Eight Ash Green & Fordham Heath

EAG Parish Plan Group Broad-band Questionnaire

Analysis and Results

March 2011

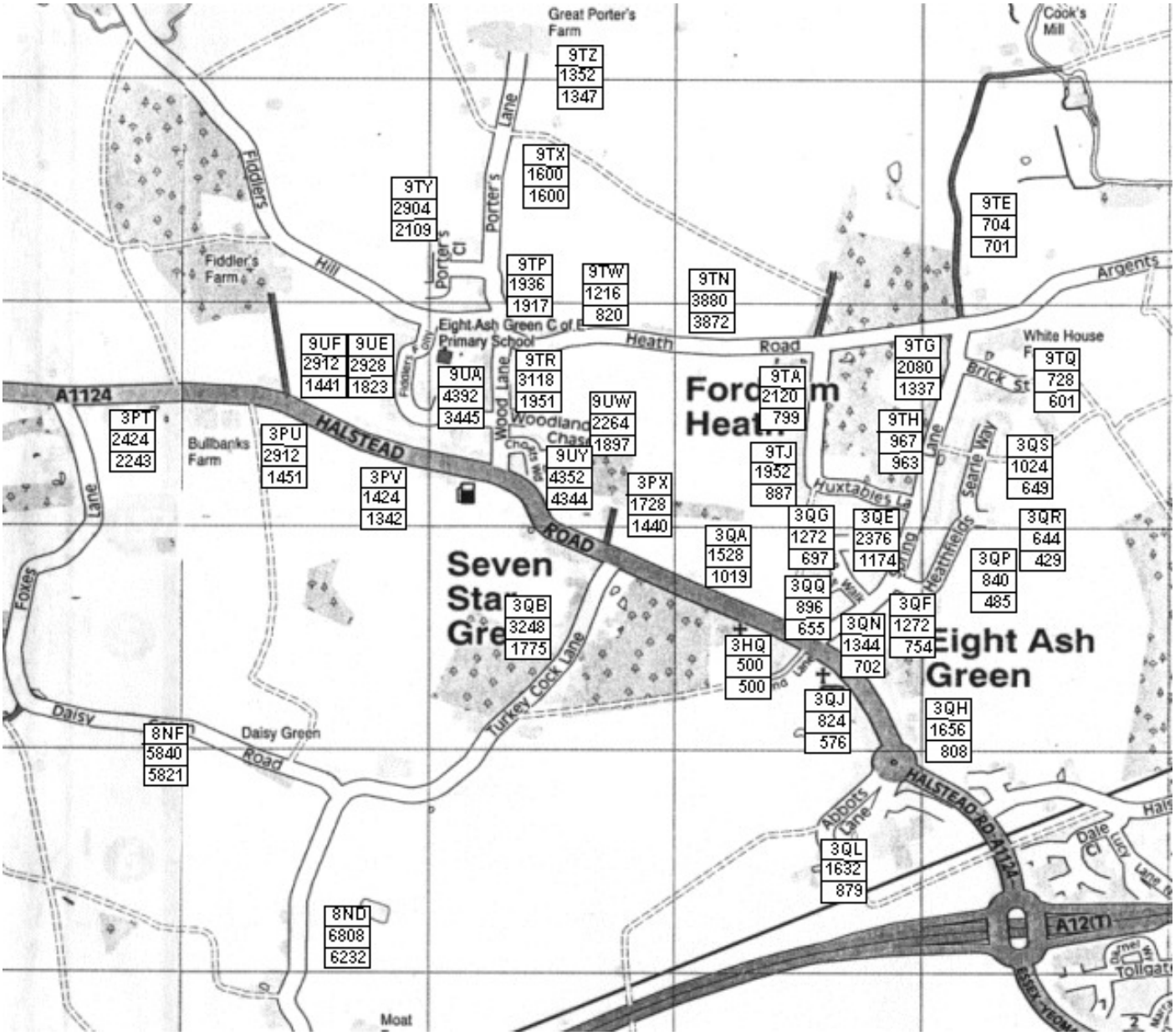
1. **The project**

The Parish Plan Questionnaire identified discontent with the speed of Broadband in parts of the village. At the request of the Chairman of the Parish Council, the Parish Plan Group carried-out a project to collect factual information about this problem. We asked residents to conduct a simple test, which measured the overall speed of their broadband connection. This report describes the project and its results. The results are given in Sections 2 & 3. A description of the project follows in Sections 4 – 11.

2. **Results in table form**

Postcode	Maximum	Average	Location
CO3 8ND	6808	6232	Turkey Cock Lane(S)
CO3 8NF	5840	5821	Daisy Green
CO3 9TA	2120	799	The Bridleway
CO3 9TE	704	701	Cooks Mill Lane
CO3 9TG	2080	1337	Spring Lane (N)
CO3 9TH	976	963	Spring Lane
CO3 9TJ	1952	887	Huxtables Lane
CO3 9TN	3880	3872	Heath Road
CO3 9TP	1936	1917	Wood Lane
CO3 9TQ	728	601	Brick Street
CO3 9TR	3118	1951	Wood Lane (N)
CO3 9TW	1216	820	Heath Road
CO3 9TX	1600	1600	Porters Lane
CO3 9TY	2904	2109	Porters Close
CO3 9TZ	1352	1347	Porters Lane
CO3 9UA	4392	3445	Beech Grove
CO3 9UE	2928	1823	Fiddlers Folley
CO3 9UF	2912	1441	Fiddlers Folley
CO3 9UW	2264	1897	Woodland Chase
CO3 9UY	4352	4344	Choats Wood
CO6 3HQ	500	500	Jubilee Meadow
CO6 3PT	2424	2243	Foxes Corner
CO6 3PU	2912	1451	Halstead Road(w)
CO6 3PV	1424	1342	Halstead Road(C)
CO6 3PX	1728	1440	Halstead Road(Nim)
CO6 3QA	1528	1019	Halstead Road(C)
CO6 3QB	3248	1775	Seven Star Green
CO6 3QE	2376	1174	Spring Lane(S)
CO6 3QF	1272	754	Spring Lane(S)
CO6 3QG	1272	697	The Walk
CO6 3QH	1656	808	Halstead Road (E)
CO6 3QJ	824	576	Halstead Road (E)
CO6 3QL	1632	879	Abbotts Lane
CO6 3QN	1344	702	Pallant Chase
CO6 3QP	840	485	Heathfields
CO6 3QQ	896	655	The Rise
CO6 3QR	644	429	Heathfields
CO6 3QS	1024	649	Searle Way

3. **Results in Map form**



KEY

POSTCODE
Maximum speed
Average speed

4. Delivery of the Broadband Questionnaire

The Broadband Questionnaire was delivered to all houses in the village during the last week in January, for return by 21st Feb. Of the 750 delivered, 160 were completed and returned, that is more than 1 in 5. Of these, 15 respondents did not have broadband. Another 5 used radio broadband, so were discounted from the analysis.

5. Data requested from respondents

The Parish Plan considered the possibility of an on-line questionnaire, but decided that it was probably easier to issue and collect paper.

Respondents were asked to run a speed test three times and record the download and upload speeds on their questionnaire. The questionnaire also sought the respondent's telephone exchange details, the broadband supplier and comments, along with optional personal details.

After the completed forms had been collected in, the data was entered into Microsoft Access Database. The database is subject to a Data Protection Registration. The Access Database permitted fast and flexible calculation of results.

6. Analysis of questionnaires

For the group of respondents in each postcode area, we noted the maximum speed obtained in any of the tests, and we also calculated the average across all tests for that postcode area.

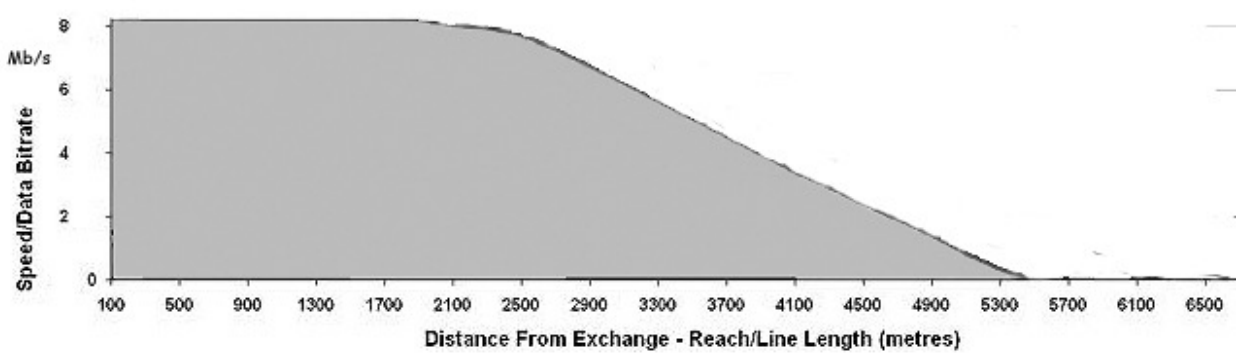
Various statistical tests were applied to the results to identify any impossible or unlikely results, and to identify and correct data entry errors.

The average speed is a good indicator of what speeds residents are currently obtaining. The maximum speed is what can be achieved if there is no telephone extension wiring, the computer system has been optimised and the service is provided by the fastest broadband supplier.

7. A Tutorial on Broadband

In broadband provided via the telephone line, the connection to the Internet consists of two parts. The first part is from the customer's premises to the Telephone Exchange. This is a dedicated link used only by each individual customer. Its data-rate is what the Broadband suppliers advertise as their speed. In EAG this is typically advertised as up to 8Mb/s, although this is achieved only by a small proportion of customers in the Village.

The speed achieved on this link depends on the proximity of the customer to the telephone exchange. Customers within 2km might expect speeds close to 8Mb/s. At distances of 5km the speed will be well under 1 Mb/s.



The second part of the broadband connection is the link from the telephone exchange to the national core internet network. This is generally shared by all the broadband users connected to an exchange. When this link reaches its maximum operating capacity, the downloading rate for all customers is progressively slowed-down. Some broadband suppliers provide a dedicated bandwidth just for their customers so that they can provide a higher speed or better quality service, but none do in the case of Marks Tey and Fordham telephone exchanges.

8. Telephone exchange coverage

According to information supplied by BT, residents of the village are served by 3 telephone exchanges: Fordham, Marks Tey and Colchester. The village is also covered by a BT remote unit located at Lucy Lane, Stanway, which serves just a few business customers in Eight Ash Green.

The broadband coverage area of the 3 main exchange is shown in the map below, the boundaries of the service areas intersect in Eight Ash Green. The coverage area of the Lucy Lane Unit is inset.

The distance from Marks Tey Exchange to the A1124 at Wood Corner is some 1.7km, so customers on the South side of the village receive a generally good broadband speed. Customer in the same geographic area are 2.9km from Fordham Exchange, so their broadband speed is beginning to deteriorate, but still eminently usable.

Customers in east of the village are served by Colchester Exchange. The cable route between Searle Way and Colchester Exchange is over 5km. Therefore customers are beyond the design limit for broadband connections, although some service is expected at around 0.5Mb/s.

9. The speed test advocated by the Parish Plan Group

The broadband diagnostics supplied by many broadband suppliers permit the actual Broadband speed between the modem in our homes and the local exchange to be measured accurately. However, use of these tools requires a high degree of technical competence.

The Parish Plan Group considered the possibility of asking respondents to use their broadband diagnostics, but formed the opinion that this complex task would have led to a very low return of questionnaires.

Instead, The Parish Plan Group decided to use a proprietary speed checker at the internet site www.broadbandspeedchecker.co.uk which gives a much simpler indication of broadband performance. This method does not actually measure what the Broadband suppliers describe as the "broadband speed" in their advertisements, that is from your home to the local exchange. Rather it produces an approximation of speed based on the time to upload and download a set of files of known length between the computer being tested, and a computer site in Docklands, London.

10. Other factors affecting the broadband speed

Many other factors also affect broadband speed. Certain computer firewalls cause a noticeable degradation of speed because they are rigorously checking the content of the data sent and delivered. Also residents with internal telephone wiring to extensions in their home, which are not connected via the broadband filter, may find that the speed is considerably reduced.

Residents using wireless transmission from their broadband modem to their computer, or using repeaters or range extenders, will see a further reduction in apparent speed.

In many postcode areas, the best broadband speed was often over twice the average. Sometimes this was due to the Postcode being served by two different exchanges, but often it was due to the way the broadband or associated computers had been set up.

11. Summary

Broadband performance depends primarily on the distance the user is from the local exchange. Eight Ash Green village is served by 4 exchanges. This gives rise to a wide divergence in the cable route distance, hence performance of broadband.

Certain parts of the village served by Colchester exchange, particularly on the east side of the village, receive an unacceptably poor performance. The west side of the village is served by Fordham exchange, and although on the downward curve of the Speed/distance graph, nevertheless has a useful broadband performance. Those parts of the village served by Marks Tey exchange have a relatively short cable route and a correspondingly good service.

The results clearly demonstrate those post code areas in which an alternative delivery mode of broadband would be expected to have an appreciable uptake.

END

DW/2011-03-05