Further to your Information request FOI64419 please find your questions and our responses below:

1. The cost of supplying broadband to each school within the remit of the county council. Please state the school name with address, postcode, cost of Internet circuit and where the circuit goes. E.g from school x to county hall network centre.

2. Any other costs to the council that form part of the school charging structure. E.g. staff dedicated to the department, cost of firewalling solution, cost of content filtering solution, cost of VLE.

3. Please say the supplier of each circuit (e.g. Virgin Media / BT).

4. Please say the speed and type of each circuit e.g. 10Mbit Fibre, 100Mbit Fibre, 2Mbit Learning stream.

5. The charging structure to schools. This should be concise and say exactly how each school's annual cost is calculated. It should also show the cost of any ancillary services schools can purchase from the council. If the cost is calculated on a per pupil basis please include the full cost to that school for the year + the number of pupils at each school.

6. When each schools contract is due to expire with the council.

7. The notice period a school has to give to change to an alternate provider.

8. A list of applications the council offers to each school that is currently only accessible via the schools current council supplied Internet connection / WAN connection. If there are any please state how the council aims to allow schools / Academies not on the county councils network access to these services.

9. The councils stance on alternative broadband providers to schools and the advice they send to schools regarding choosing an alternate provider

**Response: Please see attached.**

This concludes your request FOI64419.

If you require translation of the information you have been sent please do not hesitate the contact us.

If you are unhappy with the information we have provided in response to your request please write to:

Information Management Team Manager
Royal Borough of Windsor & Maidenhead
Town Hall, St Ives Road
Maidenhead
SL6 1RF
or send an e-mail to martin.tubbs@rbwm.gov.uk

We are proud to be one of the leading authorities in England for consistently responding to information requests within the 20 working days set down by statute. Information about our performance and summaries of requests received can be found on our website:

http://www.rbwm.gov.uk/web/foi_information_requests.htm

We are keen to hear about your experience with the Information Management Team here at the Royal Borough of Windsor & Maidenhead and look forward to receiving any comments you have about the way your information request was processed.

Please send any feedback to the Information Management Team Manager either by e-mail martin.tubbs@rbwm.gov.uk or in writing to the address above.

Yours sincerely

Chris Daniels
Information Management Officer
Legal Department
Operations Directorate
Royal Borough of Windsor & Maidenhead
Town Hall, St.Ives Road
Maidenhead SL6 1RF
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<td>67890</td>
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*Note: The above information is an example and should be replaced with actual data.*
Ten Questions to Ask your Education Broadband Supplier

Connection Bandwidth:

Background
Bandwidth usage varies with pupil age, size of school and the educational emphasis given to ICT. The BESA summary of September 2009\(^1\) reported that primary schools record an average bandwidth of over 4 Mbps and secondary schools nearly 20 Mbps. One local authority recorded 7 Mbps for a primary school of 400 pupils and for a large ICT aware secondary school, 49 Mbps was recorded. Contracts signed today need to be flexible enough to accommodate both a range of different requirements now and the expected growth in requirement over its term.

Question 1
Schools have a range of different bandwidth requirements now and can expect usage to grow at different rates; evidence from the National Education Network\(^2\) shows that we can anticipate a bandwidth growth rate for schools of between 30% p.a. and 50% p.a. Explain how you will accommodate this range of bandwidth requirements and expected growth in usage during the period of the contract. How do I know that your service will still be adequate for my school in 5 years time?

Design suitability:

Background
Contention ratio is the number of users sharing a connection. Most commercial broadband services expect users to share capacity, with home services generally experiencing a contention ratio of 50:1 and business broadband 20:1. There is little point in buying an “up to 10 Mbps” service if you are sharing it with 49 others. A school’s bandwidth must be uncontended at the point of use, in other words no-one else shares its capacity between school and the Internet. In practice, the core of a network can be designed with a contention ratio of 3:1 if it is kept below 70% capacity because not every school will max its bandwidth at all times.

Also, it is becoming ever more important that bandwidth is symmetric. Schools use learning platforms, videoconferencing and remote backup, all of which require good upstream bandwidth. Occasionally, recorded upstream bandwidth now exceeds downstream. Schools have moved more quickly into audio and video than other public services. Videoconferencing is probably the most demanding area where, for example, the ability to synchronise lip movement with sound may be important in languages. Latency is the time taken for messages to move around the network and is critical for videoconferencing. A total round trip time between 50 ms locally and 150 ms over the whole national path is an important guideline.

\(^1\) BESA ICT in UK State Schools 2009 summary report
www.besa.org.uk/besa/documents/view.jsp?item=1326
\(^2\) National Education Network Publication: Building a Broadband Entitlement www.nen.gov.uk/media
Question 2
My school needs to be able to rely on the suitability of my connection, local and core
design contention ratios will affect performance. Also, I expect to use applications that
require good upload speeds and am aware that firewalls, filtering systems and email can
add latency to networks. With particular reference to contention, latency and
symmetric access speeds, what are your guarantees of performance?

Security and Safety

Background

Education networks have very specific requirements for security and safety. Schools
requirements for security will include:

- Pupils and staff using the system – inappropriate content and contact.
- Personal data and coursework – data loss or access by unauthorised persons.
- ICT systems – from accidental and intentional attack, internal and external.

A balanced approach, including policy, education and systems strategies, will be
required to protect these elements so that systems are usable with access to
appropriate materials being as open as is reasonably possible. Security features should
not limit legitimate and planned educational access but should protect users of different
ages and different capabilities. Similarly, filtering systems should be responsive to the
changing maturity of users and the demands of different subjects and levels of courses.

Question 3

Explain how your systems protect information, pupils and staff whilst maintaining
usability. How can I be sure that you can provide sufficient flexibility for my school’s
needs?

Question 4

ESafety in my school is more than a set of filtering services. Learners are taught how to
behave in online environments and their behaviour is moderated through acceptable
use policies and staff supervision. Explain how your filtering systems are responsive to
the changing maturity of our users and the demands of different subjects and levels of
courses. How can my school manage the filtering so as to provide security for
vulnerable people whilst allowing appropriate access to those with specific research
needs?

Reliability and Availability

Background

A decade ago, the initial enthusiasm for on-line learning nearly stalled as school
networks, connected via ISDN, were overloaded or the circuits proved unreliable. Now,
a school broadband connection should be available over 99.9% of the time. Confidence
in this availability is also important if teachers are to plan on-line learning. Regular,
monthly, service reports and the ability to restore services rapidly if they do go down
reinforce this confidence.
Question 5
Internet access is as important as electricity for my school. Explain how you monitor and report activity on your network, how you discover faults in the service and how you will manage response times to get us back into service. As a minimum, following a break, can you restore service from the start of the following day?

Advice and Support

Background
Expertise in wide area networking is still relatively rare, as is expertise in securing networks and safeguarding users. School staffs require responsive and sensitive support services that complement the skills of the local ICT support teams.

Question 6
Tell us how you give us continuing support when we are worried about our network security or about the safeguarding of our pupils. What happens if we suspect that something is wrong or if our local ICT support people leave or cannot solve a problem?

Educational Applications

Background
The wide area network is only the transport layer for the learning services required by schools. These may include: Videoconferencing, Email Relay, Firewalls and security measures, Filtering, Anti Virus, and Learning Platforms. Services may be provided by the local authority or third parties, or the school itself, all of which may require configuration of the broadband service.

Question 7
How will your service cope with the wide variety of learning services we require now and in the future? How will configuration change requests be made and can you provide a price list of typical changes?

Cloud Services

Background
Like many small businesses, more schools are using services hosted in the ‘internet cloud’. Services are often hosted in ‘green’ data centres that provide security for the data whilst reducing the school’s carbon footprint. More recently, local authorities are hosting administration applications in data centres or are providing access to other cloud solutions, including email, remote backup and LAN support.

Question 8
How will a commercial service enable my school to take advantage of developments in off-site, hosted, services provided by the local authority and others?
The National Education Network

Background
The National Education Network comprises the 13 schools’ broadband networks in England, Scotland, Wales and Northern Ireland. The NEN community drives the development of digital communications infrastructures and services to support the safe, effective embedding of ICT into teaching and learning. Issues such as safeguarding and copyright are managed.

NEN offers a number of unique advantages for schools:

- Secure and safe environments where teachers, pupils and parents can work confidently together.
- Networks sized and maintained to meet the bandwidth and media demands of the education sector, within limited budgets.
- Cost savings through aggregated demand, for example for internet transit.

The NEN is a partnership between schools and local authorities, working in regional collaboration and with JANET (UK).

Question 9
Partnership and collaboration between schools is increasingly important as schools share vital resources and learners need access from multiple sites of learning, from libraries and from their homes. The National Education Network offers confidence, access to resources and the reassurance of being part of a UK-wide push to develop and improve resources. What access to the National Education Network can I expect from your service?

Affordability / Value for Money

Background
Naturally schools will want all of the above at a low cost. It is important that schools realise that they make considerable demands on a network; typically schools may generate more than four times the traffic of their local authority! Commercial Internet service providers may say that they can provide the same service at lower cost but it is unlikely that the service would be comparable, even in simple matters such as contention and in security.

Question 10
Overall, I am minded to remain with my local authority solution but, with an eye on budget pressures, could be persuaded to switch to a more affordable solution. What reassurance can you give me that your commercial service will give better value for money into the foreseeable future?

The ten questions were compiled by the South East Grid for Learning at www.segfl.org.uk