



Achieve better broadband for Regional Communities (ABBRC)

How to establish a community group

Wamboin Communications Action Group (WCAG)

April 2021



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Published in **2021**

This project was funded by a grant from the Australian Communications Consumer Action Network (ACCAN).

The operation of the Australian Communications Consumer Action Network is made possible by funding provided by the Commonwealth of Australia under section 593 of the *Telecommunications Act 1997*. This funding is recovered from charges on telecommunications carriers.

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Cover image: **Olaf Theden 2016**

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Introduction

With the implementation of the NBN (National Broadband Network) and its goal of 'Levelling the digital divide', the residents of Wamboin were looking forward to being provisioned with future proof internet access to replace the current reliance on ADSL (dial up modems) and patchy digital phone services. The belief was that we would get a reasonable service, probably 'Fibre to the Node' with the old Telstra copper 'Last Mile' being upgraded over time. Sadly this was not the case and we found out that we had been put in a SkyMuster area as 'Remote Regional'. This was surprising as the median distance of the Wamboin Area from Parliament House is ~15km as the crow flies.

This prompted a few locals, independently, to write articles for the local paper laying out what an NBN service would do for the area and expressing their disappointment. The authors of these articles got in contact to discuss the issue and what could be done to get a better service. This process was the start of the Wamboin Communications Action Group (WCAG).

The group investigated different solutions and how they could bring the current and proposed service to the attention of the powers that be. It became apparent that to gain any traction they would need to be organised and demonstrate not just a level of interest by the community, but their active and vocal support. WCAG was focused on Wamboin residents, but this quickly grew to include the adjoining areas of Bywong and Sutton, as they faced the same challenges, and it was acknowledged that in the first instance we had to focus on rural areas.

The region has over 100 small businesses, some international, with quite large data requirements as well as a very large number of home based "knowledge workers". Many residents have children at school in Queanbeyan and Canberra and the schools' expectation is that all children have access to good NBN connectivity. Other residents would like to take advantage of more of the digital landscape, and COVID19 has exacerbated this, by greater use of streaming media, Skype, Zoom, WhatsApp, etc., as well as remote access to work, and where they have access to it, are having to stay with either ADSL or mobile phone data plans. While these might be slower they are nevertheless considerably more reliable than SkyMuster.

As the end result of work by the WCAG core group and organising a high level of support from the local area, we were able to lobby government and this resulted in Wamboin, Bywong and Sutton region being offered a grant by the NSW government to help build a suitable network. This has now transitioned from a grant into a bigger pilot process to demonstrate high speed large data in rural areas under the auspices of the NSW Government Gig State project.

The purpose of this document (and related attachments) is to record how WCAG achieved this outcome with the intention of providing guidance and insight to other communities across NSW/Australia that have similar aspirations.

It is hoped that when this process completes it will provide the template for other areas with similar issues to achieve what the NBN was supposed to do. The NSW Government has allocated \$400m in total for initiatives in the context of improving the digital environment for regional NSW.

Within WCAG there is considerable knowledge and expertise from their activities over the last four years. This has resulted in ACCAN providing a grant to WCAG to document their knowledge around this process. This series of documents is not designed to fixate on a single solution – not every aspect of WCAG's history and activities will necessarily work or be appropriate for each community. It is rather the process that needs to be gone through to identify the needs of a location and the technologies that could be used to provision the service levels needed.

It is acknowledged that each area will have its own unique challenges and opportunities and these documents will provide guidance on what needs to be done and how. Under the terms of the ACCAN Grant, WCAG members can provide face-to-face, either physical (where possible) or virtual assistance to two interested groups/communities during 2021/22. This assistance will provide more targeted

information than can be provisioned through these template documents and should hopefully fast track the setup of the required local organisation.

This document contains information about how to setup a community group and get external parties to support you. Support from a reasonable percentage of the local population and from external parties legitimises the endeavour and demonstrates to everyone the level of commitment and that this is more than a thought bubble and worth investing time, effort and possibly money.

How to establish a community group

Trying to organise a community to get better digital services is rather like herding cats. A small group of people will be more easily able to cope with the workload, the knowledge base, the organisation, the writing, attending meetings, etc. To this end you need to think about the following:

- How to contact similar minded people to form a core group
- The skill set and types of expertise that are needed and should be targeted
- Platforms to get the message out
- Gathering your local residents

Above all be crystal clear about your purpose – what you want to achieve and what is not in scope!

How to contact similar minded people

Unless you already have a core group of people you will need to find those willing to help, but this can be difficult if there are thousands of residents in the area. Talking to neighbours and friends will probably not help you find others who are willing to help but are outside of your normal interaction circle.

If there is a community newspaper they are often looking for articles to include, particularly from residents. It is worthwhile writing an article for these newspapers, outlining the issues as you see them and what your proposed group is trying to achieve. The article should be short, easy to understand and contain only one or two points that you wish to raise. At the end of the article you should provide contact details or, if you are concerned about this, then suggest they make contact through the publisher.

If you provide contact details you may wish to be careful about using a personal phone number or email address. The simplest method is to create a new, free, generic email account for you to use to establish the group. Think carefully about this as this email address could become the basis of a future campaign.

In WCAG's case three people wrote articles for the local newspaper just to express their disappointment at being consigned to SkyMuster. This prompted contact through the publisher, resulting in a meeting of the three to discuss the issues. The main point it highlighted was that each of us was not on their own and that there were others that thought the same and were prepared to do something about it.

You can find examples of the initial articles used for the Wamboin area in Appendix 1.

As a result of this initial meeting we felt it was worthwhile moving to the next stage, getting the message out to the local residents.

WCAG ended up with a core group of seven with representatives from each of the three main localities within the area. The group also had a diverse range of skills and backgrounds such as:

- Project management
- Engineering
- Information Technology
- Management
- Procurement
- Teaching
- Small business ownership

As mentioned above, this range of skills and knowledge enabled us to understand the issues the area was experiencing, could understand the technical and non-technical aspects of any potential solution and effectively communicate with the residents, potential suppliers and third parties, i.e.

government and public service. This shows that a core group with diverse experience will be better able to find solutions for the residents in the area and be able to acknowledge when other help is needed.

The core group needs to establish the compelling case for broadband for your community. This will likely vary from one community to another but the arguments and reason for government to invest in your community rather than another must be strongly made and supported by evidence. This might include, for example, the economic benefit, the social needs, environmental needs, emergency management, primary production, education, etc.

Platforms to get message out

Having established the core group, it needs to gain visibility and traction within the community. The aim of this step is to get residents to sign up and showing their support for the aims of the group. A petition with a thousand names has far more impact than the three or four in your core group.

Getting the message out can be done by:

- Writing further articles for local newspapers
- Attending local markets and car boot sales
- Attending community group meetings and events
- Creating a group email account
- Building a website
- Survey to provide data/evidence to support the business case
- Joining local Facebook groups
- Joining other social media groups
- Putting up posters in prominent areas
- Making letterbox drops
- Door knocking

Newspaper articles

Writing further articles for the local papers, while it appears to be a reiteration of a previous section, keeps the idea of better connectivity and what is lacking in the current situation in people's minds. Articles in local papers need to be short, approximately half a page, be factually correct and explain communications technology in layperson's terms. It is worthwhile making a sequence of these articles so that they can be published on a regular basis. Break the information into sensible sections that are easily digested, otherwise you will lose readers with too much technological information. As you progress your cause, other topics will arise as members of your community ask questions or make statements about their views that are often incorrect.

In Wamboin, we found that many people believed that 5G would be the solution, without really understanding how. They had listened to advertising aimed at city dwellers, not realising that 5G would be neither suitable nor provided in their area. A short article in the local paper was the result.

A series of well researched and well written articles will encourage people to seek more information by contacting you and registering their interest in supporting the group. It also means that when you do some of the other activities people will seek you out to talk face-to-face. If they have the knowledge or the time they may also agree to join the core group or help to promote it further.

You can find examples of several newspaper articles in Appendix 2.

When WCAG was first contacting the residents, it was quite enlightening to find out how ill-informed many people were about communications, particularly as we rely so heavily on voice, video and technology based services (cloud, social media, streaming, remote access, etc.). There were beliefs that the government would fix it all, or the NBN would work well for rural and regional users, that Telstra would always provide a phone, etc. We wrote many articles and answered many questions

about these topics and it is disconcerting in a way to see that much of what we predicted has now turned out to be true. Our residents are now far more trusting and supportive as they realise that we actually do know what we are talking about. You get the sudden realisation that more needs to be done and that it is in our hands to do it.

Markets, Car Boot sales and Community meetings

The most critical way to gain members and build support is to be visible at all community functions. This includes market days, community meetings, school open days, shows, etc. However when you setup for these events it needs to be eye catching with you, and hopefully others, actively engaging with passing traffic. To this end, having posters and leaflets, etc. helps, as it gives people something to look at, pick up and possibly take home. Displaying a large map of the area you plan to target will encourage people to approach and ask questions. Also, targeting your audience with articles directly related to known problems and solutions for your area will encourage them to approach you.

For WCAG, the problem that local school children were having was highly relevant, as having such a poor internet service was directly affecting their grades. We displayed some bullet points and articles that were directly aimed at this issue, which led to many more residents signing up to our cause.

WCAG attended the local country show with a display stand. We displayed a large map showing which area we were dealing with. At a later stage we developed a second map, which we displayed at several community meetings. This map was updated continually, showing the approximate sign-up rate within the area, broken down into sections. This helped people to clearly see where they were and if their neighbours were aware of the campaign. This also encouraged them to help to raise awareness in their own smaller areas, cutting down the amount of work that the core group had to do.

The maps that are being used by WCAG are available on our web site

<https://sites.google.com/site/wamboincommunications/home>,

and some examples are included at Appendix 3.

Email, building a website and using Social Media

To enable easy communications with your community it is worthwhile setting up a dedicated email account that anyone in the core group can use. This enables a 'branded' approach to communications and helps ensure there is a single record of email exchanges. If someone becomes sick or goes on holiday, then someone else can step in and continue any correspondence. Google 'gmail' allows you to setup a free email account and many people already have personal accounts like this. Your community group is no different especially when you operate as 'not for profit'.

Using free and open source tools together with public hosting sites, the core group can easily build a website that is accessible to anyone with internet access (noting that this may not be the whole community). Most localities however will have internet of some sort, even if it is slow, unreliable and with limited download capability. The main thing here is to make the site simple, fast and easily accessible. WCAG uses Google Sites for its website as this is free and relatively easy to set up and maintain. The web site is backed by Google Drive storage (<https://drive.google.com/>), which is also free. You will need to sign up for the service, but you can use the group email address to do this.

The website can become a useful resource as it will contain all the articles that have been written by your core group, links to articles in other publications and a record of actions taken. Your campaign may be a long process and it is easy to forget what has taken place and when. If you can refer to the website data it can be very useful as the months roll by. Once the site is made public, residents can keep up to date with progress and it is a useful resource for anyone who is new to the area.

Social media activity can be a double-edged sword as it depends on your area and the people in it. We have had good success with social media, but the downside is you can attract negative

comments. It can also attract comment from local communication businesses, which can be a positive or a negative experience, depending on their motives and if they perceive your group as supporting their commercial interests – or the opposite. You will have to be prepared to handle these comments, which can quickly get out of hand and divert from your aims.

Posters and Letterbox drops

Some areas have roadside notice boards when you enter the community and these are great locations for advertising community meetings. They have to be read and understood in a couple of seconds though, so should contain only simple information. WCAG have used this method to advertise community hall meetings, with great effect but you should not rely on this as the only method of advertising.

Letterbox drops can help to get to those people that don't look at the local newspaper, have no internet service or are not engaged in social media. Many people will not look at information put in the letterbox, but some will. Letterbox drops can be a simple message about a community event or meeting, or can be a newsletter specifically covering details of the group and its aims.

Delivering these can be time consuming and it is better if there are a few helping the distribution process. For WCAG we had over 900 addresses to deliver to and this took considerable time. However, as a result of that effort we increased our sign ups to over 500 residents on our list and more were signing up daily as the word got around the district.

An example of a WCAG letterbox drop is in Appendix 4.

Door knocking

One of the best methods of encouraging two-way communications is to speak to individual residents at their homes. This has the advantage of the resident being aware of the group and its activities, and the members of the group hearing first-hand the concerns of the residents. It has the disadvantage of being very time consuming, therefore each group member should only attempt a small number of these house calls.

Good organisation of this activity is paramount. Agree on a limited number of essential points to be presented and encourage interviewers to refer more technical details to the experts in the group.

In order to get a clear indication of the community's wishes, interview a representative sample or recruit more interviewers.

Gathering your local residents

Once you are confident that there is interest from a large proportion of your local residents, it is of benefit to get them together for a question and answer session. You will find that many of them will have the same questions or be relying on the same sources of misinformation and it can be useful to deal with these as a group.

A good community meeting can impress on your residents that you are serious and worthy of their support. An important point is to not only be visible but to answer questions confidently and explain the current situation clearly. Do listen carefully to the questions and the types of questions being asked. It is worthwhile writing down the questions as they can form the basis of future articles. If you cannot answer the questions fully then get a contact point to follow up with an answer at a later stage. Remember, you are unlikely to know all the answers, and people do tend to ask questions from left field!

If you are getting questions, then you are engaging successfully with the locals. If you appear to be fully engaged in the process and enthusiastic then this will tend to engender a higher level of support.

Make sure that you finish the meeting with a “call to action” – such as register, speak to your neighbours and have them register, call your local member, etc.

How to engage outside the community group

Once the community group starts to get established the weight of numbers can then be leveraged to expand the presence of the group. Once you have got at least 20% of your residents signed up and receiving your newsletters you can start to represent these people to engage with the Council, other community groups, media, federal, state and territory elected members, etc.

When interacting with these entities you can say, with confidence, that you are representing a substantial number of residents in the area and that they are very interested in achieving better internet services. You can act as a focal point for the residents to provide information to those entities and you can distribute information and their intentions back to the local residents.

By being the focal point for these communications, the group stays in the loop, can moderate some of the more extreme views of residents and help interpret the intent and understanding in both directions. In this role you will need to have a good understanding of the issues and the possible solutions. This may include high level costings, coverage (number of properties), general preferences for delivery and the acceptable level of costs per property.

Meetings

Meet and Greet Politicians

There are basically three methods of contacting members/potential members of parliament, state/territory and federal:

- At community events when politicians attend to 'meet' the electorate
- By attending the politicians nominated public contact address
- By writing to the politician at their registered address (this is covered in the next section)

Meeting at public events

The best time to attempt to engage with your local MP is when they are actively looking to speak to community members. Politicians are usually most visible and looking to understand the community needs in the period prior to election time. They are often also present at community events associated with opening new facilities or when presenting awards, grants, etc.

The easiest time is nearing elections as they want to meet and show support for the local community in return for support at the ballot box. If you have the support of a large number of residents then this can be a good time to approach.

They will often have stalls advertising their presence at local events such as school fetes and country shows. As mentioned earlier, having a well thought out, visible and visually interesting display stall for your group is beneficial and besides gaining visibility within the community can also attract the attention of your local members or their staff.

Take the opportunity to approach them and invite them to visit your display. If that isn't possible then have a prepared pack that you can give them to provide, not only background information, but what your plans and intentions are for the future. This can be similar to what you would hand out to locals, except that you may have to include more information about the location and challenges you are facing as well as evidence of the number of residents (constituents) that are engaged. Also, don't assume that a local member will necessarily be returned at the election. Make sure you also speak to other candidates to seek their support..

Try to arrange for a follow-up meeting at which you can discuss the issues further, especially if you were only able to talk with a staff member in the first instance. The close staff of a politician can be quite protective of them and it is better if you can talk directly to their boss at some stage.

If your politician is presenting an award or grant, then you must be mindful of not diverting the purpose of the gathering. If there is time at the end, then you may find an opportunity to approach them but there is likely to be a very constrained time frame for discussion. Again, have a prepared information pack that you can hand out and ask if you can meet again at a later time to discuss.

Attending politicians nominated public office

All politicians have offices within their electorate to allow the electors to gain direct access to them. These offices tend to be in the biggest city/town in the electorate, but hopefully they should not be too remote to your group.

If you cannot arrange a meeting with the member then try to do so with one of their senior staff members. If you can convince them that your project is worthwhile then you have more chance of getting directly to the politician. Ideally bring with you a letter or short proposal (in addition to other supporting material) seeking a face-to-face meeting at a later time.

Given the NBN is a federal program with SkyMuster as the stated solution your state/territory politicians are probably more worthwhile approaching as they are more locally focused and may have a better understanding of local issues and needs as well as having the ability to provide grants or assistance in other ways.

Council

Local councils may be able to assist the group in a number of ways such as:

- Contacts for other local groups that may be interested or which can provide help, i.e. access to community facilities and halls for meetings and presentations.
- Council contacts for gaining pertinent local information
- Assisting with process and planning permissions/exemptions for the project
- Letters of support to politicians

To this end an approach to the local council offices should be made. It would be preferable if the Mayor could be contacted and a meeting arranged for an information exchange. This can then set the scene for the assistance you are looking for from the council. It is likely that they will not be able to help financially, but assistance in planning, regulations and their interpretation, and providing vocal support for the groups effort cannot be over estimated.

Local community groups

Local community groups and associations can be a useful path to find contacts. There are often local councillors who are committee members of the community associations and as such already have a good network of contacts which can be leveraged. These groups normally advertise their meetings in the local papers, local Facebook or on community notice boards, so it should be easy to find when and where to meet them.

It is worthwhile giving a presentation on your group and its aims to your local community association. This will help raise the interest level and will let you explain what you are trying to do and what assistance you may require.

Letters and emails

Federal, State/Territory members

While the core group can concentrate on face-to-face meetings with the State Local Member, it is very useful if this can be bolstered by letters from local residents that are supportive of your group –

especially if they represent a local business. During the course of your project, it does no harm to regularly organise such letters as it reminds the Member that you are still active and that your community is still looking for a solution.

Many people find it difficult to write letters to politicians as they are not really sure how to construct it such that it will be read and understood by people in the members office and hopefully passed to the member directly. To this end WCAG wrote two versions of the letters, one from the WCAG group and one that a resident could use and put their name to or change to reflect their particular point of view. By providing example letters that we wanted sent we were able to concentrate on particular messages and ensure that this was delivered. Also, by reducing the difficulty for residents, they were more likely to take the time to print, sign and send them.

Two examples are given in Appendix 5. As can be seen, the content of the letters addresses the same issue but delivers it from different perspectives. The letters need to be short, approximately 1 page, as longer letters seem to turn the busy reader off and they stop paying attention or put it in the 'too hard basket'. Also, residents should be urged to personalise the letters if they have the ability to do so. This reduces the likelihood of them be regarded as a "campaign" letter and being dealt with by way of a standard (preprepared) response.

If you are going to do electronic letters then, due to formatting and the habits of email users, the letter needs to be very short, one screen worth of text, or as an attachment where a fuller letter can be constructed, but then you will have to provide the text for the email as well as the letter itself. Any attachments really need to be converted to PDF before being sent as if they are sent as 'word' documents they may not be readable by everyone and the format may therefore confuse the meaning.

Other media

It is also well worth the effort to contact the local radio, TV and newspapers to help in getting your message out. They are always looking for local content and in our case have proved to be really supportive in the process. Newspaper articles are the easiest as there is plenty of time to formulate what you want to say and editors are often looking out for content. Radio and TV can be interesting as this tends to be done live, or almost live, and you can get questions from 'left field' so the group members doing these need to be very familiar with the project.

There were many stories about the poor service from NBN during the time that WCAG has been operating. We were able to gain traction with the media as a dissatisfied group who were trying to improve their lot with broad acceptance of the need as a consequence of the extensive negative press on the NBN.

Local people like hearing or reading media stories about their area and not only can this improve your numbers but it also lends credibility to your cause.

Local\National Radio & TV

The local group does need to be up and going to work with radio and TV as you need to represent a significant number of local people to make the story interesting and worth the media outlet broadcasting it. The issue with using these outlets is that you are not really in control of the message as it can be edited before broadcast, changing the focus in ways you do not foresee. Make sure that the interviewer understands your project and how important it is. Requesting that they agree beforehand on the questions is not normally accepted. Nor is it often possible to ask that they portray the story in a way that you may wish. Consequently, your evidence and arguments need to be compelling and you should be prepared to challenge an assumption that they may make of the community's needs and reasons for better broadband.

Media interviews require good preparation with far more information than can be covered in the short time you are likely to get. You will need to demonstrate that you can talk clearly, authoritatively and project a positive outlook.

In the case of WCAG, the early exposure we had from an ABC TV report on our local news resulted in contact from several telecommunications companies that were interested in providing a service to the area. Although many of these were subsequently discounted, it did allow us to be more aware of what was available and also meant that we were better informed about the commercial aspects when it came to discussing the proposal with the NSW Government.

Having made contact with the local radio station, WCAG has been invited to give follow up interviews on progress several times.

Local newspapers

Local newspapers are often looking for newsworthy articles about the local area. A group trying to get better communications seems to hit the right buttons and as such each article we have written has been eagerly accepted. It is quite possible to use the same fundamental article for two or more newspapers with a few changes to try and target the particular audience each attracts. You can do an article to raise awareness of your group as well as a string of articles to raise the understanding of the underlying issues and the possible solutions for your area. The WCAG group has done both of these and been successful.

Conclusions

In conclusion, to be successful in your attempts to gain better internet access you will need to be more visible to government, the media and potential commercial partners. The most effective way is to become a group with a high percentage of local residents represented. Fundamentally, this gives you credibility in pursuing the groups aim in any forum. Most organisations you will want to know that you represent a larger group as it moves you out of the 'individual with a gripe' classification and allows bigger picture thinking to occur.

WCAG has been able to amass a strong community lobby of over 1000 residents, representing over 80% of the total residences in the area defined for the project. This has been critical to lobbying for government support but is also relevant to any commercial entity that may be interested in providing a solution.

Contacting politicians from all parties at election times and after has proved to be very worthwhile for WCAG and should also be for your group. Our project was ultimately approved by the NSW Government as it was classified as "delivering on an election commitment".

Following discussions and presentations with the politicians and local Council staff it was possible to build a possible future for the provision of a suitable network. With this information it made the group look professional when we were able to present supporting documentation with a logical layout, easy to understand and with a clear plan. This was so effective that the group were initially awarded a \$5M grant to help towards the implementation. This has since morphed into the Gig Economy process being worked on by the NSW government which has bipartisan support.

Appendices

Appendix 1

Initial articles in local newspaper

Wamboin Whisper, April 2016, Page 20 of 28

NBN in Wamboin and Bywong

by Paul Brugman

Most of the people in Wamboin will have experienced the poor internet speeds, continual dropouts and general lack of consistent services from Telstra.

After fighting with Telstra for 11 months, contacting the Communications Ombudsman on 3 occasions, having multiple visitations from Telstra technicians, finding out what the weather is like in Manila and for security reasons, regurgitating my birthday, name and address at last count 87 times before even being considered a valid Telstra client, my computer checked multiple times, ensuring the phone line was plugged in (at least 30 times), had I gone to the Telstra web page and diagnosed the issues, (dahhhhh no.....I don't have any internet), had I done any speedtests (dahhhhhh no.....the internet is so slow, the speedtests timed out). I'm now best friends with several technicians who drop in most Fridays for an afternoon beer and natter about the good old days and the benefits of analogue technology, and can now speak fluent Filipino, (I would have preferred Spanish but there's no help desk in Madrid).

A short term fix was draping new line some 50 metres from a junction box over my fence, over and through several trees and bushes and then back into the ground. This worked well until a kangaroo entangled itself and made of with the new line. I eventually had my phone line replaced with new 10 pair line, my router was replaced, and the sun was shining in Mecca.....WHOAAAA..... 10 Mb/sec, Netflix here I come ,..... I can watch Netflix on my laptop, my smart TV, my phone and my Ipad all at once, I can download all my updates, some of them 2 years old. I can upload, download even sideload (something that only people with 10 Mb/sec can do). I must ensure that I take up all the bandwidth, don't want the neighbours getting uppity and thinking they can also download stuff.

Yes to good to be true, after several months my linespeed is back to its old self (less than 1500 Kb/sec) so I started ringing Telstra again. The comment I received from the help desk..... a battery needed replacing in the exchange! I'm just astonished. Watched some ads on the telly from NBN Co, "Ring your provider, request NBN", so I enquired about NBN. There will be NO, NONE, NIL, ZERO, ZILCH NBN optic fibre in Wamboin, ever, ever, ever unless some falls of the back of a truck. I can see Telstra tower from my place, my property is <15km as the crow flies from the capital city of Australia and I cant get reasonable internet let alone NBN.

Good news, the company I work for in Wamboin has a new Telstra Accounts manager. The information she provided: Wamboin has been targeted as NBN via Satellite. Currently, the NBN via satellite is fully subscribed – there are no spare ports. What needs to happen next, is the customer needs to register their interest with the NBN CO – see following link. <http://www.nbnco.com.au/connect-home-or-business/information-for-home/satellite.html>. Once the NBN CO have enough interest, then they'll deploy another satellite.

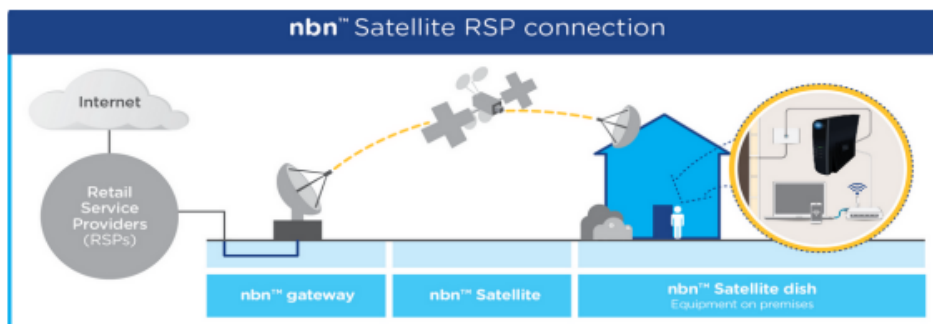
What do you mean oversubscribed? Has anyone in Wamboin been notified that they should subscribe? Further queries have indicated that if we can get at least 50 people registering interest, then we are considered a VALID NODE. NBN Co will then deploy another satellite. Furthermore your name will go into the draw for Australian of the Year. At \$100 million dollars per satellite, what are the chances. And as the name given to this satellite NBN technology is called SKY MUSTER, your new title ON YOUR PARTICIPATION CERTIFICATE will READ: VALID NODE-SKY MUSTERER FIRST CLASS "Bill Smith" REGION-REMOTE

Yes, that's right, NBN CO have nominated the Wamboin area as "REMOTE", thank god we don't live way out in BYWONG (do they have electricity even?). Note the region on the screen capture when registering

On a more serious note, please register for NBN at the above link, even if you never intend to use it. I'm hopeful one day to be considered a "VALID NODE" and get my PARTICIPATION CERTIFICATE. By the way, this all has to be in place by 2020. This is better than the VFT proposed by Julia Gillard.... 53 years by her estimation wasn't it.....not joking. OK I LIED ABOUT GETTING IN THE DRAW FOR AUSTRALIAN OF THE YEAR, BUT EVERYTHING ELSE IS NO JOKE.

Selected address

Address	Let 30, Norton Road, Wamboin, NSW
NBN Co Location ID	LOC00012312406
Access technology	Satellite
Service class	7 - The address is planned to be serviced by satellite, but is not yet serviceable.
Planned serviceability date	Not available
Region	Remote



Sky Mustard

I have recently been notified by NBNco that the new Sky Muster satellite service was available at our address, Norton Road, and pointed me to providers in the area. Great, I thought, must check this out. However, having done so I am highly disappointed at the plans being made available, the costs and the caveats regarding speed and 'fair use'. I have taken this up with NBNco but they keep responding with 'half truths' and marketing hype.

We currently have an ADSL 1 connection which provides 3.5Mb/s download with a 100GB plan for around \$70/month bundled with a phone. The best NBN plan provides 'up to 12Mb/s' and 60GB of download during peak hours and this for \$140/month. There is no bigger plan available and some have 20Gb/month.

The literature is misleading as they keep on saying I can get 150GB/month, which is true, but..... I can get 60GB/month during peak hours and 90GB/month in off-peak hours. The issue is that peak is 7am - 1am and off-peak is 1am - 7am. So for 18 hours per day I am in the peak period and only 6 hours per day am I in off-peak. This means that I will effectively get half of my current download for twice the price.

The other items of interest are that 12 Mb/s is the maximum speed with the rider that you are actually unlikely to ever get this speed due to location, weather, equipment, other users, etc, etc. and that NBNco have a 'fair use' policy that seems to be very vague and contradictory. If you breach the 'fair use' policy NBNco will cut your access speeds to ISDN speeds, i.e. 128Kb/s for the rest of the month. This 'fair use' policy can kick in when you have used 90% of your monthly download, when you have exceeded a certain limit per day (it is not defined what this limit is) or if you seem to be using more than your 'fair share' of the capacity. At 128Kb/s the internet would now become unusable and many pages, particularly government and banking, would timeout before ever displaying.

I have been checking NBN access and our nearest town Queanbeyan (20km by road) has NBN fibre that allows connections at up to 12M/s with 200GB peak download for \$59.90 per month. I cannot even get this 'bottom end plan' on the Sky Muster NBN as the max on all plans is 60GB during peak and the minimum price is \$140 per month. So it is twice as expensive for half the data using the satellite service.

As a government organisation which is being sold as 'levelling the digital divide' for which all tax payers are paying shouldn't this be the case? In fact NBNco seem to be creating a 'digital divide' by ensuring a publicly funded, i.e. tax payer funded, organisation caters only for those in towns whilst ignoring the needs of those not in towns. To lower the 'digital divide' all NBN plans should cost the same to the consumer, so a 100GB should cost the same regardless of delivery technology. If 1000GB, any time, is available (iiNet will provide this for \$79.99/month) via fibre at 25Mb/s any time, then this should also be provisioned on all technologies.

Why is NBNco continuing to sell the public incorrect information? The Sky Muster satellite is a slap in the face, but is being sold as a great saviour. If the plan prices were the same and there was no random (at NBNco's unspecified/unclear 'fair use' policy) throttling then it may be a good thing. - John Gough, Norton Road

Wamboin Internet Access – NBN Satellite Disaster

by Olaf Theden, Norton Road

Following on from Paul Brugman and John Gough's recent articles in the Whisper about the state of Wamboin's internet access (or lack thereof), the following may be of use to those unfamiliar with what is happening communications wise in our area.

It may come as a surprise to some, but we have been put onto NBN's satellite service area, and since the satellite is now up there, we are now able to get connected to the NBN. This is where the fun stops. The NBN satellite offer may well be a good deal when you are the only home in the middle of an outback property the size of Denmark, but it certainly doesn't come close to what we *already have* and what a community so close to the Canberra CBD would expect in today's day and age. Further, with the advent of the NBN offering connections to the satellite service, it is only a matter of time before the old Telstra exchanges will be shut down (NBN assures me that they won't be *forced* to shut down, but what shareholder owned company keeps their antiquated/obsolete equipment running when there are only a handful of customers left connected on it?). This means the end of ADSL in our area is coming!

Further, the surprise that Wamboin is considered a satellite service area is put into perspective when it shows up as number 10 in the list of 11,517 satellite areas across the country¹ in terms of number of households, and 3 of these top 10 are Islands far from the mainland, and 2 Tasmanian locations have already successfully lobbied the Government for inclusion in fixed line NBN offeringsⁱⁱ. (For completeness, Sutton is #29 on this list and Bywong is #35.) There are 635 households in Wamboin, and a further 489 in Sutton and 462 in Bywong. In general that means our area is highly populated and on the border-line between getting a different NBN technology choice (but this won't happen without community action, and not likely within the current NBN rollout!)

This means, that collectively, we will be burdened with a slow, and very expensive communications option (SkyMuster NBN satellite) when we are very close to the civilised world of Canberra and Queanbeyan. For a typical Wamboin family, who doesn't have access to free-to-air TV, no mobile reception and is therefore bound to whatever internet we can get for streaming services, we use between 250GB and 500GB of data per month via ADSL2. For those that like numbers and tables here is a bit of a comparison:

Technology	Download Quota (Normal living hours)	Speed (Down/Up)	Cost (p.m.) (including line rental if required)	Comment
Old Technologies currently used in Wamboin but which may reach their use-by period sooner than we expect				
ADSL2	Unlimited	8-12Mbps/1Mbps	\$89-\$110	This should be most people in Wamboin, though speeds and data packages may vary.
ADSL1	500GB	3-8Mbps/0.3Mbps	\$127	If you are still on ADSL1, you may find you can change to ADSL2 but you have to ask for it (again every few months) and be with an ISP which gets its backhaul through Telstra's infrastructure.
New Technologies currently enjoyed in Canberra and Queanbeyan				
VDSL2	1000GB	80Mbps/30Mbps	\$79	Cheap and fast
Fibre NBN	Unlimited	100Mbps/40Mbps	\$110	Fast, resilient and future-proof
New Technology that we could be getting (but only with some community effort)				
Fixed Wireless NBN	Unlimited	50Mbps/20Mbps	\$125	Getting NBN to privately reconsider our area would have upfront cost implications (just for the quote part) as well as leading to upfront costs to pay for the "additional hassle" of providing the service (could be thousands of dollars per household). Another option may be political lobbying.
Fixed Wireless via Lightning broadband (Melbourne based) ⁱⁱ	Unlimited	100Mbps/100Mbps	\$120	Requires at group of residents to register their interest (as per previous Whisper article by Paul).
Fixed Wireless via the Signal Co (Canberra based) ⁱⁱ	500GB	25Mbit/10Mbit	\$89.95	Requires at group of residents to register their interest.
New Technology that we will be stuck with if we don't do anything				
Satellite NBN (SkyMuster)	60GB	25Mbps/5Mbps	\$189	Yep, that's right. This costs about twice as much as other plans, and nearly a tenth of the download data allowance. There is no way of getting more data, and NBN considers downloads in excess of 75GB (after being shaped to 128kbps) to be a breach of fair use. Also, the high latency of a satellite connection will render some internet services unusable.

As you can see in the table, we will soon be paying about twice as much for an NBN service and getting nearly one tenth of the required download capacity. While not everyone will be downloading as heavily, you will find that if your current connection is in the 3-8Mbps range of ADSL1/2 and you then get 25Mbps on Satellite, your download quota can disappear in no time at all (and you will be back to dial-up speeds until the next billing cycle).

Unless you wish to be left in the digital dark ages, this calls for urgent community action! There are two ways forward: either lobby NBN (probably via Ministers of Parliament) to change their mind on Wamboin's technology choice (like Tasmania's west coast already has), or engage a private company (eg. Lightning Broadband or Signal Co) to setup shop here in our district. The choices require a bit of community action, as either would require multiple interested parties to show their support and/or outrage at being left for dead in the alleyways of digital communications doom.

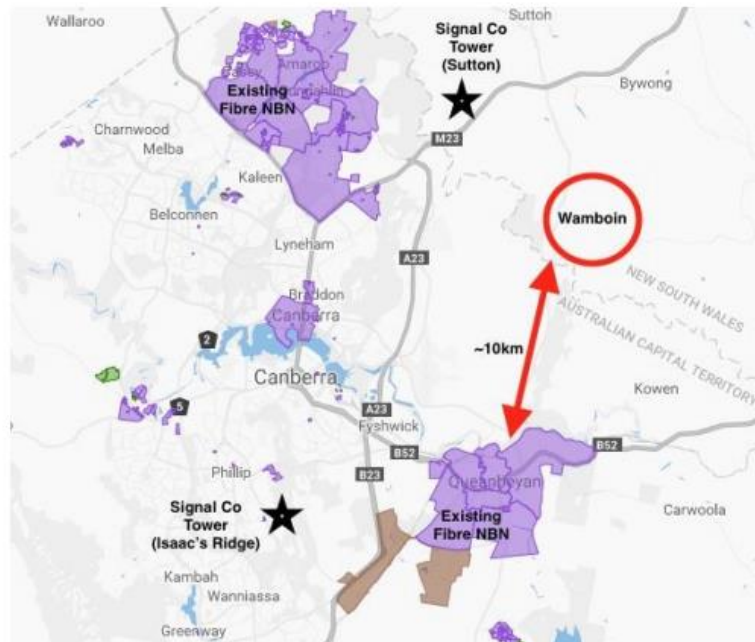


Figure: Current state of Fibre NBN rollout in Canberra and Queanbeyan as well as current Signal Co wireless tower locations. Note that Wamboin, though in close proximity to existing fibre NBN installations has been relegated to satellite NBN only at this stage.

Notes i, ii, iii and iv in the text and table are:

- i <https://www.finder.com.au/nbn-who-gets-the-most-sky-muster-satellite-coverage>
- ii <https://delimiter.com.au/2016/06/14/coalition-dumps-satellite-ftn-nbn-tasmanias-west-coast/>
- iii <https://www.lightningbroadband.com.au/>
- iv <https://thesignalco.com.au>

Appendix 2

A series of informative articles for a newspaper

Article 1

Internet access 101 – Data Limits.

Remember the good old days of 2.4Kbps modems and dialup, before the internet was pervasive? Well perhaps not, but you may remember Maestro and their modems, as they were built on Macs Reef Road near the Federal highway. We used to get 56Kbps access to the internet at that time, then we doubled our speed to ISDN and got 128Kbps, in both directions! At this time you paid for access to a service provider that had the capabilities you wanted, the only consideration was trying to get a modem with maximum speed.

Then ADSL arrived. Much higher speeds with the possibility of up to 8Mbps and at this time, limits on the amount of data you could download became a reality.

Now we get to NBN and broadband. This can be delivered by cable, both copper and fibre, wireless and satellite. With this introduction a subtle change occurred. You were now charged not only for the speed at which you wanted to connect., but also the data you used. Both of these have caused issues for end users, but here I will only cover data usage, where high costs can be incurred if you breach your purchased data limit.

Questions to ask your provider and why

When you look at a plan you should ask:

- What data limits do I have and when can that data be used

This is particularly relevant to satellite as data plans of up to 250GB per month are being offered, but this is typically made up of a peak and off-peak usage, in this case, 60GB peak and 190GB off-peak. Did you know that the off peak is between 01:00 and 07:00 in the morning, peak is from 07:00 to 01:00, so six hours off peak and 18 hours peak. Guess when you will normally be using the internet? Also, if you are unlucky enough to have a slow connection then you may not physically be able to download 190GB in the 180 hours (30days x 6hours) you are allowed!

Say you go to a gym and sign up for their special deal, giving you 25 hours of usage each month for \$65. Sounds good eh? Then you read the fine print and discover that you can only go there during the day for 6 of the hours and the other 19 hours can only be used in the very early hours of the morning. Would you be happy? I wouldn't.

Another 'gotcha' may be the word 'unlimited'. You need to understand what it actually means from each provider. In some cases they say it is 'effectively unlimited', as the amount of data seems huge, i.e. 1TB (1 TeraByte, or 1000GB, or 1000,000MB) and you think you could never exceed this. If you do the sums you will find that in about 19 hours you can download 1TB at 25Mbps. So, you could run out of your 'unlimited' plan within a day, particularly if you are updating Windows 10, Mac OSX or iPhones and with a few teenage children streaming videos and playing games. Unlikely you may think, but with the advent of 4K TV and Microsoft and Apple wanting you to update each device individually, and schools using interactive media for homework, etc. it is quite possible to run out of download, particularly if there is a reasonable access speed.

Next week I will cover the topic of speed restrictions and what to watch out for.

Article 2

Internet access 102 – Speed Restrictions.

Last week I wrote about data limits, this week I will cover speed issues.

When ADSL became available, the providers relied on Telstra for the exchange equipment and you were limited in speed by the distance from the exchange. When improvements were made to ADSL you could make use of this just by changing your modem, assuming Telstra upgraded the exchange. There was no price difference between ADSL and ADSL2+, but there were potentially speed differences with ADSL2+ giving up to 24Mbps, assuming you were camped on the exchange with a VERY short cable.

With the introduction of NBN, you are now charged not only for the data you use, but also the speed at which you want to connect and often, you are paying for a higher speed than you are able to connect at. The providers, until very recently, just advertised the maximum speed it was theoretically possible to connect with, and made it sound as if that was what you would get.

Recent ACCC action against Optus and Telstra has changed that practice, as they now say ‘Up to’ in the speeds and in the small print blame the users equipment, for which they cannot be held responsible. Sounds OK, but in truth it is quite often the provider throttling the connection so that you don’t overload their network.

Questions to ask your provider and why

When you look at a plan you should ask:

- What speed will I get if I buy X Mbps?
- What is the guaranteed download/upload speed?

Regarding speed, if you get offered ‘Up to’, or guaranteed ‘X% of maximum speed’, then think in terms of going to fill up your car. If you went to a service station and they sold fuel in a similar manner you may want 20 litres, but when you finish pumping and have paid for ‘20 litres’ you find that you have actually only got 10 litres, would you be happy? I know I wouldn’t. In fact they would be in breach of quite a few consumer protection laws in doing so. For some reason the internet does not yet, apparently, have this protection. So if you are offered a 25Mbps plan with a guaranteed 50% speed, in reality you are paying for 25Mbps and may only be getting 12.5Mbps or less! Does this seem right, or should you only pay for what you get, i.e. half the amount?

Further food for thought

In December 2017 TPG admitted selling internet services that could not be delivered, in this case plans for 100Mbps download and 40Mbps upload. They knew that the customers may not be able to get even half of that rate. The ACCC stated that “This likely contravened the Australian Consumer Law (ACL) by engaging in misleading or deceptive conduct and making false or misleading representations”.

The ACCC said “This is the third major internet provider we have taken action against in the past few weeks. Internet service providers must take responsibility to ensure that their customers get the promised speeds that they pay for”.

If you find yourself in a similar situation, having paid for a speed and finding that you are getting much less, then you should raise the issue with your ISP, then Trading Standards and possibly the

ACCC. If enough people complain then maybe something will be done to stop these fraudulent practices and bring the same levels of protection to the consumer that we have come to expect in other areas.

Article 3

Internet access 103 – Contention Ratios.

I have written about data limits and speed issues so I will now cover internet access speeds as opposed to connection speeds. They sound similar and can seem similar as after all you either get good speed or you don't, right? Well yes and no.

There are two aspects to the speed you see, one is the speed from your device, PC, Phone, Tablet, etc. to the Internet Service Provider (ISP) and the other is from the ISP to the internet. In the previous article I covered the speed to the ISP, which if they had all the content you wanted would be fine, but most of us use the ISP to get to the internet and so the second speed becomes important.

Questions to ask your provider and why

When you look at plans you should ask:

- What contention ratio do you aim to provide?
- What contention ratio do most people get most of the time?

Now, what is contention ratio? Well it is the number of users trying to use the same service at the same time and having to share it with each other. To help, think about the road system, you use the road to get from your house to Canberra. Now in the old days you would have gone slowly along a gravel/dirt road but now we have bitumen roads, with theoretical speeds of 100km/h and you will have noticed that the volume of traffic varies during a 24hr day. If you go in at 08:30-09:30 you will see lots of other vehicles, if you go in at 01:00 you may not see another vehicle. Even with the speed restrictions you will notice that you can get to Civic in about 30 minutes at 01:00 and an hour at 09:00. Why? Well you are sharing the road with others and not everyone is going to the same place as you.

The road has a contention ratio, that is the number of vehicles trying to use that section at the same time. The higher the number the more likely there is to be a slowdown. You can increase from 1, you, to probably around 10 before you start to notice that you speed up and slow down. When the number of vehicles increases the variability of speed increases with a general trend to going slower. At some point you will find yourself sitting in a traffic jam, stationary.

So the idea is to find out how many people are trying to use the service at the same time, i.e. you alone, contention ratio 1:1, you and 9 others, contention ratio 1:10, you and 99 others, contention ratio 1:100. Some ISP's have contention ratios around the 1:150 mark. The lower the ratio the better, a business may want a 1:10 to ensure they have good speed all the time, a home user may accept 1:50 so that most of the time all is OK.

The other aspect of this is what ratio are you getting when you want to use the internet. If you use it mainly between 16:00 and 22:00 (when the rest of the community is using it) then you will want a target ratio around 1:20-1:50, if you use it mainly between 01:00 and 07:00 then you would be happy with 1:150 as most other users will be in bed!

The net effect of all this is that you get high speed connection from your device to your home router (ratio between 1:1 and 1:10 depending on how many users are in your family), you get medium speed from your router to your ISP (ratio between 1:1 and 1:30 depending on when you use it) and you get slow speed from your ISP to the internet (ratio between 1:1 and 1:150, any more than this and you will get no service!). The ISP should be able to tell you what the peak times are and what the ratio is at this time.

Article 4

Internet access 104 – Symmetry.

This article will cover a new, well relatively new, approach to the delivery of internet services, namely the symmetry of the connection. We didn't really think too much about this prior to the introduction of ADSL. When we used Maestro modems (remember them?) you basically bought the modem as a 9.6Kbs (Kilo bits per second), 19.6Kbs and most recently, 56Kbps. These modems transmitted data at the advertised speed in both directions, assuming your phone line was of good enough quality to allow it. We then moved on to ISDN, a modem with 128Kbps speeds and this was also symmetrical.

Then ADSL (Asymmetric digital subscriber line) appeared. By reducing the upload speed it was possible to increase significantly the download speed. At the time this was introduced most users of the internet were consumers, i.e. they downloaded far more data than they uploaded so this was a definite advantage. We moved onto ADSL2 & ADSL2+ which further increased the speed. ADSL started at 8Mbps down and 1Mbps up and got to 24Mbps down and 3.3Mbps up, although very few in the local area got close to the higher speeds.

Then the NBN came along. This can provide Fibre to the Premise (FTTP), Fibre to the Node (FTTN), Fixed Wireless or SkyMuster satellite service. All of these new broadband connections, apart from satellite, are symmetric by nature, i.e. the download and upload speeds are the same. However, it would appear that the use of ADSL has conditioned us to expect better download than upload speeds, so we don't question why we are getting an asymmetric service over a symmetric delivery method, even though there is no technical reason why you cannot have a symmetric service. However, because the ISP's want to maximise the number of customers that can use their service, they set a limit on the speed of upload, assuming that most of their customers are downloading rather than uploading. While this may be true in the short term, it does not bode well for the future.

In the modern age we are now using live video, Skype, WhatsApp, Facetime, etc., we are trying to use the 'Cloud' for storing our pictures and files and are using 'Cloud' applications, think Microsoft Office 365. All of this really requires the use of symmetric connections where the download and upload speed are the same. If not you will get your data from the 'Cloud' in seconds and put your data (pictures, etc.) into the 'Cloud' in minutes and hours (depending on the upload speed).

Questions to ask your provider

When you look at plans you should ask:

- What is the download speed?
- What is the upload speed?

Understand what you are being told and think about how you want to use the internet now and in the future. I can say that based on history your internet usage will increase dramatically, and in

particular, your uploads will increase massively. The best solution will be a symmetric plan so that you will have as painless a future as possible, sadly, this is a pipe dream unless you live in a city.

One other thing to remember, most of the appliances, TV, Fridge, Cooker, Vacuum cleaners, etc. are all becoming Smart (not really sure about that as Smart is something quite different to Chatty) and will want to talk/upload to the internet to provide 'valuable' (?) information to you, i.e. you can check on the temp of your freezer whilst at work and how much of the floor has been vacuumed! Very essential to a stress free work day.

Article 5

Internet access 105 – Delivery technologies.

This article will cover the different delivery technologies that can be used to access the internet.

At the moment we are in the middle of a major transition from ADSL (Asymmetric Digital Subscriber Line) to the various offerings including wireless, mobile data and fibre (FttP, FttB, FttC, FttN).

ADSL uses a modem to send a digital signal down an analog copper wire, your phone line. This signal is at a higher frequency than your voice signal which is why you need a splitter on your line to allow your phone to 'share' with the ADSL modem, otherwise you get a high pitched squeal.

Wireless can be mobile or fixed. We are all familiar with WiFi in the home, at work and in general public areas. This is mobile or omni-directional wireless, where the wireless signal is broadcast in all directions by all devices, including the WiFi hub. This means that the range is very limited so you don't have to go far before you lose the connection. This is how a mobile phone works, which is why so many towers are needed to give a good coverage. We are also familiar with wireless broadcast as that is what is currently used to deliver your radio and TV. The more information that needs to be sent the more sensitive the signal is to distance and intervening objects. A radio will work well in most places, but the TV quite often requires a directional antenna AND a signal booster to get an acceptable picture. This is a one way flow, i.e. from the broadcaster to you.

For internet access you need to send information back to the broadcast station, so fixed wireless is used. A special antenna is mounted on your roof, pointing at the broadcast location. It is used to receive a weak signal, boost it so that it is usable and send a signal back to the broadcast point. The broadcast location may have an omni-directional antenna or, more likely, directional antennas that cover a segment of a circle, i.e. a quarter or a sixth. This allows for a stronger signal to be sent in specified directions which then allows for greater distances.

Next we get to Fibre, and this can be delivered to your premise (FttP), to the apartment basement (FttB), the curb (FttC) or the Node (FttN). FttC and FttN will use the existing copper phone line to get from the curb or the node to you. This will be limited to around 100Mbps unless the copper link is very short. There are also two types of network available with fibre, Active and Passive. Active networks require the use of a powered router at each 'node' (think your home WiFi, ADSL modem or Wireless device), which allows traffic (data) to be directed to the device that wants it. Active networks are more expensive but they ensure that the 'last mile' is handling only data for that particular end point, so you can get your 1Gbps speed as only you will be using it.

Passive networks use un-powered devices at each 'node'. These devices just send all data to all end points and rely on each end device to filter out the data meant for them. Passive networks provide less and less real data to each user as the number of users increases, so with 1 user you get 1Gbps,

with 10 you get 100Mbps, with 32 (the current planned max NBN sharing) you get ~32Mbps. See where this is going?

In the current environment only active fibre networks will deliver the fastest speeds into the future. In a few years when we will need 100Mbps or more, all the other technologies will need to be replaced.

Appendix 3

Area maps

The following are two different representations of the WCAG area. The first just depicting the area with all the known sub-divisions marked on it, the second showing the approximate number of properties that have signed up in different areas.

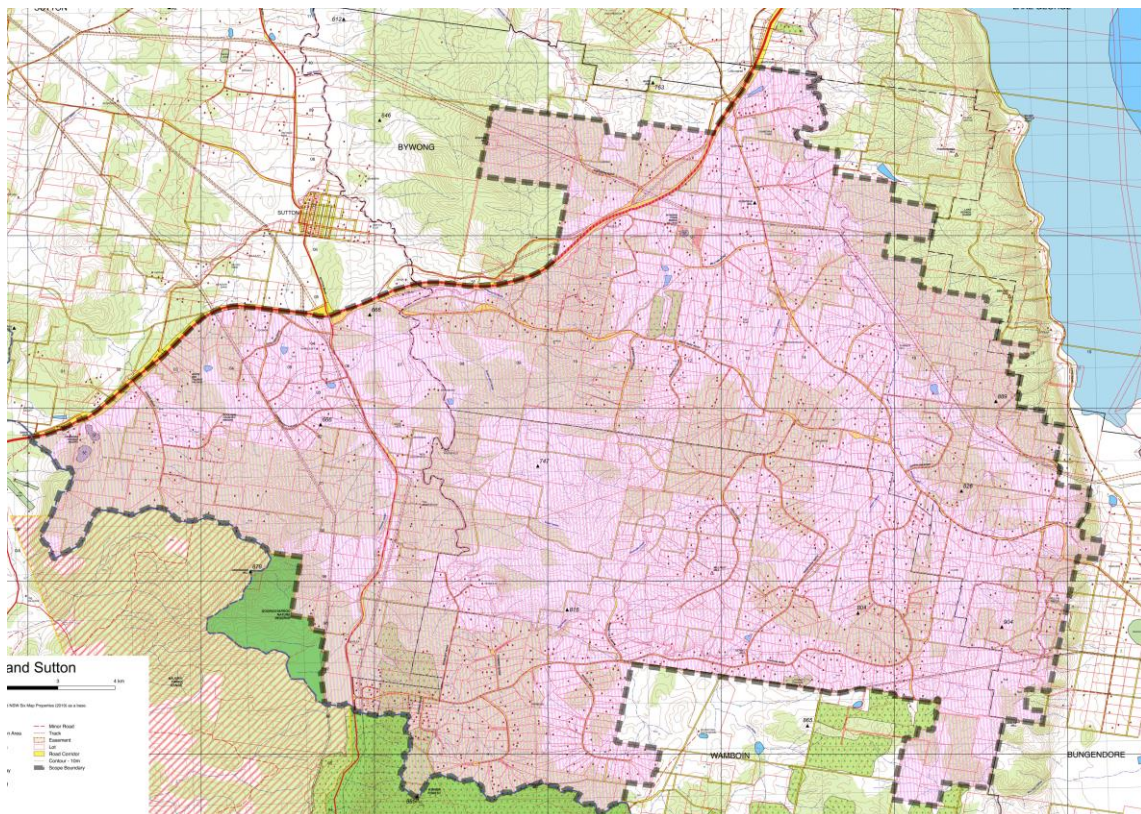


Figure A: Coverage map with sub-divisions shown

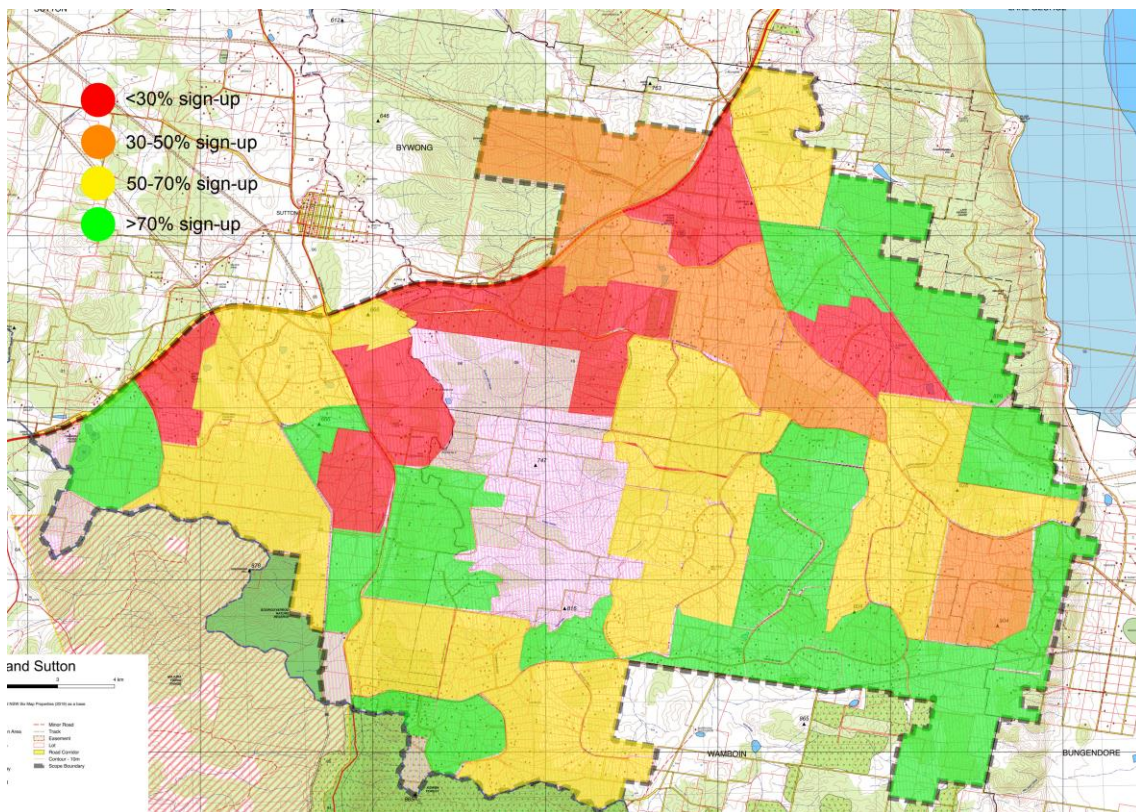


Figure B: Heat map showing areas of interest

Appendix 4

Example letterbox drop

The following text is an example of a letterbox drop leaflet used by WCAG. This was printed, two to a page, on A4, then cut in half and dropped in letterboxes. The contents would need to be changed to match your local information, but a similar bullet point list of major points can be used.

NBN Smoke & Mirrors

- The Wamboin telephone exchange is obsolete, Telstra have no parts for it. There are currently several homes without a land line because they cannot fix it.
- When this exchange fails completely, likely at the next major storm, none of us will have a land line connection or internet (ADSL)
- Telstra will have to supply you a mobile handset for phone, but there is no requirement for internet access so you won't get it.
- Currently your alternatives are, NBN satellite (~20 day turn around) or a wireless connection (turn around is dependent on demand)
- Satellite NBN services typically cost more than 4x the comparable ADSL or Fixed line NBN service, or up to 10x the cost for high data requirements.
- Maximum upload and download (combined) data plan is 70GB per month. The Australian average non-NBN usage is 82GB and NBN usage is 112GB. This has been rising about 50% year-on-year!
- Current capping, irrespective of plan, is around 30GB per month. So even if you pay for more than this you are unlikely to get it.

- If NBNco believe you are using more than your 'fair share' they will slow your connection to ISDN speeds (1/200th the top speed of ADSL) for the next 4 weeks. 'Fair share' is not defined.
- The Productivity Commission is trying to decide if satellite NBN is good enough to replace your land line. If they decide it is, then Telstra no longer has to maintain any other service including mobile.
- Satellite NBN has major latency issues when making phone calls, stuttering and over speaking making conversations difficult and frustrating. Facetime and Skype will be unworkable.

So how can you fight for better communications in the Wamboin, Bywong and Sutton areas? Sign up to the Wamboin Communications Action Group by emailing: wamboincommunications@gmail.com

Appendix 5

Letters to local political members

From WCAG

Dear Minister,

We, the Wamboin Communications Action Group (WCAG) are writing on behalf of our community to ask for your support in relation to the inadequate Internet service available in the Wamboin/Bywong/Sutton rural residential area of NSW - just 10 kms from our Nation's Capital. There are well over 4,000 citizens and more than 50 small businesses in this relatively small region. Notwithstanding the density of residences and proximity to Canberra, we have only been offered the SkyMuster satellite based NBN service. It is certainly not a large scale farming or remote region – where SkyMuster might arguably be the only practical option.

SkyMuster is neither appropriate for our region nor adequate for the needs of residents and businesses here. While it may be notionally faster than ADSL, it costs two or three times as much for a fraction of the data download allowance. It has also proven to be very unreliable – something that even NBN Co have acknowledged. As a consequence it fails to address our communities basic broadband needs, as well as not resolving the long-standing communications reliability issues the community suffers from.

With the Internet now expected to provide many services such as education, health, banking and entertainment, the situation in our area is rapidly becoming critical, as many of the residents cannot currently use these services and will struggle to do so if SkyMuster is their only option.

WCAG has spent the past two years researching viable alternatives (See <https://sites.google.com/site/wamboincommunications/home>). More recently WCAG has been working with SmartFarmNet Pty Ltd - which is proposing to build a rural fibre network to cover our region. SmartFarmNet has obtained a carrier license and has completed its business case – including a network design to connect 960+ homes. They have also put in place subcontract arrangements for data services, construction, network build, maintenance and support.

WCAG's assessment of the business case, together with feedback from residents, has shown that SmartFarmNet's proposal is certainly viable, with the running costs and resultant user charges well below that of SkyMuster (with far greater data, speed and reliability). However,

there is one aspect of the project that is proving to be a challenge. An extensive community survey has confirmed that more than 60% of residents are willing to commit to this service and of the remaining 40%, many are just waiting until the network build starts before doing so. With an initial 60% take up rate the initial build cost is much higher than anticipated, in fact much higher than many of the original 60% can afford. Experience overseas has shown that once a network of this type is commenced, adoption rises to over 80% and we are confident that the same would be true in this area.

As a consequence, WCAG is asking for your support of \$2m in financial assistance – representing approximately 50% of the cost to connect 1,000 residences in our community. We believe there is significant benefit, not just for our community but also for government, that will arise as a consequence of this.

Given recent information in the news¹ about the cost per premise for NBN fixed wireless, around \$3700 per household, and government losses of \$110 per household per month for satellite services, our need for financial support for the install of a fibre to the premise network is good value. It negates our need to move to NBN SkyMuster, saving the government in excess of \$1.7M pa., while concurrently reducing the congestion on that service for rural and remote citizens that literally have no other option. It is also, at a per household cost, significantly less than NBN fixed wireless, even though we would be getting fibre to the premise.

We also note with interest that the government is proposing to spend \$136 million to fund the laying of fibre cable to PNG and the Solomon Islands and wonder why they cannot use some of that money to improve communications closer to home.

There is absolutely no doubt that there is considerable dissatisfaction with the current state of communications in this area and that this issue will feature strongly in the minds of local voters at the forthcoming Federal and State elections.

We are hoping you are concerned enough about the quality and extent of services offered to residents in this community that you will support us in achieving our goal. We look forward to hearing from you about how such support will be facilitated.

Yours sincerely

Executive Member,
Wamboin Communications Action Group

¹ <http://mobile.abc.net.au/news/2018-06-01/nbn-fixed-wireless-congestion-upgrade-delay/9770802>

From resident

Dear Minister,

I am writing to ask for your support in relation to the inadequate Internet service available to me. I live in the Wamboin/Bywong/Sutton rural residential area of NSW - just 10 kms from our Nation's Capital. There are well over 4,000 citizens and more than 50 small businesses in this relatively small region. In spite of the density of residences and proximity to Canberra, we have only been offered the SkyMuster satellite based NBN service.

This service is neither appropriate for our region nor adequate for the needs of citizens and businesses here. Those of my neighbours who have tried to use it have found that, while it may be notionally faster than ADSL, it costs two or three times as much for a fraction of the data download allowance. It has also proven to be very unreliable – something that even NBN Co have acknowledged. As a consequence it fails to address my basic broadband needs, or resolve the long-standing communications reliability issues this area has suffered from.

With the Internet now expected to provide many services such as education, health, banking and entertainment, the situation in our area is rapidly becoming critical, as many of us cannot currently use these services and will struggle to do so if SkyMuster is our only option.

Rather than simply accept SkyMuster, our community, via the Wamboin Communications Action Group (WCAG), has spent the past two years researching alternatives (See <https://sites.google.com/site/wamboincommunications/home>). More recently WCAG has been working with SmartfarmNet Pty Ltd - which is proposing to build a rural fibre network to cover our region.

WCAG's assessment of their business case, together with the feedback from residents, has shown that it is certainly viable, with the running costs and resultant user charges well below that of SkyMuster (with far greater data, speed and reliability). An extensive community survey has confirmed that more than 60% of residents would be interested in committing to this service.

Unfortunately, the initial build cost (and resultant installation fee for residents) is significantly higher than originally estimated and represents a major hurdle. As a consequence, I am asking for your support of WCAG's petition for financial support to cover a share of the costs to connect the first 1,000 residences in our community.

There is absolutely no doubt that there is considerable dissatisfaction with the current state of our communications and that this issue will feature strongly in the minds of myself and fellow electors at the forthcoming Federal and State elections.

Yours sincerely

Article 6

Internet access 106 – Future Proof.

This is the last article in this short sequence and covers the future usage based on a knowledge of how things have changed over the last 50 years.

My first introduction to computers was at school using a teletype (a very basic form of electric typewriter) an acoustic coupler (this made the squealing sounds needed for digital information in an analogue world) and a phone handset that could be placed, very carefully and precisely, into the foam cups of the acoustic coupler. This allowed us to connect with a massive Mainframe (you can see the sort of thing at Tidbinbilla tracking station, they have an example of a 1970's mainframe there) and do simple physics calculations (do you remember doing the laws of motion and finding how far you could throw a ball, dependant on the speed and angle to the horizontal you threw it?). This was VERY exciting and it would print out the flight path of the ball on z-fold, green striped paper as a set of asterisks! Wow!!!

Things have progressed a little since then, not only in the miniaturisation of computers but also in the way they communicate with us. We have moved on since we used 2400bps (bits per second) acoustic coupled modems to now expecting 20-100Mbps (Mega {million} bits per second) as a norm.

In the last few years there has been a lot of talk about the NBN. It was originally sold to Australia as being the panacea for all the issues with the 'old' ADSL and that ALL Australians would get it. The marketing suggested that all but an unfortunate few, who lived hundreds of kilometres from anyone else would get fibre, the new wonder stuff. This was sold as providing world leading ultra high speed broadband to all users.

So what is 'fibre'? This is very thin strands of very pure glass bundled up into a cable. You do need to be fairly careful how you handle it as sharp bends will break the glass fibres. Instead of using sound and electricity, fibre uses laser light. The light is broken up into very short pulses (rather like flicking on and off a torch) and is in many more 'colours' than you can see, some of it being in the high infra red and some of it being in the low ultra violet and beyond. Light travels about 10 times as fast as electricity AND can go much further in fibre with minimal losses than an electrical signal down a copper wire.

One of the benefits with fibre is that by changing the colour of the light from, say, red to blue gives an increase of about 10 times the data that can be sent down the same cable. So by changing some hardware routers (rather like your modem, but on steroids) the speed of data can be drastically increased in an existing cable. Currently there appears to be about 50+ years of growth in fibre capacity.

Computing, and networks are an essential part of computing, has been following Moore's Law for over 50 years. This law 'states' that there is a doubling of '...' every 24 months, where '...' started as transistors in an integrated circuit, but has also proved true of storage, memory, computing speeds and network capacity. What does this mean for you and me, well if you use 10Mbps today, you will use 20Mbps in two years, 40Mbps in four years, 80Mbps in six years, 160Mbps in eight and 320Mbps in ten years time. I am sure most people would actually want considerably higher than what we currently have. From talking to many residents, around 25Mbps is currently the lower end of the sweet spot.

The above is all well and good, but here is the crunch, SkyMuster satellite is limited to a maximum of 25Mbps, Wireless 'can' get to 100Mbps if you push it, but it is limited by the number of concurrent

users. NBN FttN (fibre to the exchange, copper to the house) is limited to 100Mbps even if you are lucky to have a good copper cable. NBN FttP (fibre to the premise) is limited to 100Mbps as all users on the exchange share the same capacity like Wireless.

A modern network should provide scalability to the user for the next 20 years minimum BEFORE other technologies have to be investigated. If this is not the case then there will be continual replacement of the networks, but this time it will be much more expensive. The NBN is currently going to cost \$30-100billion and it will be obsolete before it is delivered. Think about it.

Glossary

Definitions of terms commonly used in this document are contained here.

ACCAN	Australian Communications Consumer Action Network
ADSL	Asynchronous Digital Subscriber Line. Up to 25mbps service, but typically 1.5mbps-5mbps
DoCA	Federal Government Department of, Communications and the Arts
DSL	Digital Subscriber Line, a broadband technology typically used by telecommunications companies to access customers
FTTC	Fibre To The Curb
FTTN	Fibre To The Node
FTTP	Fibre To The Premise. Currently upto 100mbps download, but can be extended beyond 1gbps easily
ISDN	Integrated Services Digital Network. 128Kbps symmetric service
LAN	Local Area Network, for computer-based networks generally in a premises
SBW	Sutton, Bywong and Wamboin
SkyMuster	NBN Satellite provisioning NBN services to remote rural and remote regional areas
WAN	Wide Area Network, for connecting LAN's together and to the wider internet
WBSR	Wamboin, Bywong and Sutton Region
WCAG	Wamboin Communications Action Group
Wireless	NBN provisioning of services to edge of urban area. Up to 25mbps