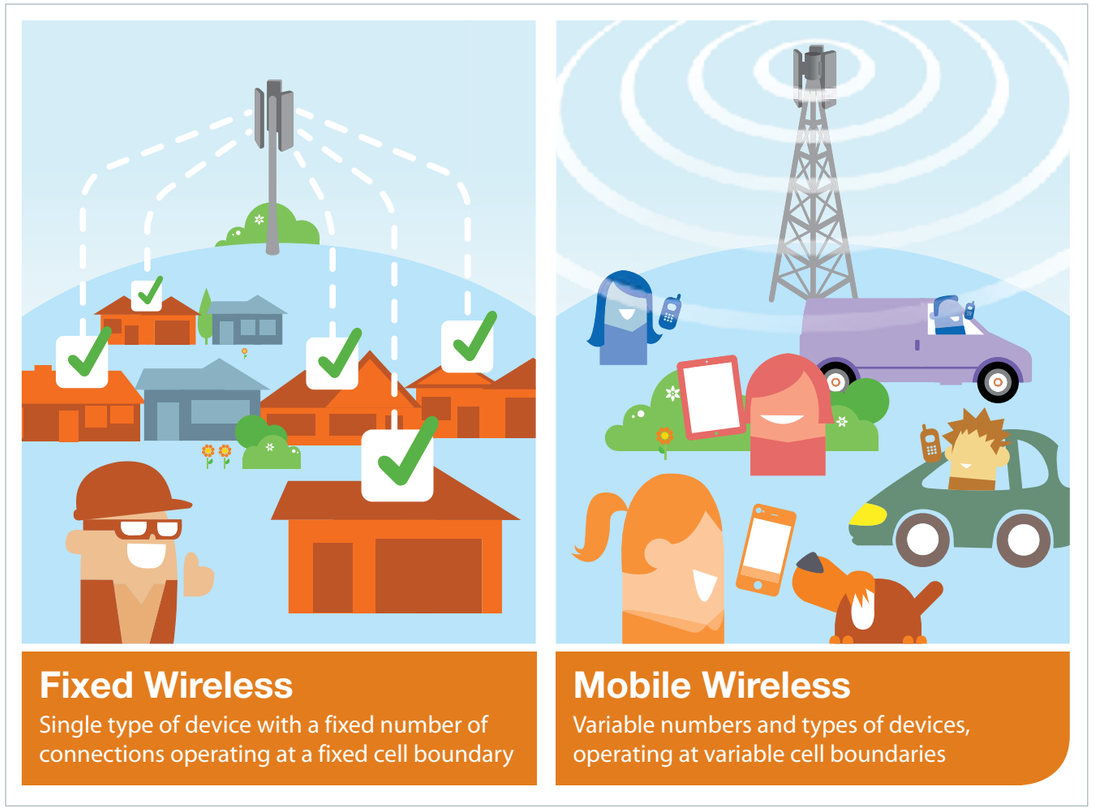
The National Broadband Network (NBN) is a developing federal government-owned and initiated communications network that, once completed, will run fibre optic cable into 93% of Australian homes and businesses. The NBN will provide speeds of up to 1 gigabyte per second through FTTP (fibre to the premise) technology. In most cases, the NBN will replace the existing copper wire-based network owned by Telstra. Like the copper it replaces, NBN's fibre optic network will carry telephone, broadband and television services. These will be offered by retail service providers such as Telstra, Optus, TPG, iiNet and many others. The remaining 7% of premises will receive 12 megabits per second through either a satellite or other wireless solution.

NBN Co – the company created by the federal government to build and operate the NBN – will not sell directly to households, but instead will sell wholesale access to the network on equal terms to all retail service providers.

Members of the Samford Telecommunications subcommittee met with the NBN Co in July 2012. The NBN will be delivered to the majority of residents in the area with fibre-to-the-premises (FTTP) technology. The FTTP installation will commence in 2015.



Fibre footprint map as provided by NBN Co



The difference between fixed and mobile wireless

7.4.2 Fixed wireless services

From Highvale, the NBN Co is offering a fixed wireless service. The technology to the area is expected to be delivered and operational in early 2015.

7.4.3 Mobile wireless

Mobile wireless services can be provided in the following forms:

- CDMA (3G)
- WCDMA (3G)
- WCDMA HSPA (3.5G)
- LTE (4G)

The evolution of cellular (mobile) communications networks is commonly known by the designations 1G, 2G, 3G and 4G:

- 3G was designed to provide voice and some data capacity to mobile devices, and intended to complement, and not replace, fixed line services.
- 4G LTE (long-term evolution) offers higher speeds than existing 3G networks. 4G LTE integrates all communications, including voice, video, e-mail, world wide web, messaging, etc., using Internet Protocol (IP)
- 4G technology, developed in the period 2004–2010, was being extolled prior to the release of 3G technology, but is only now being rolled out by telecommunications companies as they attempt to re-coup their investment in the underperforming 3G technology. 4G does not provide the reliability and speed of a fixed line service but is greatly enhanced compared to 3G. The proposed tower for Highvale would employ out-dated 3G technology.

Our vision for action

- Ensure the Samford community gets a telecommunications system that provides more than basic email and Internet access, and is capable of delivering high-bandwidth applications such as video streaming, video conferencing, cloud services, e-education, e-government and e-health.
- Ensure the Samford community gets a telecommunication system that is suitable for purpose, sustainably developed and provisioned, and capable of continuing to meet the present and future demand of families, businesses and schools in the area. It should be built for Samford and surrounds and installed in a way that is sensitive to the environment and amenity.
- Continue to lobby for Samford and surrounds to be connected to the NBN at the earliest opportunity to ensure that there continues to be growth, development and prosperity of existing and newly developing businesses, families, students, and educational facilities at an equivalent rate to all other areas within Australia.
- Reject the provision of secondary telecommunications towers using out-dated 3G technology, which would preclude all sections of the Samford community from accessing sustainable telecommunications services.
- Ensure that the installation of additional telecommunications facilities, including towers, fully meets MBRC planning guidelines by being visually unobtrusive, established away from housing and uses the latest communication technology.
- Install publicly accessible touch screen technology and web-based technology in Samford Village to enable locals and visitors to be informed about Samford's events, attractions and capabilities.

Everyone's future

Want to get involved or find out more? Visit the website for further resources, links and updated info.

www.samfordfutures.org

"Improve what we already have – but not drastically alter what we have – it is unique what we have in Samford, let's keep it that way."