

<b>Meeting:</b>	<b>NHS Grampian Board Meeting</b>
<b>Meeting date:</b>	<b>1 December 2022</b>
<b>Item Number:</b>	<b>10.2</b>
<b>Title:</b>	<b>Infrastructure Essential Equipment Replacement Programme - Replacement of the NHS Grampian-wide wireless network</b>
<b>Responsible Executive/Non-Executive:</b>	Paul Allen – Director of Infrastructure and Sustainability
<b>Report Author:</b>	Neil Gordon, Acting General Manager eHealth Paul Finlayson, Communications Manager Garry Kidd, Assistant Director of Finance

## 1 Purpose

### **This is presented to the Board for: Decision**

- Approval – approve the replacement of the existing outdated wireless network across all NHS Grampian sites and locations.
- Approval - Delegate authority to the Board's Director of Infrastructure and Sustainability to authorise the necessary procurement and to allocate funding to the project as appropriate from the Board's formula capital allocation in the 2022/23 and 2023/24 financial years, not to exceed £3.4 million.

### **This report relates to:**

- Other - Essential Infrastructure Replacement
- Service Transformation Through Digital Strategy

**This aligns to the following NHS Scotland quality ambition(s):**

- Safe
- Effective
- Person Centred

## **2 Report summary**

### **2.1 Situation**

#### **Equipment Replacement Risk assessment and Prioritisation**

The Board's Equipment and Medical Devices group, accountable to the asset Management group, is tasked with ensuring the risk assessment, peer review and prioritisation of replacement equipment requirements in line with simple risk criteria:

- Reduced risk of harm and improved statutory compliance e.g. fire/HAI (**safe**)
- Improved access, quality and efficiency of key diagnostic processes (**effective**)
- Impact on patient experience and environment (**person centred**)

This approach to risk assessment also supports the key strategic commitment as described under Pathways within "Plan for the Future" through alignment with Access.

Following this approach, the Board's Equipment and Medical Devices group has identified the NHS Grampian wide wireless network as significant assets at high risk of failure and therefore a priority for immediate replacement.

### **1.2 Background**

#### **1.2.1 Description of the service**

NHS Grampian first adopted wireless network technology in 2010. The wireless network throughout the Foresterhill campus consisted of circa 1400 wireless access points (WAPs), took 7 months to install and was completed in September 2010.

In 2011 Summerfield House, Dr Gray's, Cornhill, core parts of Woodend, Elmwood & Roxburgh had wireless installed, circa 950 WAPs in total.

In 2014, Woodend was revisited to provide full coverage throughout the site, community hospital wireless was installed and GP sites got a single wireless hotspot, circa 450 WAPs in total.

Today, NHS Grampian has over 3000 wireless access points throughout the organisation, covering all NHSG sites. There are up to 9000 devices connected to the wireless network at any given time.

Examples of the kinds of devices connecting to the NHS Grampian wireless network are laptops (including 'Computers on Wheels' facilitating patient information at the bedside), ASCOM wireless phones, corporate mobile devices, medical devices (e.g. patient monitors & infusion pumps), wireless label printers and patient/guest devices (to provide members of the public access to the internet while visiting NHSG sites).

### **1.2.2 Condition of current equipment and supporting infrastructure**

The infrastructure used to provide the NHS Grampian wireless network is out-dated (some of the equipment is now 12 years old compared to the 7 year normal expected lifespan of Information Technology (IT) network equipment), can no longer receive support or updates from the manufacturer and carries a high risk of failure.

- Most WAPs within NHSG are out of support and it is not possible to update their software, additionally it is difficult to source replacement parts.
- Often electronic devices that were manufactured and installed at the same time fail at roughly the same time and the lack of availability of compatible replacements could lead to extended periods, potentially indefinitely, without wireless access in any affected areas
- The central controllers can no longer be updated, due to newer software not supporting the older WAPs.
- Security standards for the entire wireless network can no longer be maintained due to the age of much of the equipment. If a significant vulnerability were to be discovered, we would not receive a fix from the vendor and would remain at risk.
- Although the performance of the network is still within the standard operating parameters expected on installation in 2010, more modern equipment can now provide up to ten times the capacity per wireless access point in addition to being more feature rich and efficient.

### **1.2.3 Proposed procurement and project management arrangements**

Following agreement by the Equipment and Medical Devices group to prioritise replacement, the eHealth team initiated a procurement process using two existing National framework contracts for Wide Area Networks and for Digital Workplace Solutions. On conclusion of this process a preferred supplier has been identified to deliver all aspects of the project including hardware, software, licencing and professional services; communication with the preferred supplier will follow subject to the recommendation in 2.4 below.

The overall project will be overseen by the eHealth Communications manager. Most of the equipment is straight replacement and requires no invasive electrical or other infrastructure works. All cabling work will be supported by the eHealth team's in-house cabling manager. The installation programme will require 3 months of detailed design and preparation with a further 6-month programme for installation with the full replacement service anticipated to be fully operational during October 2023. The programme will be managed to ensure continuity of service throughout and a seamless transition as each area is enlivened on the new service.

## **2.3 Assessment**

### **2.3.1 Quality/ Patient Care**

Infusion pumps, patient telemetry monitors and computers on wheels are just some examples of devices connecting to the wireless network that are vital enablers of patient care and empower staff to provide effective patient care.

The guest/patient Wi-Fi service provides a platform for patients to maintain the vital communication they need with their families while in hospital. The service also aids their recovery and the quality of their care by permitting access to entertainment through their mobile devices.

### **2.3.2 Workforce**

Current workforce and resourcing challenges across NHS Grampian mean staff are reliant on the availability and functionality of the IT infrastructure. The wireless network performs a fundamental role in enabling staff perform their roles optimally, giving them the tools, flexibility and mobility required on a day-to-day basis.

### **2.3.3 Financial**

The capital cost of the project is estimated as £3.4m inclusive of VAT. This is broken down as follows.

	£million
Wireless Access Points (WAPs) and controller	1.7
Enterprise Agreement (7 years)	1.4
Installation and support	0.3
<b>Total Project Cost</b>	<b>3.4</b>

Note: The Enterprise agreement is a relatively new concept, which supersedes the need for a separate service agreement during the initial years of operation.

In this instance, it consists of a mandatory charge for each WAP allowing connection to the wireless system management platform and ensuring that each device has authenticated and licenced software to operate. All future software upgrades and fixes are also covered by the Enterprise agreement.

This arrangement will ensure a saving on the revenue budget of £75k per annum, being the service costs for the existing wireless network. It should also be noted that the current services charges reflect those areas of the network that are no longer supported and an equivalent support cost for the entire network would be £230k per annum, representing a total revenue cost avoidance of £1.6m over the 7 years of the enterprise agreement.

Capital funding of £3.4 million to cover the required investment has been prioritised as part of the Board's formula capital allocation split across 2022/23 and 2023/24 financial years. The formula capital allocation totals £13.7m annually and is made available to the Board specifically to address backlog maintenance and essential equipment replacement

### **2.3.4 Risk Assessment/Management**

Approval of the recommendations as outlined will assist in mitigating the Board's strategic risks number 3127 Aging estate "leading to denial of facilities" and number 3132 "Our plans may fail if we are unable to provide the level of digital capability needed".

Delivery of the project will mitigate the risk of extended potentially indefinite periods without critical wireless network service and the potential disruption to services that would result. The project is also essential to improve the resilience of our network and guard against the risk of vulnerability to cyber security attacks.

Risk management procedures are an integral feature of the project with a comprehensive risk register maintained monthly by all parties, and regular reporting of key risks to the Asset Management Group.

### **2.3.5 Equality and Diversity, including health inequalities**

A positive impact on patient experience will result. Key principles articulated in the "Plan for the Future" around demonstrating joined up, connected links with, and around people are embedded within the Project. There will be extensive engagement with all key stakeholders throughout the project.

### **2.3.6 Other impacts**

See 2.3.4 above

### **2.3.7 Communication, involvement, engagement and consultation**

As part of a wider infrastructure investment programme, a communication work stream has been put in place to engage with patients and staff around the changes and enhancements to physical space and equipment. A suite of communication documents will be developed and maintained throughout the project, to ensure ongoing active wider stakeholder engagement.

### **2.3.8 Route to the Meeting**

- Recommendation from the Equipment and Medical Devices group to prioritise replacement.
- Asset Management Group have agreed to prioritise the budget for replacement from the Board's formula capital allocation.

## **2.4 Recommendations**

The Board is asked to:

- Approval – approve the replacement of the existing outdated wireless network across all NHS Grampian sites and locations.
- Approval - delegate authority to the Board's Director of Infrastructure and Sustainability to authorise the necessary procurement and to allocate funding to the project as appropriate from the Board's formula capital allocation during 2022/23 and 2023/24 financial years, not to exceed £3.4 million.

**21 November 2022**