

London Borough of Hammersmith & Fulham

Report to: Cabinet

Date: 07/03/2022

Subject: CCTV Capital Investment Strategy

Report of: Councillor Sue Fennimore, Deputy Leader

Report author: Matthew Hooper, Chief Officer, Safer Neighbourhoods & Regulatory Services

Responsible Director: Sharon Lea, Strategic Director of Environment

Summary

Keeping our residents safe, ensuring our streets are crime-free, and tackling gangs and anti-social behaviour is a Number 1 priority for Hammersmith & Fulham (H&F). That is why we already have the most extensive CCTV network of any local authority in the country with 1,869 cameras monitored 24/7. To take our crime-fighting commitment to the next level, this report seeks approval for a capital investment strategy in the borough's CCTV network and infrastructure. This will give us not only the most extensive CCTV system in the country, but also the most technologically advanced. The cameras are monitored 24/7 from the Beavor Lane CCTV control room by a team of 11 Operators and one Manager. They consist of 581 cameras in public areas, 1,209 on housing estates and 79 mobile, deployable cameras which can be quickly located anywhere across the borough. H&F's CCTV system is used on a daily basis to investigate anti-social behaviour, identify criminals and allow us to take action. It is also regularly used by the police during live operations to identify criminals and bring them to justice. The murders across London of Sarah Everard, Nicole Smallman, Bibaa Henry and Sabina Nessa have brought into sharp focus our urgent duty to do all we can to protect women and girls in public places. Our extensive CCTV network plays a key role in keeping women and girls safe in H&F.

Maintaining and developing a state-of-the-art CCTV system is core to our efforts to tackle crime and anti-social behaviour. It is therefore essential that the CCTV system is maintained and that we take advantage of the benefits of new technology to improve and expand the ways the system can improve safety further. Modernising the cameras and transmission network will provide the ideal digital platform on which to build London's most efficient, effective and forward thinking CCTV system. The new digital platform will enable H&F to make use of the full range of benefits afforded by video analytics and automation. This includes using Artificial Intelligence to deliver a network of cameras able to 'think' and communicate independently. Cameras will analyse footage and be able to generate alerts through to the control room for operators to review. This will dramatically improve the rate at which the service detects crime and works with the Police to bring perpetrators to justice. It will also improve our response to anti-social behaviour. We will be using state of the art technology to keep our residents safe.

Police funding is the responsibility of national and regional government. However, cuts in police numbers combined with rising crime rates, gang crime and the number of shocking high-profile attacks against women prompted H&F to take the unprecedented step of using council funds to pay for crime fighting across the borough. Last year, the council launched its new Law Enforcement Team (LET) with 72 new Law Enforcement Officers to provide extra eyes and ears on our streets to help keep residents safe. We believe H&F's LET is one of the largest such teams anywhere in Britain. We have invested £4.6m a year to fund the LET operation and a further £1m for a new specialised Gangs Unit dedicated to safeguarding children and young people. The new enhanced digital CCTV capability will play a key role in supporting the ground operation provided by the police and the council's LET team and dedicated Gangs Unit. It will give H&F the most comprehensive and effective community safety offer in London.

Recommendations

That Cabinet:

1. Approves one-off capital funding of £5.365m (across 5 years) for investment in the Council's CCTV infrastructure, to be funded from an expected West London Alliance (WLA) grant (£0.9m) and general fund borrowing (£4.465m).
2. Approves one-off revenue funding of up to £0.1m to fund a detailed condition survey of the Council's CCTV network, required to secure estimated inward investment of £0.9m from the West London Alliance, to be funded from the annual corporate contingency budget for 2021/22.

Wards Affected: All

| Our Values | Summary of how this report aligns to the H&F Values |
|--|---|
| <ul style="list-style-type: none"> • Taking Pride in Hammersmith & Fulham | Investing in CCTV to help tackle crime and make our residents safer. |
| <ul style="list-style-type: none"> • Building shared prosperity | Providing a fully maintained CCTV service covering town centres and neighbourhoods provides confidence and security benefits for residents and businesses in the borough. |
| <ul style="list-style-type: none"> • Creating a compassionate council | Supporting families and young people by making streets safer |

FINANCIAL IMPLICATIONS

One-off capital funding of £5.365m is sought to fund the costs of upgrading aspects of the CCTV infrastructure in order to take advantage of new technology opportunities and improve reliability (£4.4m), a Programme Manager to oversee the upgrade (£0.24m over the four year programme) and an annual budget to fund major repairs and unavoidable replacement of the existing network (from 2021/22 and ongoing through the duration of the upgrade programme, £0.525m in total). As the upgrade work progresses the annual fault repair costs will reduce, which has been factored into the funding request. The capital funding request also includes integrating the body cameras and radios of the new Law Enforcement Team with the CCTV control room (£0.15m), as well as some other smaller works (£0.05m).

Officers have secured grant funding of £0.9m from the West London Alliance that can be used to part fund the requested capital investment programme. This is contingent on the Council providing a full and detailed condition survey of the current CCTV network to demonstrate need. One off revenue funding of £0.1m is requested to fund this survey, to be funded from the 2021/22 corporate unallocated contingency budget.

The remaining balance of £4.465m will be funded by the Council and increase the need for the council to borrow for a capital purpose (capital financing requirement). The current estimated annual revenue cost of borrowing is c£0.05m per annum for every £1m, or £0.285m per annum to fund the total investment (should the external grant not be confirmed). Risks around potential increases in long-term interest rates may increase that cost further. The additional revenue costs of borrowing to fund the capital investment will be incorporated into the Council's annual budget for the net cost of borrowing with appropriate funding from the available parking surplus contributions and balances. Where parking surplus contributions and balances are insufficient, any balance will need to be incorporated into the medium-term financial planning process. Should the council secure further external funding this would reduce the borrowing need.

The requested capital funding is summarised in the following table:

| | Value (£000) |
|--|-----------------|
| Network upgrade programme | 4,400 |
| Programme Manager (£60,000 p.a.) | 240 |
| Major annual repairs | 525 |
| One-off Law Enforcement Team integration | 150 |
| Other smaller works | 50 |
| Total Capital Funding Required | 5,365 |

*Finance implications completed by Kellie Gooch – Head of Finance (Environment),
31st January 2022*

Verified by Emily Hill – Director of Finance, 31st January 2022

LEGAL IMPLICATIONS

On the basis that this is an upgrade of CCTV in existing locations, there are limited legal implications. The Council will need to ensure that it continues to comply with the 12 guiding principles of the Surveillance Camera Commissioner Code of Practice and should consider undertaking an updated self-assessment.

Any new contracts, if required, to implement the CCTV network upgrade must be procured in accordance with the Council's Standing Orders and the Public Contracts Regulations 2015

Legal implications completed by: Angela Hogan, Chief Solicitor (Contracts & Employment), 20th January 2021

Background Papers Used in Preparing This Report - None

DETAILED ANALYSIS

Background

1. The Council's CCTV assets consist of fixed CCTV cameras, the associated transmission network and a smaller number of rapidly deployable cameras. The cameras are monitored 24/7 from the control room at Beavor Lane by a team of 11 Operators and one Manager (this excludes parking CCTV). All the IT servers necessary to control the existing cameras and record/store footage are also based at 43 Beavor Lane.
2. The Council's CCTV network of cameras is one of the most expansive in the country. The system currently supports 1,869 CCTV cameras (audit as at 31 March 2020) servicing both public areas (581 cameras - 31%) and H&F housing estates (1,209 cameras - 65%). It also supports 79 (4%) deployable cameras located across the borough.
3. As part of a system audit and validation exercise a range of issues have been identified which need to be addressed to ensure the CCTV infrastructure is secure and resilient. In addition, the majority of cameras require replacement due to their age. We will aim to recycle as many cameras as we can to reduce waste and minimise disposal costs (the cameras have minimal scrap value).
4. Modernising the cameras and transmission network will provide the ideal digital platform on which to build London's most efficient, effective and forward thinking CCTV system. The system improvements required for better resilience and security and the associated investment plan for years 1 to 4 are set out in section 5.

Key Findings – Audit & Validation Exercise

5. The audit and validation exercise undertaken in 2021 identified some major issues which require rectification for the CCTV network to operate as it should. These issues relate to the transmission network (underground cabling), the network switches (which join the cameras onto the infrastructure), and the wireless transmission network (our backup wireless CCTV transmission capability).
 - The transmission network is made up of ageing materials that are now prone to failure. Our fault repair costs are substantial partly as a consequence of this.
 - A large number of the network switches which connect cameras on to the network now require replacement to prevent faults developing and improve security.
 - It is necessary to upgrade our wireless transmission infrastructure in order to maximise the security of the network. Wireless transmission is used for any camera that cannot be connected directly on to the physical fibre network.
6. The mobile deployable CCTV cameras rely on cellular data transmission rather than the Council's fixed network. They are costly to operate and have very limited data capacity which results in them stopping and requiring manual intervention. These units are heavily relied on and there are more capable and reliable units available on the market.
7. An annual planned capital expenditure programme is required to replace the entire CCTV system and transmission network over a four-year period (see section 5).

Maintenance & Repair Costs

8. The Council's new CCTV maintenance contract is split in to two key components - a fixed protective preventative maintenance element including an annual service of the control room, transmission network and cameras (£85,000 per year and provided for in the existing CCTV revenue budget); and a variable agreed schedule of rates element covering ad hoc work and fault rectification. Network fault repairs are currently costing circa £12,000 per month and are currently unbudgeted (£150,000 per year). A fault repair budget (i.e. maintenance which is required to keep the system online and operational) is required to cover costs of unavoidable maintenance on the current network until it is replaced as part of the programme set out in this report. The annual cost of this is expected to reduce as the upgrade work progresses. As such, a one-off budget of £525,000 is required to fund fault repairs and unavoidable maintenance for 2021/22 (£150,000) and the four year CCTV investment programme (£375,000 across the four years).

9. Additional one-off capital funding is required in 2021/22 to fund the integration of the new Law Enforcement Team body cameras and radios with the CCTV control room (£150,000) and other smaller works within the year (£50,000).

West London Alliance Funding – “Fibre West”

- 12 An opportunity for additional funding to support the upgrading of the CCTV ducting network has been pursued by H&F officers through the West London Alliance “Fibre West” digital programme.
- 13 This Fibre West programme will see the deployment of £7.9m of grant funding across seven west London boroughs to install new gigabit fibre and ducting connections to public buildings in areas with poor connectivity. The new fibre connections will have a transformative effect for digital inclusion, addressing ‘not spots’ (where fibre connections are slow) across growth and regeneration areas and providing businesses, public buildings and residents with cutting edge fibre connectivity to their premises.
- 14 This will require the installation of ducting and fibre to priority sites and areas across west London. Over 50 potential sites which could bring the greatest benefits in terms of connections and enabling infrastructure in the borough have already been identified for further analysis. In terms of delivery, H&F is in a unique position compared to other boroughs. This is because the existing CCTV ducting network across the borough already provides much of the infrastructure needed to support the extension of the fibre network, albeit the condition of the ducting needs improvement or renewal. Many of the potential ‘Fibre West’ H&F sites identified sit close to the existing ducting network.
- 15 Officers have therefore proposed to the WLA that rather than invest in a new separate private sector owned fibre network to connect new sites, more significant value could be derived from the investment being directed towards upgrading and replacing the existing council owned CCTV fibre network. Using the existing network has the potential to deliver the digital inclusion objectives whilst also part funding the ducting upgrade. Upgrading the existing network rather than create a separate one would also accelerate the delivery of the programme to enable the extension of the ducting and fibre network into identified public sector sites adjacent to the existing network infrastructure.
- 16 WLA has agreed in principle to this approach which would provide funding in the region of £900,000 for the borough. Further details including relevant milestones are currently awaited from the WLA team.
- 17 In order to take forward this opportunity, a full and detailed condition survey of the CCTV network will be needed to demonstrate need and inform the selection of priority sites for digital connections. Undertaking a survey of the full system is a significant undertaking. Prices obtained have indicated the cost would be in the region of £80,000 to undertake the survey (£40,000 per

month for 2 months). A further £20,000 is required to formally record the survey findings on the Council's GIS system and asset maps.

CCTV Service Strategy

- 18 The strategy set out below identifies the key objectives being pursued through the CCTV upgrade programme:

Strategic Aim

- To develop our existing CCTV network into a state of the art, fully digital system capable of using artificial intelligence to reduce crime and increase safety and security in H&F.

Objective 1 - Artificial Intelligence

- **Auto fault detection** – the system will be able to identify and locate faults immediately, removing the need to diagnose faults manually which can take several days.
- **Analytics** – cameras that can analyse a scene and identify what is likely to be happening.
- **Incident Management** – once an incident is identified the system will alert the control room to review the relevant camera(s)

Objective 3 - Resilience

- **Fewer faults** – the upgrade will provide a newer, more robust system with less downtime meaning better camera coverage.
- **Improved Security** – with upgraded cabling and transmission infrastructure the CCTV data will be more secure.
- **Rapid Deployment** – as part of the upgrade we will invest in a new suite of 79 mobile, rapidly deployable CCTV cameras to monitor emerging crime and anti-social behaviour issues.

Objective 3 - Efficiency

- **Repair costs** – The upgraded system will be more resilient to faults and therefore cost less to maintain
- **Pro-active alerts** – as the cameras will detect certain incidents themselves this reduces pressure on the CCTV staff who will be alerted to incidents via an interface.
- **IOT Sensors** – the new infrastructure will be able to transmit data from other , non crime or ASB related, 'Internet Of Things' assets installed across the borough.

- 19 As a result of upgrading the system to a new digital platform, the service can make use of the full range of benefits afforded by video analytics solutions and automation. This includes the intelligent automation options provided by having a network of cameras able to think and communicate independently. Cameras will analyse footage and be able to generate alerts through to the control room for operators to review. This will dramatically improve the rate at which the service detects crime and disorder as well as allowing auto-detection of faults meaning less system downtime.

Capital Investment Plan

- 20 A four-year planned capital investment programme is required to replace the entire CCTV system and transmission network, at a total estimated cost of £4.4m (as summarised below). A Programme Manager is required to oversee the upgrade programme (£60,000 capital funding requested for each year 2022/23 to 2024/25).

2022/23 Year 1 – £1.2m investment

- Survey full fibre infrastructure – replacement of already damaged fibre to SWA (armoured);
- Survey entire estate to replace with Single Mode SWA;
- Purchase ongoing support for Hik Platform;
- Upgrade to latest version 2.01 Hik-Central roll out;
- Upgrade all wireless links to 60GHZ;
- Consolidate main node recording hardware to enterprise solution;
- Replace main switching hardware with fully managed and future proof 10Gig;

2023/24 Year 2 – £1.2m investment

- Implement network monitoring tool of all devices;
- Replace all redeployable assets;
- Commence migration away from existing analogue platform;
- Commence replacing all estate head end installation with correct enclosures etc and power; &
- Review camera location and need.
- Replace fibre cabling with single mode, links to main nodes first;
- Commence replacement of all remaining analogue cameras for IP including media converters;
- Replace all remaining switching hardware for managed;
- PSIM overlay (bring in other services into one platform); &

2024/25 Year 3 – £1m investment

- Become full digital platform (this would then enable Parking/Traffic Enforcement to go automated if required);
- Replace fibre cabling with single mode; &
- IOT sensor data.

2025/26 Year 4 – £1m investment

- Control room – full integrated videowall solution;
- Implement analytics solution; &
- Control room reconfiguration (providing more space for more cameras to be monitored).

Reasons for Decision

- 21 Resident safety is one of H&F's top priorities and maintaining an effective CCTV system is core to our efforts to tackle crime and anti-social behaviour. H&F's CCTV system is used on a daily basis to investigate anti-social behaviour, identify perpetrators and allow us to take action. It is also regularly used by the police during live operations to ensure criminals are caught and

brought to justice. It is therefore essential that the system is maintained and that we take advantage of the benefits of new technology to improve and expand the ways the system can improve safety further.

- 22 The current CCTV infrastructure is ageing and, in many areas, no longer of an appropriate specification. These two issues combined have led to regular faults occurring. Due to the fragility and partially analogue nature of the system it takes longer to diagnose these faults and the repairs are more costly. On a number of occasions CCTV has been inoperative across large parts of the borough due to major faults.
- 23 We are aware of a number of weak spots across the network which are more prone to being damaged due to various factors. If these faults do materialise we know we will not be able to get the system back online unless whole sections of fibre are replaced which will be costly and time consuming. It would be far preferable to replace and upgrade these areas pro-actively prior to any major faults.
- 24 H&F is known for having an extensive and technologically advanced CCTV system. In order to safeguard our reputation in this area we need to invest in the system and modernise. Doing so will mean we can continue to keep residents safe by tackling crime and anti-social behaviour.

Equality Implications

- 25 As the proposal is to upgrade the CCTV network rather than change its scope or use the equality implications for this proposal are considered to be neutral. Crime affects all residents in H&F and the aim of the CCTV system is to protect our residents and help them feel safer as they go about their lives.

Risk Management Implications

- 26 The report recommends funding a detailed infrastructure survey which would support an application for funding to the West London Alliance for an estimated £900,000. This is in line with the Council objective of being ruthlessly financially efficient. The proposal is consistent with the CCTV Service Strategy which seeks to help tackle crime and make residents safer. Ensuring that a fully functioning, comprehensive, secure and future-proofed solution is in place is a key component providing confidence and security benefits for residents and businesses in the borough's town centres and neighbourhoods.

Implications completed by: David Hughes, Director of Audit, Fraud, Risk and Insurance, 21st January 2022

Climate and Ecological Emergency Implications

- 27 The main climate and ecological impacts of the change are relatively low with the main impacts coming from the disposal of hardware and replacement with newly manufactured equipment. We have investigated whether the new system can be entirely cloud based to avoid having to purchase a substantial

level of hardware but due to the need for maximum resilience the system will need to be both server and cloud based. However, one of the main benefits of the upgrade will be increased system resilience and therefore greater sustainability.

Implications verified by Hinesh Mehta, Strategic Lead – Climate Emergency, 25th January 2022

LIST OF APPENDICES:

None