



Cabinet

5 DECEMBER 2011

LEADER

Councillor Stephen Greenhalgh

CORPORATE NETWORK STRATEGY

**Wards:
All**

Significant parts of the existing corporate data network have been in service for over nine years and critical components have reached the end of their life. From June 2013, a number of products become unserviceable and will need to be replaced. Other elements of the corporate network need work to make them suitable for tri-borough working and to provide service resilience. Elements of the work depend on the outcome of the Corporate Asset strategy, hence some buildings may no longer require network services by the time this proposal is being implemented.

A separate report on the exempt Cabinet agenda provides exempt information related to network security.

CONTRIBUTORS

EDFCG
EDLDG
ADLDS
H&F Bridge
Partnership

Recommendation:

That approval be given to the proposal to renew network services at a maximum total cost of £166,121 with on-going annual charges of between £8,000 and £32,146, the overall cost depending on the Corporate Asset Strategy, to be funded from the IT infrastructure projects revenue budget.

**HAS A EIA BEEN COMPLETED?
N/A**

**HAS THE REPORT CONTENT BEEN RISK ASSESSED?
YES**

1. BACKGROUND

- 1.1 HFBP operates a voice and data network on behalf of H&F which provides the core infrastructure on top of which the Council operates the rest of its IT systems. This network extends from the East London Data Centre and HTH and radiates out to over 50 sites around the borough and is illustrated in the attached diagram (see Appendix 1).
- 1.2 The most recent investment in the corporate network took place in 2010 with the critical replacement of the old Asynchronous Transfer Mode (ATM) based data, voice and video network. H&F's ATM equipment had reached end of life and the affected components needed to be replaced if HFBP were to be able to offer network support to H&F in the future.
- 1.3 The replacement infrastructure is provided by Virgin Media Business (VMB). Bandwidth provided can be varied depending on the user demand, with VMB providing links into both the ELDC and HTH. This removes the dependency on single point links, and also removes the dependency on sites acting as hubs for satellite sites (as was the case with Stowe Road depot), thus increasing the Council's flexibility in implementing the Corporate Asset Strategy.
- 1.4 This proposal now seeks to address some of the elements not covered by the replacement of the ATM network infrastructure and which now need to be reviewed and updated. This includes (together with other elements referred to in the exempt report):
 - The replacement of obsolete equipment and links in other parts of the H&F network which did not rely on the old ATM network and hence were out of scope of the earlier project. This equipment must be replaced by June 2013 if HFBP is going to be able to offer network support to H&F in the future. This has a significant business impact, should a network incident occur after June 2013 and the cause be an old network component, HFBP may not be able to restore services to affected users within the Service Level Agreement (SLA) or in extreme circumstances without re-designing the service delivery.
 - In addition, significant parts of the corporate network are currently based on a point-to-point design. In a major network incident for sites connected via a single link, whilst major applications will still be available in the data centres they will not be accessible by staff in the affected site, disrupting the delivery of front line services and consequently impacting residents. In a worst case scenario restoration of the service could take several months during which time new data links and equipment would need to be purchased, deployed, configured and tested before users would be back on line.

- 1.5 The particular buildings for which network equipment and links will be replaced will depend on progress with the corporate asset strategy and likely duration of occupancy.
- 1.6 Should this paper not be agreed then from June 2013 the Council may suffer more outages of the type experienced in August 2009.

2. CURRENT ARRANGEMENTS

- 2.1 The existing network is largely built using a managed service from Virgin Media but a series of point to point connections using a collection of private fibres and BT circuits still exist around HTH and Cambridge House. This is centrally managed and operated by HFBP, and whilst the Virgin Media network has in-built resilience a number of single points of failure still exist around the point to point links, in particular HTH which is the core hub from which many other network sites radiate.
- 2.2 A major loss of service at HTH is of serious concern and a new design is needed to meet the Business Continuity requirements of the Council. To ensure users have access to their data even in the event of a major failure there needs to be a method of providing connectivity to both data centres from all sites regardless of location and ensure there is no central dependency on one site.
- 2.3 The current arrangement also inhibits the development of the Corporate Accommodation Strategy which prevents the council being able to easily dispose of major sites used as a network communication hub, currently the case with Cambridge House.

3. BENEFITS

- 3.1 The new solution is designed to help support the Council's business requirements in a tri-borough context. It is not a simple price comparison of old and new circuits but a shift in the capabilities of the service. The solution also includes the replacement of obsolete Ethernet switches and a re-engineering of the IP Address infrastructure. When all three come together the revised service will connect into the Virgin Media Virtual Private Network (VPN).
- 3.2 In addition to supporting tri-borough working as set out in the exempt report, the proposition in this paper will:
 - Provide **flexibility** in the sizing of the connections to suit changing business needs, for example:
 - should site occupancy be reduced, then the bandwidth can be scaled back accordingly;

- should site occupancy be expanded suddenly, or new technology introduced which demands increased capacity (e.g. multi-media) then the bandwidth can be scaled up.
- Support the **Corporate Asset Strategy** by making the closure of buildings at the end of their leases easier and quicker to achieve through limiting the network dependencies on each site. This will avoid the current scenario where the disposal of a single site, like Cambridge House, which acts as a hub in the corporate network, triggers the need to re-provision network services for a further 4 sites.
- Support **SmartWorking** by
 - providing a platform that permits users to connect to the network reliably but prevent unauthorised access, increasing security;
 - enabling the deployment of new IP handsets for voice services. This will mean that smaller sites which have never been on the corporate telecoms network can do so more economically than before. It also means that the Siemens Openscape Unified Communications system can be deployed to these sites which permits users to Smart Work.
- Enable **Business Continuity** - The sites are no longer dependent on a single route to the corporate data centres. Instead, the sites connect through a cloud based technology with multiple paths within the suppliers core network. In the new design, the loss of either the ELDC or HTH will not disable connectivity for all major sites. In addition, local resilience is improved through a High Availability (HA) Firewall solution.
- Provide a single unified service underwritten by a single Service Level Agreement (SLA).

4. STRATEGIC OPTIONS – TRI-BOROUGH

- 4.1 In 2009, the Council agreed on the strategic approach whereby the suppliers are made responsible for managing the infrastructure and only the tails of the network enter the Council's premises. It becomes the responsibility of the supplier to ensure delivery of the data from end to end under the terms of a support contract.
- 4.2 This is known as a Virtual Private Network (VPN) solution and is illustrated in Appendix 2. The clouds represent the new infrastructure and are shown integrated with the rest of the h&f network services.
- 4.3 HFBP have recommended the offering from VMB, which is available under the Next Generation Network (NGN) framework agreement let by Westminster City Council. This also has the benefit of proposing a 'landing stage' to simplify network connections between the three

boroughs, but also with third party organisations such as providers or voluntary organisations. HFBP will endeavour to provide network links using NGN where this is consistent with the required contract length for our buildings.

5. TIMESCALE

- 5.1 The implementation is driven by the need to deliver tri-borough working in a very short timescale and also to de-commission the old Ethernet switches prior to the end of service date of June 2013 and facilitate the disposal of Cambridge House from the end of March 2014.
- 5.2 The project, subject to approval, would be started on the 4 January 2012 and completed within six months, the old infrastructure being de-commissioned before it becomes unsupportable. Time needs to be allowed for the negotiation of wayleaves where building are leased.

6. PROPOSAL

- 6.1 The costs for this work were originally estimated at around £300,000 in the Getting the Basics Right - IT infrastructure renewal paper, 2010. These costs have been reduced by the acceleration of the Corporate Asset Strategy and have been further minimised by HFBP reusing network equipment from vacated sites wherever possible. This has reduced the number of switches to be replaced from 94 to 23 (larger) switches. The exact work required depends on progress with the Corporate Asset Strategy and whether affected buildings are retained. The maximum resulting costs are as follows:

| Item | Cost £ |
|----------------------------|----------------|
| HFBP Staff Costs Total | 84,124 |
| Hardware | 66,197 |
| External Services | 15,800 |
| Project Costs Total | 166,121 |

- 6.2 The HFBP work involves:

- Reconfiguring the H&F network to allocate servers and users to different IP subnets
- Configuring network links as these are replaced.

- Implementing firewalls where necessary to complete a fully redundant solution and allow for a switchover between units in the event of a line failure.
- 6.3 It is recommended the Council enters into an agreement with HFBP to renew the Corporate Network from January 2012 for a capital cost of up to £166,121 subject to survey and an uplift in on-going annual charges of between £8,000 and £32,146 for three years, depending on the buildings to be retained under the Corporate Asset Strategy.
- 6.4 The capital equipment will be subject to a fluctuating currency exchange rate i.e. Dollar and sterling. The volatile market means that current quotes are valid for only 7 days.

7. EQUALITY IMPLICATIONS

- 7.1 There is considered to be little or no impact on equality as a result of the issues in this report.

8. COMMENTS OF THE EXECUTIVE DIRECTOR OF FINANCE AND CORPORATE GOVERNANCE

- 8.1 The capital cost of up to £166,121 (subject to survey) can be met from the IT infrastructure projects revenue budget. On-going funding of between £8,000 and £32,146 per annum will also be met from this budget.

9. COMMENTS OF THE ASSISTANT DIRECTOR (LEGAL AND DEMOCRATIC SERVICES)

- 9.1 There are no direct legal implications. The works will be procured through the Council's existing arrangements with H&F Bridge Partnership.

10. COMMENTS OF THE ASSISTANT DIRECTOR PROCUREMENT

- 10.1 There are no direct procurement implications for the purposes of this report.

LOCAL GOVERNMENT ACT 2000
LIST OF BACKGROUND PAPERS

| No. | Description of Background Papers | Name/Ext of holder of file/copy | Department/ Location |
|-------------------------|--|--|-----------------------------|
| 1. | IT strategy - getting the basics right IT infrastructure renewal | Jackie Hudson ext 2946 | FCS SmartSpace |
| CONTACT OFFICER: | | NAME: Jackie Hudson EXT. 2946 | |