

# WIRRAL COUNCIL

## Transformation and Resources Policy & Performance Committee

29 January 2014

<b>SUBJECT:</b>	<b><i>ICT DISRUPTION</i></b>
<b>REPORT OF:</b>	<b><i>INTERIM HEAD OF ICT</i></b>

### 1.0 EXECUTIVE SUMMARY

- 1.1 As requested by members, this report sets out to update Members of the Transformation and Resources Committee on the causes of the ICT disruption of the 4<sup>th</sup> and 5<sup>th</sup> September 2013. The report will also cover the actions taken to prevent a similar recurrence and particularly what has been done to increase resilience of the Members ICT service.
- 1.2 Clearly there are many other areas of ICT which the Committee is interested in discussing. The current capacity in ICT has been severely affected by significant staffing reductions and the sickness absence of the most senior manager. The service is, quite understandably having to prioritise very carefully and ensure systems that have most affect on the well being of the public are being maintained and managed. On-going prioritisation of work is in place and an interim advisor has been appointed to assist with the improvement activity required and to manage day to day operations. Further updates can be provided to the Committee as necessary and in a paced and sensible way. There is a balance required between the resource constraints and the high level of demand for ICT services and this is common in all public sector organisations.

### 2.0 BACKGROUND AND KEY ISSUES

- 2.1 Wirral Council currently host, in house, their business and public data and voice services and systems. These systems deliver an array of business critical services that include, but are not limited to, call centre and telephony services, online public services and internal business and data services.
- 2.2 All ICT services are hosted and delivered from two physically separate, but logically converged, machine rooms located on the First Floor of the Treasury Building and on the Ground Floor of the adjacent Annexe Building.
- 2.3 ICT manages all the equipment in these two rooms and many other rooms across the Authority. ICT manages this work according to priorities to meet member and business needs, and by ensuring responsibility for the data rooms is spread across the team leaders in the various IT groups using them. There is no single manager except the Head of IT responsible for the operation of the rooms.
- 2.4 Both locations and facilities have developed and expanded over recent years to meet increasing business needs and in particular in order to deliver online, critical and non-critical public services. The need to meet central government delivery objectives whilst maintaining the continuity of existing business critical systems has resulted in a more operationally driven approach to the present arrangement, and in particular the power infrastructure, as opposed to a preferred strategic approach. The result is that the inevitable compromises and limits of this operational approach are now manifesting

themselves in some system reliability and continuity issues that require to be addressed.

- 2.5 At around 0100 on Wednesday 4th September 2013 an electrical fault occurred on the 132Kv National Grid network causing a Wirral wide supply network voltage dip, further causing disruption to the power supply and temporary loss of power to both the Treasury Building and Annex buildings. As a consequence of this voltage anomaly, a switchboard contactor device on the server room power distribution equipment fell out of operation and isolated the power supply. The contactor device is provided in order to allow the provision of emergency power isolation at each server room exit doorway and is reliant upon mains voltage to operate correctly. The device required manual reset, which resulted in a delay in re-energisation until a council officer was in attendance the next working day. Before re-energisation it was necessary for an ICT expert to evaluate the position, in order to ascertain any impact on general safety and systems condition prior to re-engagement of electrical/power supply.
- 2.6 The contactor device is not aligned to any external alerting or notification device and therefore its failure and need to reset was not understood until the ICT team attended between 0600 and 0730 on the morning of the 4th September. Although the ICT equipment is protected by a range of local Uninterruptible Power Supplies (UPS), these UPS devices are only designed to provide back-up individual machine power and not system power for approximately 20 minutes, to effect a safe close down of the ICT systems, which in turn would allow for a speedier “re-boot” when the power is back on. It should be noted that there has been much pre and post incident discussion regarding the lack of any emergency power supply by standby generator, etc. It is also important to note that the provision of a generator, in isolation from any other related remedial works would *not* have prevented this type of system failure.
- 2.7 Following the resetting of the contactor device on Wednesday morning, ICT network infrastructure components were soon brought online, but there was a problem with some parts of the Storage Area Network (SAN) on which a large proportion of Council data is held. IT Services made the decision to work on a solution to the SAN problem, supported by the supplier EMC, so that a full ICT service could be provided to the users rather than permitting users to log on with very limited access to their data. A limited ICT service was restored on Wednesday afternoon – login; access to stored email but no send or receive; no H or G drive access; no network printing; no intranet or internet.
- 2.8 By first thing on Thursday 5<sup>th</sup> September 2013, support from America had repaired the failed SAN and key services began being restored by mid-morning – login; email send/receive; H/G drive; Internet. By mid-afternoon all ICT services across the Council were reported as restored.
- 2.9 Members should be aware that “spikes” and “dips” occur regularly across the UK High Voltage (HV) network and the likelihood of similar incidents are likely to increase going forward. According to Scottish Power, in terms of HV supply Wirral Councils server rooms could not be better served in terms of external power supply infrastructure; they are fed by two substations, with each substation having a separate HV feed. Therefore if one of the substations was to experience a fault then the other can act in supplying the energy to the Council. There is, however, no standby power facility in place that would maintain critical business continuity in the event of a typical supply interruption or failure.

### **3.0 CONSEQUENCES OF THE DISRUPTION**

- 3.1 The most significant consequences arising from this latest disruption was both the length of time of the disruption – nearly 48 hours, and the simultaneous loss of both the ICT systems and the Council's telephony system.
- 3.2 This disruption left many of the Council's critical services vulnerable as a result of loss of both electronic data, such as records, etc and without a phone line. Immediate measures were put in place to use partner agencies telephone lines and mobile phones. This disruption also made communication, both internal and external extremely difficult. It again relied upon key messages being passed via the use of mobile phone and face-to-face meetings. Members will also have experienced the impact of this disruption, as their Council email will not have worked.

### **4.0 CURRENT IMPROVEMENT WORKS**

- 4.1 Following the disruption of the 4<sup>th</sup> and 5<sup>th</sup> September a number of improvements have been made to the ICT network. These improvements include removal of the power contactor circuits that switched off the power into the machine rooms after the "voltage dip". All the computer equipment will continue to be protected by the local UPS arrangements and a similar loss of service because of those particular factors will not happen in future. The cost of removal of the contactor devices, including all critical planning and resource, is some £15K. This work does not indemnify the ICT systems from other forms of power supply issue.
- 4.2 The fault which caused the loss of the SAN has been now been addressed with new control software and this fault will not recur if power is lost to the SAN.
- 4.3 Going forward, as part of the current Disaster Recovery and Resilience Review exercise, it has been discussed that a best fit and best value solution for the business could be to provide a full standby power arrangement (diesel generator and "house" UPS – as opposed to local UPS components) to a single machine room only which, using systems duplication/mirroring, could host critical only business services. Providing a robust power infrastructure to a single location with limited and distilled critical services standby only, it is estimated at this preliminary stage, would cost in the region of £200K for the works necessary to the power infrastructure alone. This estimated cost excludes related IT Services and internal resource costs.
- 4.4 It is strongly recommended that an industry standard critical services standby power arrangement be considered for implementation at the earliest opportunity so that optimum systems resilience and protection is afforded. This should be limited to critical only services, as costs are directly proportional to system extent.

### **5.0 RELEVANT RISKS**

- 5.1 Apart from the obvious reputational risks which an interruption of this nature causes, there is an acute risk to service users some of which are the most vulnerable in our communities.
- 5.2 However the risk of loss of power over a greater time than approximately 10 minutes will still cause all services to be lost. A standby generator and modifications to the power circuits into the computer rooms are necessary to protect from this eventuality.

## **6.0 OTHER OPTIONS CONSIDERED**

6.1 N/A

## **7.0 CONSULTATION**

7.1 N/A

## **8.0 OUTSTANDING PREVIOUSLY APPROVED ACTIONS**

8.1 N/A

## **9.0 IMPLICATIONS FOR VOLUNTARY, COMMUNITY AND FAITH GROUPS**

9.1 N/A

## **10.0 RESOURCE IMPLICATIONS: FINANCIAL; IT; STAFFING; AND ASSETS**

10.1 It is difficult to quantify the specific costs relating to the delay. The key resource implication is ensuring that appropriate prioritisation of the ICT resources is in place and that critical systems are supported as effectively as possible.

10.2 There will be a need to assign appropriate officers from ICT and other service areas to establish the critical services.

## **11.0 LEGAL IMPLICATIONS**

11.1 There could be legal implications from delays or failures to deliver key services.

## **12.0 EQUALITIES IMPLICATIONS**

12.1 Has the potential impact of your proposal(s) been reviewed with regard to equality?

No because of another reason which is:

The report is for information to Members and there are no direct equalities implications at this stage.

## **13.0 CARBON REDUCTION IMPLICATIONS**

13.1 N/A

## **14.0 PLANNING AND COMMUNITY SAFETY IMPLICATIONS**

14.1 None

## **15.0 RECOMMENDATION/S**

15.1 Members are requested to consider the details of this report and make any appropriate suggestions to the cabinet member and officers.

15.2 Members are asked to support the establishment of an appropriate officers group, to identify the Councils critical services, which will be served from the more robustly "protected" server room.

### 13.0 REASON/S FOR RECOMMENDATION/S

13.1 To provide Members of the Committee with an understanding of what caused the ICT disruption on the 4<sup>th</sup> and 5<sup>th</sup> September 2013 and highlight relevant network improvements to prevent a similar recurrence.

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### APPENDICES

None

### REFERENCE MATERIAL

None

### SUBJECT HISTORY (last 3 years)

Council Meeting	Date