Benenden Parish Plan

Communication:
Broadband and Mobile

Issue 1.1

03/05/2014

Benenden Broadband and Mobile

Key Points

Broadband

- Introduction of Superfast Broadband should be complete by March 2015. **96%** of postcodes within the TN17 4xx Benenden exchange area will attain Superfast Broadband speeds (25 Mbps and above)
- Only BT and Talk Talk have their own broadband equipment in Benenden Exchange providing maximum speeds of up to 24 Mbps. Other ISPs use a BT Wholesale connection enabling service at either 24 Mbps or just 8 Mbps (e.g. Sky)
- WiFi Broadband may be available for some households in Benenden from CallFlow and VFast
- 4G Mobile services will enable broadband comparable speeds beginning in Benenden during 2014
- Poor broadband performance may be due to electrical interference and internal (or external) wiring problems.

Mobile

- O2 have plans to improve 2G and 3G coverage and also introduce 4G services in 2014.
- Home coverage can also be improved by using a signal booster (femtocell)
- PAYG SIM cards can be a useful tool to determine the best provider in addition to online network coverage maps.
- If you decide to change provider your current mobile company will inevitably offer you inducements to stay (e.g. lower charges, improved terms, free femtocell). This also applies to Broadband.

Broadband

DSL Broadband (Digital Subscriber Line)

The most significant (but not the only) factor limiting Broadband speed is the physical distance between the household and the equipment in the telephone exchange. Rural telephone exchange areas tend to be larger than those in urban areas and therefore people are more likely to live further from the exchange and consequently suffer from poor broadband performance. The current technology used to deliver Broadband is called ADSL2+ which is theoretically capable of delivering up to 24 Mbps[1] (Mega bits per second) although speeds of 9 to 15Mbps are more typical. Of course those people living further from the exchange will not be able to attain anything approaching 9 Mbps and may actually receive less than 1 Mbps.

[1] The normal working line speed will always be below the maximum possible speed to ensure that the broadband service is stable and not prone to loss of synchronisation due to electrical interference etc

To provide improved broadband speeds (known as Superfast Broadband), BT are making the distance between the customer and the broadband equipment shorter by installing broadband equipment in new street cabinets alongside their existing green cabinets. These new cabinets are connected back to the telephone exchange by fibre optic cables and BT also uses a new technology to deliver the broadband service called VDSL2 (which is theoretically capable of delivering up to 80 Mbps) over a normal telephone line. Generally speaking you would need to live about 400 metres or less from your street cabinet to get the best performance, while some people who reside over 2000 metres (2km) away have reported speeds of 16Mbps. Typically an average real-world service speed of around 30 - 40Mbps is more likely. Unfortunately, as with ADSL2+ the further you are from the broadband equipment the slower the attainable broadband speed becomes and if you are far enough from the cabinet you may hardly benefit at all from Superfast Broadband.

Due to the significant additional infrastructure costs BT have only been rolling out this service where it is profitable for them to do so i.e. densely populated urban/residential areas. However the government has made some funding available to boost rural broadband speeds which locally is administered by the KCC and in most areas (including the **parish** of Benenden – but not the entire telephone exchange area) BT will be providing the higher speed service.

According to the KCC website, work should start in Benenden on providing Superfast Broadband between **October 2014** and **March 2015**. Planning estimates show that:

- **96%** of postcodes within the TN17 4xx Beneden exchange area will attain Superfast Broadband speeds (25 Mbps and above)
- **4%** will get basic broadband speeds (2 Mbps to 24 Mbps).

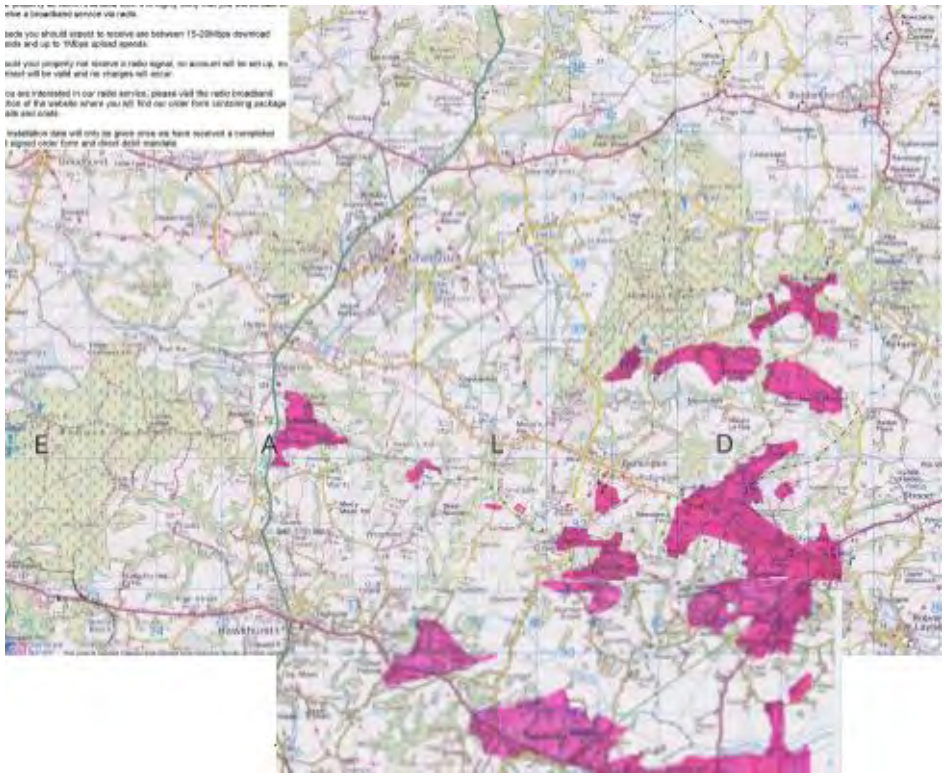
Cabinet Addresses in Benenden:

Cab 4 O/S CHERRYFIELDS THE STREET
Cab 5 O/S TELEPHONE EXCH NEW POND ROAD
Cab 6 STEPNEYFORD LN JCN BENENDEN ROAD

Wireless Broadband

In Kent some of the Funding for Rural Broadband has been awarded to Callflow Solutions who have deployed Fixed Wireless based solutions at Goudhurst and also Tenterden/Rolvenden. Callflow schemes typically use microwave radio from a high building e.g. Rolvenden Church either directly to households or to their own street cabinet alongside the BT cabinet so that they can connect to the BT Openreach telephone lines to the customer. Broadband speeds of up to 20 Mbps are attainable for direct wireless connections. Unfortunately it is not cost effective for Callflow to provide a similar wireless scheme from Benenden Church. However some Benenden households may be able to connect to the existing Rolvenden transmitter

providing there is near line of sight between the church and the roof of the house. Estimated Benenden coverage from the Rolvenden transmitter is shown below.



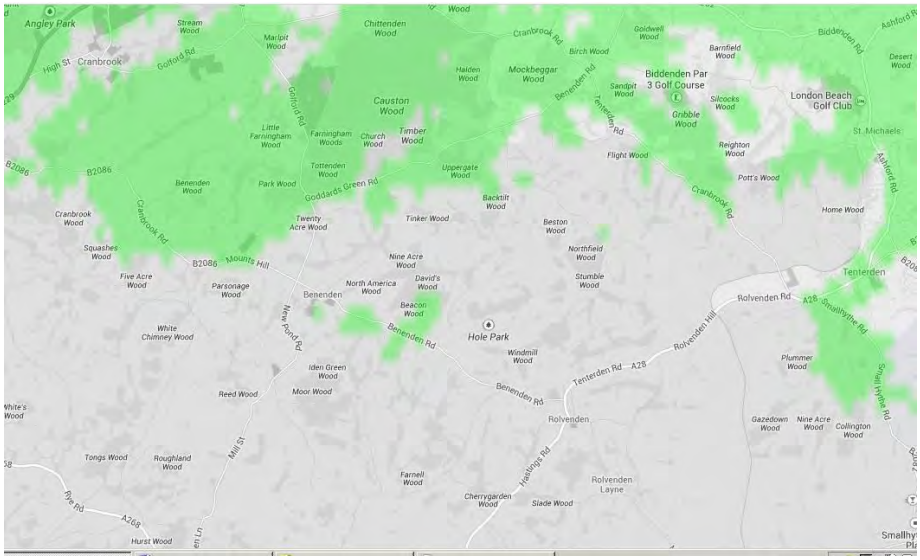
Further details are available from the Callflow website:

http://www.callflowsolutions.com/home-broadband/wireless-broadband/

A further complication is that some of the cabinets which are homed to Benenden Telephone Exchange will actually obtain Superfast Broadband from Callflow. Although these cabinets are located in Rolvenden there may be one or two households that fall within Benenden parish but which are fed from these cabinets. For completeness the Benenden Exchange cabinets which will be served by Callflow are at:

Cab 1 TENTERDEN ROAD, OPP HALDEN LANE ROLVENDEN
Cab 2 OPP SPARKSWOOD AVE, TENTERDEN ROAD, ROLVENDEN
Cab 3 MAYTHAM ROAD, ROLVENDEN HIGH STREET

In addition, another company offering Fixed Wireless Broadband in Kent also show parts of Benenden as being within range of their Broadband service. The company are called VFast and although their infrastructure is focussed mainly on East Kent potentially they provide another possible supplier for households which may not benefit from BT Superfast Broadband. VFast coverage is shown below:



Further information is available from Vfast at:

http://www.vfast.co.uk/

Mobile Broadband

Mobile telephony coverage is covered in a separate section of this document but the next generation of mobile technology (known as 4G or LTE) will be able to provide broadband speeds approaching or in many cases exceeding that provided by the typical DSL services described above. Typical speeds obtained from 4G today are in the range of 16 – 24 Mbps.

EE have stated that their target is to have 98% coverage of the UK by the end of 2014 while O2, Vodafone and Three strategy is for coverage of 98% by the end of 2015.

Furthermore, O2 have confirmed that they are upgrading the mast site at Halden Lane Farm near Rolvenden to enable the introduction of 4G services from Q2 2014. Vodafone have made tentative enquiries about siting a new base station in the parish to serve Benenden. Three do not currently have a date for the planned introduction of their 4G services for Benenden. No response has been received from EE.

Other Broadband Issues

Although distance from the telephone exchange is one of the main limitations affecting DSL broadband speed it is not the only factor. Electrical interference from household appliances and wiring problems either inside the home or on the BT line may also affect the maximum line speed. In any case a poor broadband experience may be nothing to do with the speed between you and the exchange but instead due to restrictions in the network of the Internet Service Provider (ISP).

ISPs

At the time of writing, only BT and TalkTalk have their own Broadband equipment situated in Benenden Telephone Exchange providing service directly to customers. All other ISPs use a BT Wholesale product to connect the customer to the ISP's own network. Whereas most ISPs use an enhanced BT Wholesale product which allows customer full access to the higher ADSL2+ speeds, SKY Broadband use a very basic product which limits the speed customers could potentially achieve. SKY state on their website that the **maximum** download speed in areas where they have not installed their own equipment (e.g. Benenden) is **6 Mbps**.

Many ISPs will also limit download speeds on their network at peak times by 'traffic shaping' which effectively slows down each customer so that the network capacity is not exceeded. If you experience poor service during busy periods this may be due to your ISP throttling back demand.

If you decide that you would like to switch broadband suppliers then inevitably your current provider will offer you inducements to stay such as a discounted tariff or improved calls package. Even if you decide not to shift supplier it is definitely worth considering a change!

Line or wiring Problems

The following link is a useful guide on how to diagnose and fix slow broadband speeds caused by home wiring problems:

http://www.harriettbaldwin.com/pdf/How_to_fix_slow_broadband_speeds.pdf

Mobile Telephony

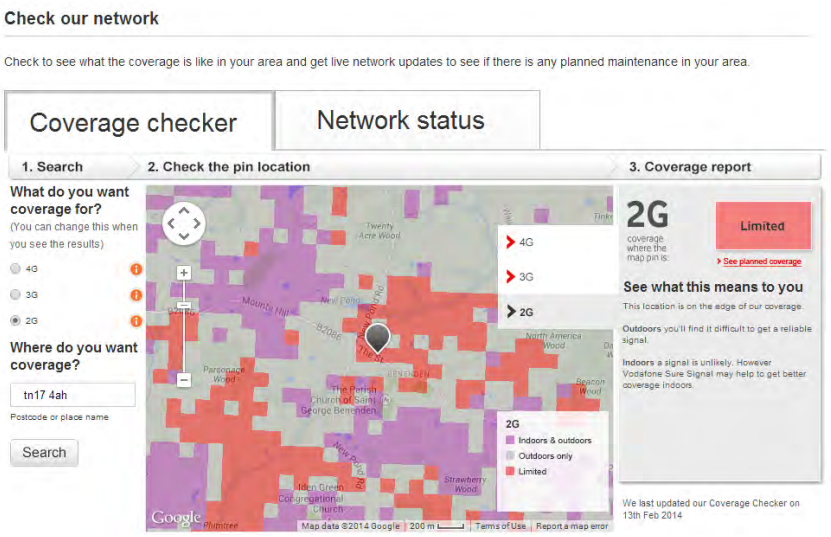
2G, 3G and 4G

2G, 3G and 4G refers to the 'Generation' of mobile technology being used to deliver services. 2G is the oldest type of mobile network currently in use. It was mainly designed for voice and text messages. If you're only interested in calling and texting then 2G coverage is perfectly adequate.
3G is in widespread use on mobile networks today with much higher data speeds available. If you want to use a smartphone for email, browsing and apps then 3G is a requirement (unless you can connect to a wireless broadband network).
4G is the next-generation of mobile network. It provides faster downloads and a better online experience compared to 3G. 4G mobile is not available in Benenden at the moment and is discussed in more detail under the Broadband section of this document.

Coverage

Coverage in Benenden from the 4 main providers is patchy at best – even for 2G services. Coverage checkers are available from all of the main providers although these are planning estimates only and should be used as a guide (not a guarantee) of what sort of service can be expected. Mobile reception can be affected by trees, buildings and even bad weather as well as geographical features such as hills and valleys.

The following picture is an example of existing 2G Coverage from Vodafone. As can be seen coverage varies from Good Indoor and Outdoor Coverage, Outdoor only and Limited i.e. none!



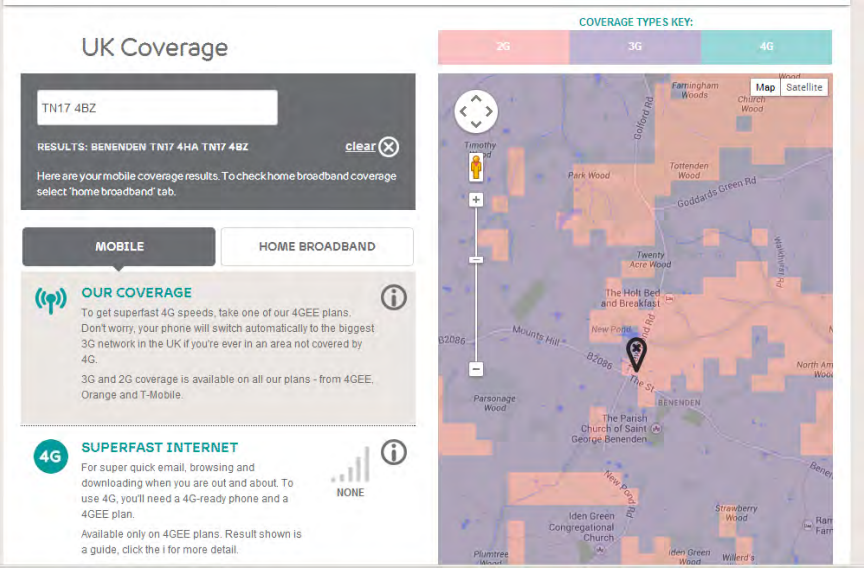
Vodafone Coverage in Benenden

Coverage checkers for the 4 main network providers are available here:

http://www.o2.co.uk/coveragechecker
www.vodafone.co.uk/coverage
https://explore.ee.co.uk/coverage-checker
http://www.three.co.uk/Support/Coverage

From the coverage checkers it would appear that EE provide the best network coverage for 2G and 3G services. However a more practical way to determine the best coverage is to send off for a Pay As You Go SIM card from each of the 4 providers and try them at home (and at work - or wherever you use your mobile the most). These SIM cards are free and carry no obligation for continued use once you have decided on the best carrier for you.

As previously mentioned, O2 will begin transmitting 4G service from the Rolvenden mast site in 2014. They will also use this site to improve coverage of 2G and 3G services to Benenden and the surrounding area.



EE Coverage in Benenden

Signal Boosters

Indoor coverage can also be improved by use of a femtocell. A femtocell is a signal booster which uses your home broadband connection to connect to the mobile network. Effectively you have your own mobile phone transmitter in your home although as all your calls are carried over your broadband service it may impact on your monthly broadband download allowance (depending on your mobile use). Each of the mobile providers offer femtocells under product names such as Vodafone Sure Signal, O2 BoostBox, Three Home Signal and EE Signal Box

Changing Suppliers

As with broadband, if you decide to change mobile network suppliers you will find that your current provider will offer you inducements to stay. If you are changing provider due to poor reception you may find that they will give you a femtocell free of charge as part of the deal. I was offered a femtocell, lower tariff, increased minutes/texts and a free handset when I tried to move my mobile number from Three to a different supplier. If you decide to change provider and want to keep your mobile number then you will need to ask your existing provider for a PUC (Port Utilisation Code). Inevitably you will then be transferred to someone who will offer you inducements to stay.

Mobile Virtual Network Operators (MVNOs)

Finally it may also be possible to save money by switching to a MVNO. In addition to the 4 main network providers there are a number of MVNOs which resell services by leasing capacity on the main networks. They are able to offer lower charges for calling and texting but may offer a limited range of

services (e.g they may not offer femtocells). However network coverage from an MVNO will be identical to that of the physical network provider.

MVNO	Network Provider
ASDA Mobile	EE
BT Mobile	EE
Delight Mobile	EE
Lebara Mobile	Vodafone
LIFE Mobile (Phones4u)	EE
Lycamobile	O2
Mobile By Sainsbury's	Vodafone
Ovivo Mobile	Vodafone
Talkmobile	Vodafone
Tesco Mobile	O2
The People's Operator	EE
Vectone Mobile	EE
Virgin Mobile	EE

So even if you are currently using the mobile network with the best coverage there may still be an opportunity to switch to a cheaper supplier or maybe even just to threaten to switch to a cheaper supplier to get an improved deal.

Document History

Issue 1	21/04/2014	Initial version 21st April 2014
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