London Borough of Hammersmith & Fulham

# Cabinet

**26 APRIL 2010**

**LEADER**
*Councillor Stephen Greenhalgh*

**BUSINESS CONTINUITY**

Cabinet is recommended to approve the establishment of a new service to improve its business and service continuity.

**Wards All**

**CONTRIBUTORS**

DFCS
ADLDS

**HAS A PEIA BEEN COMPLETED? YES**

**Recommendations:**

1. **To approve the establishment of a new business continuity service which would permit the Council to bring up critical services in one or other of the two Council data centres in the event of an emergency, thereby increasing the Council's Information Technology service resilience in the event of a disaster; and to approve the upgrade of end of life IT equipment in Hammersmith Town Hall and the refurbishment of an ageing computer room at a cost of £998,970 over five years.**

2. **To agree funding of a total of £998,970 of which:**

   - **£52,000 is to be funded from corporate planned maintenance; and**

   - **£946,970 will come from the balance of £981,000 remaining from the £8m Strategic Programmes fund, which includes the overall annual maintenance for three years and an estimated £36,002 p.a. (years 4 and 5 only) maintenance.**

3. **To note that in addition, the annual testing and support costs of £120,000 p.a. will be funded from the current H&F Bridge Partnership contract price.**


## 1. STATUTORY BACKGROUND

1.1 Local authorities are obliged by the Civil Contingencies Act 2004 to have "robust business continuity arrangements in place" which will permit them to continue to deliver service and communicate with other public bodies such as the emergency or armed services and the general public throughout a major incident.

1.2 This means all "Category One Responders" must have resilience embedded into all business processes and supporting technologies in order to minimise downtime in services.

1.3 In addition, since May 2006 a requirement of the Act is that all local authorities must promote Business Continuity Management to business and voluntary organisations in their communities.

1.4 Business Continuity Management is based on the principle that it is the key responsibility of directors to ensure the continuation of its operations at all times. (Appendix 1).

1.5 Service areas are now heavily dependant and growing increasingly more reliant on IT for their service provision. Outages of any kind are less tolerated now than in the past because of this dependence on the IT service.

1.6 The Council has a responsibility to identify those key services which, if interrupted for any reason, would have the greatest impact upon the

community and the organisation; to identify and reduce the risks and threats to the continuation of these key services; to develop plans which enable the council to recover and/or maintain core services in the shortest possible time.

1.7 It has now done this and this paper is to mitigate those risks considered the likeliest. (Appendix 9).

## 2. BUSINESS CONTINUITY ARRANGEMENTS IN PLACE TODAY

2.1 The only IT-related business continuity in place now is that of the restoration of a basic telephone service (including the contact centre) to a suitably equipped location, e.g. FTH, within a day of a service failure.

2.2 There is local resilience in place in the ELDC where if individual services fail they can self-heal and continue to function. Earlier this year, the data centre was affected by a power outage in the East End which in fact took out other businesses in the area but not the H&F service as the standby power arrangement came into service.

## 3. MAJOR RISKS AND MITIGATION

3.1 Two years ago, our financial IT service provider suffered a power surge at their data centre causing them to invoke their Business Continuity arrangements and H&F to lose one day's financial data.

3.2 In the last six months, two major outages affecting all council services, one caused by a network communications device and another caused by an ELDC data storage disk failure, meant that services were lost for a total of five and half hours. Examples of direct impact of this loss of service on residents include the contact centre being unable to work apart from fielding calls; Meals on Wheels (MOW) functioning with the previous day's data; in H&F Direct, appointments had to be made for residents to return on a different day for services like parking permits. (Appendix 11).

3.3 Last year, the introduction of a USB memory stick to a PC imported a virus into the network of LB Ealing. The resulting loss of service lasted up to three weeks and cost over £500,000 to remedy, from staff overtime, loss of revenue from failure to issue parking tickets and failure to take library fines and fees, costs of eliminating the virus and rebuilding computer systems. (Appendices 7 and 13).

3.4 A summary calculation estimates that the opportunity costs for Hammersmith would run to approximately £500,000 per day, a significant proportion of which would translate into real direct losses.

3.5 The core risk mitigated by this proposal is the loss of IT services dependent upon the servers housed in the East London Data Centre. The consequences for Council services include:

- Loss of telephone service into or out of the Council
- Loss of access to e-mail and unstructured data (Word documents in shared folders for example)
- Loss of access to key applications for both resident-facing and back office functions

3.6 Risks such as the loss of data caused by a power surge or a denial of access to the ELDC, resulting in some 80% of the Council's IT services being out of action, would be mitigated by this proposal.

## 4. MAJOR RISKS NOT ADDRESSED IN THIS PROPOSAL

4.1 In 2005, a burst water main outside 145 King St. pictured above meant that the area including the council office at 145 King St. had to be evacuated. Had this incident happened a few metres further up the road it would have been Hammersmith Town Hall and Hammersmith Town Hall Extension affected, with disastrous consequences, including:

- no way for the public to contact the Council by phone
- between 30 and 50% of the Council's IT services inaccessible
- around 1330 staff to be relocated.

4.2 This proposal cannot directly mitigate this risk of loss of a key building from which to provide services. Instead, mitigation of this risk is through a series of changes planned over the next 18 months:

- the corporate Accommodation programme building consolidation;
- the corporate Network Strategy;
- the new civic accommodation design;
- Service Resilience Group drawing up a corporate plan for relocation of Staff to other sites.

4.3 This proposal will however mitigate other major risks such as fire or flood in the HTH computer room, by offering replication of its key servers.

4.4 Finally, the proposal would not eliminate the risk of viruses being introduced, with the potential to escalate losses similar to Ealing. Currently at H&F USB memory sticks are unencrypted and unprotected against viruses. To make them and all other Council-owned mobile devices safe is estimated to cost over £150,000 one-off. Mitigation against the risk of virus infection will come through the SmartWorking programme which will see the introduction of Network Access Control for mobile devices. Once implemented, it will scan all mobile devices at the point of being attached to the network and if the anti virus software is not up to date it will prevent the device from connecting to the corporate network. In addition the Information Security policy requires usage of USB memory sticks to be tightly controlled.

## 5. EXCLUSIONS

5.1 This solution will not deal with any event that affected both data centres simultaneously as this is considered unlikely or so extreme as to not warrant council mitigation. Other exclusions are considered in the detailed paper **(**See Appendices).

## 6. NEXT STEPS TO SECURING BUSINESS CONTINUITY

6.1 One of the reasons for the creation of the H&F Bridge Partnership (HFBP) with the Council's strategic partner Agilisys was to utilise their expertise in dealing with the need to move H&F servers from a computer room within 275 King Street, a building earmarked for closure, to a more robust and resilient environment, to create a highly resilient virtualised data centre environment that protects against all but a major disaster, such as a fire destroying the building. This has now been done.

6.2. Another was their commitment during the HFBP procurement stage to providing a Business Continuity service to the Council at a figure (in 2006) of no more than £1m.

6.3 It is now time to turn our attention to business continuity to mitigate against major disaster which this proposal will do by establishing business continuity for the applications defined as critical to restore within two to eight hours in an emergency, referred to as first order applications.

6.4 These are not necessarily the same as the Critical Applications in the contract with H&F Bridge Partnership for which the council demands high availability in normal circumstances.

6.5 Seven options were considered:

1. A **hot site** using replication – each data centre site provides an equivalent service to that on the main live site, with data being copied over in real time as it is updated, which would cost £1,032,390 with the ongoing cost being £130,885 p.a.
2. A **warm site** – no replication would take place between the primary and secondary sites. Instead, virtual tape drives would give this a failover time of 24 to 48 hours, which would cost £1,492,185 with the ongoing cost being £293,885 p.a.
3. A **cold site** – requiring configuration of servers as well as restoring data from backups (based on a third party provider solution bought into play in a major event), which would cost £1,512,185 with the ongoing cost being £538,885 p.a. This would effectively take the same time as today to procure and install i.e. 4-6 months not least due to the need to connect to the H&F network.
4. A **cold external site** – in this case supplied by an external third party, has again with no normal connection to the H&F network, this would cost

£1,512,185 with the ongoing cost being £538,885 p.a. This would cut the time to deliver the solution down from the 4-6 months today to between 1-5 months.

5. A **virtual data centre** – based on collaboration with other Agilisys customers. Currently, the timetable for implementation is not clear and the likely costs are around £1.25m over five years. H&F have approached the other Agilisys customers, but their decision timetable was a key barrier to collaboration at this point, as Rochdale and Cumbria are only at the early ideas stage in their thinking.
6. **Collaboration with other local authorities in the London area**. Capital Ambition are out to tender for an LPSN shared Recovery Service. Again, the timetable for implementation is not clear and the likely costs are around £1.25m over five years. This also has a range of uncertainties about the level of provision and availability.
7. A **hybrid hot site** solution which would restore the first order applications within two to eight hours (excluding Revenues and Benefits Academy system which is hosted externally and may take up to two days) of the declaration of an emergency to permit 50% of the user base to access them with the remaining applications being restored in priority order over the following 4-6 months. Costs are shown in the table in section 2.

6.6 The recommended solution is the hybrid hot site one as it meets most of the Council's main requirements. Good planning has put the council in the position of having two sites, one a data centre which already has serious resilience built in, making this an attractive, cost effective solution.

6.7 At the end of this project, the Council will benefit from having moved from the current service which deals with business continuity events affecting local resilience to a stronger business continuity service which deals with more major events than previously through delivering, in an emergency,

- The ability to restore round 30 first order applications (Appendix 3 of the exempt report, pages 12-13) and critical data quickly, within two to eight hours of the declaration of an emergency to permit 50% of the user base to access them. This excludes Revenues and Benefits Academy system which is hosted externally and may take up to two days to restore.
- A plan for and the ability to restore the remaining second and third order applications to 100% of users, phased on the basis of the criticality of the particular disaster and the time of year and key event (e.g. financial year-end or an election), as normal service resumes. To get all the services and users 100% back would be done on a reasonable endeavours basis and depends on the prioritisation of the services in the Council's service resilience plans.
- Optionally IT service monitoring out of hours to determine whether any serious service outages or potential disasters were occurring and prevent them if possible or take suitable action if not.
- Also as a further option to procure a restore service that would mitigate the risk of data corruption being replicated across the two data storage area networks. (Appendix 2).

## 7. ADDED VALUE TO THE COUNCIL

7.1 The proposed Business Continuity solution also improves the resilience (by self-recovering or self-healing systems) within extended hours of website transactional service provision to residents, allowing these new facilities to be used under normal circumstances (not in an emergency) in extended hours, i.e. from 06.00 to 24.00 daily, which moves the council significantly closer to being a 24/7 service provider. (Appendix 5).

7.2 HFBP have had the foresight to plan the infrastructure and some applications (Appendix 4) in such a way that it facilitates additional business continuity without extra spend; for example if staff had to move office in an emergency they could access the listed applications.

7.3 This solution also has the potential to be marketed by HFBP on the Council's behalf.

## 8. CONSTRAINTS

8.1 In order to deploy the hot hybrid solution, it would be a better approach to upgrade end of life servers in HTH and refurbish an ageing computer room (increasingly at risk of failure) now running far more infrastructure than it was originally commissioned for. While not vital for this project there is some avoidance of cost (£45k) through combining it. The cost is £192,105 in total over five years.

8.2 If this proposal does not gain Cabinet approval, then the risk of a failure in the HTH computer room is increasing to the point that an urgent Key Decision will need to be made solely for the end of life IT equipment and facilities there at a cost of £237,105.

## 9. MEETING OUR OBLIGATIONS

9.1 It will assist the Council in meeting its obligations under the Civil Contingencies Act and allow it to restore critical services within two hours and a proportion of the non critical ones within hours.

9.2 It will also crucially enable the council to meet Key Line of Enquiry targets within the CAA.

## 10. TIMETABLE

10.1 The timetable for the project is as follows:

- Final solution and approval to proceed April 2010

- Detailed planning — March 2010
- Procurement of hardware and software — April through May 2010
- Refurbish HTH data centre — April through June 2010
- Set up hot site — May 2010
- Build, test and migration of services — August 2010
- Contingency — end September 2010
- Complete project — October 2010

## 11. COST BREAKDOWN

11.1 The cost of this proposal for business continuity and the end of life replacement proposal includes:

- Software licensing and replication services between ELDC and HTH computer room

- Costs for staff to carry out the two annual tests, maintenance and alignment of the servers in each location, plus additional ongoing licenses. (Appendix 6)

- HTH computer room refurbishment including upgraded power, air conditioning, target hardening

- The installation of equipment (servers and communications network) and software and other implementation services in HTH computer room

| | One off | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Grand total |
|---|---|---|---|---|---|---|---|
| Replication and licences | 511,946 | | 103,755 | 103,755 | 103,755 | 103,755 | 926,966 |
| Maintenance* | | | | | 36,002 | 36,002 | 72,004 |
| Testing see 2.2 | | | | | | | |
| Total | 511,946 | 0 | 103,755 | 103,755 | 139,757 | 139,757 | 998,970 |

*Maintenance included for three years.

11.2 In addition, the £120,000 for annual testing and support - totalling £600,000 over five year - is to be funded from other H&F Bridge Partnership efficiencies (pre-bought days).

11.3 The Council will be responsible for deciding on the invocation of the DR service. HFBP will write and maintain the Business Continuity plan to be as flexible and responsive as possible.

11.4 For the preferred option, two tests would take place each year. These would be tests of the service which would seamlessly change over from one service to the other, focusing on one business area at a time. Led by the H&F service resilience group the council would set a scenario to test twice a year and test that scenario. Council staff involved would be the service resilience group, the IT strategy and operational group and the service area affected. It would be crucial to test a switch over from the data centre to the computer room. Network and telephony would be tested on every occasion.

11.5 The Academy Revenues and Benefits system test would be carried out less frequently with the 3rd party supplier as currently this test would take a long time to perform (up to two days) and longer (up to four days) to reinstate the service.

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

12.1 Given that many of the Council's functions are statutory duties it is necessary for the Council to have appropriate contingency plans in place to protect its data in the event of a disaster etc.

## 13. COMMENTS OF THE DIRECTOR OF FINANCE AND CORPORATE SERVICES

13.1 In order to determine the value for money of this proposal, the council consulted Deloittes who provide the Internal Audit service to H&F and their conclusions were that the council should again review its requirements and the key risks it wishes to mitigate and then decide if this represents value for money. This has now been done. (Appendix 8).

13.2 Other authorities were also consulted on the spend they have made on new data centres and business continuity including Wandsworth, K&C, Ealing, Havering, and Haringey (Appendix 10 of the exempt report).

13.3 The Council has, through the Strategic Programmes fund, a budget available in 2010/11 of £981,000 for business continuity.

13.4 It is proposed that £998,970 which includes the annual maintenance cost is funded as follows:

- £52,000 is to be funded from corporate planned maintenance;

- £946,970 will come from the balance of £981,000 remaining from the £8m Strategic Programmes fund which includes the overall annual maintenance for three years and an estimated £36,002 p.a. (years 4 and 5 only) maintenance

13.5 In addition, the annual testing and support costs of £120,000 p.a. will be funded from the current H&F Bridge Partnership contract price.

13.6 Although the Council should make savings on insurance, its insurance provider is not willing to make any concessions to the Council on the premiums paid.

**Appendices are listed below and available on request:**

Background paper
Appendix 1 defines potential business continuity events.
Appendix 2 defines potential business continuity options
Appendix 3 lists first order applications with a recovery priority of high **(with exempt report)**
Appendix 4 applications available in disaster recovery situation - additional benefits of recommended solution (value add to H&F)
Appendix 5 lists applications available in normal circumstances in extended hours
Appendix 6 annual support services
Appendix 7 news stories
Appendix 8 Internal audit (Deloittes) assessment findings
Appendix 9 IT impact assessment
Appendix 10 Wandsworth and K&C plans **(with exempt report)**
Appendix 11 Scenario - loss of IT service to Meals on Wheels service
Appendix 12 Network extra resilience
Appendix 13 Ealing virus 500k loss
Appendix 14 Network diagram **(with exempt report)**

**LOCAL GOVERNMENT ACT 2000**
**LIST OF BACKGROUND PAPERS**

| Description of Background Papers | Name / Ext. of Holder of File/Copy | Department / Location |
|---|---|---|
| Data centre relocation and business continuity | Jackie Hudson, Head of IT Strategy 2946 | Business Technology office Town Hall Extension 2nd floor |