

Report of the Director of City Strategy

Review Report - York's Closed Circuit Television System

Summary

1. This report informs Members of the current status of the Closed Circuit television (CCTV) system in the city, the development work that is ongoing and provides information about potential future enhancements. This report is a position statement only and Members are not asked to make decisions.

Current Status

2. The City Council is currently operating a CCTV System of 60 cameras throughout the City. This system, parts of which are now over 15 years old has been developed using traditional analogue technology and comprises the following elements;
 - 60 cameras with fibre-optic connections to;
 - A central communications and switching facility at St Leonard's Place;
 - Digital recording
 - A control room at Fulford Rd Police Station (staffed 24 hours per day)
3. The cameras generally fall into three groups; those which are primarily used for monitoring the City Centre, those which are primarily used for monitoring traffic conditions and those which are used to monitor the operation of car parks. The system is monitored from Fulford Road Police Station in a control room that is operated and staffed by City Council personnel but who work in close co-operation with Police colleagues. The control room is fitted with two control keyboards capable of controlling the cameras, 27 display screens and various video recording systems. A further control keyboard is available within the Police Station for use during emergencies and major incidents, and further two keyboards and display screens are located at St Leonard's Place and used mainly for traffic monitoring. CyC pay no rent for the use of the accommodation at the Police Station.
4. At the heart of the CCTV system is the communications and switching equipment located at St Leonard's Place. This equipment collects the images from the cameras and distributes it to the users and recording facilities and allows the users to operate the pan, tilt and zoom controls of each camera. At the core of this control equipment is a Matrix – basically a large video

switch that allows signals from any camera to be sent to any control keyboard or display screen. This Matrix has recently been replaced and now provides for the capability of accommodating 128 cameras.

Digital Video Recording

5. The upgrade of the matrix also included a move to fully digital recording. This change brought with it the following benefits:
 - Reduction in revenue of £6000.00 per annum
 - The storage of images at much higher quality, and hence be more suitable for use as evidence
 - Automated retrieval of images
 - The ability to allow images to be shared (under strict security conditions)
 - Removal of the reliance on magnetic tape storage, which is highly fallible. Storage of data on back-up hard drives is far more resilient
6. One unexpected side effect of the change to digital recording has been a significant increase in workload for Network Management staff based in St Leonard's Place (where the digital recording equipment is based). Police requests for copies of the recordings have multiplied due to the high quality and searchable functionality of the system. Each request requires a search to be undertaken and then the appropriate images downloaded onto a CD.
7. Initially the demand from the police occupied up to 2 hours a day of the Technicians time and the consumption of large volumes of CD's. Demands were also being made for access to recordings at week ends and in the evenings. Representations to the Chief Superintendent resulted in all requests for recordings being channelled through a single police employee who vets the request for need and urgency. The police also agreed to supply all the CD's required and to seek approval for the installation of a dedicated 'slave' recording facility within the police station so as to eliminate the involvement of CyC staff.. The vetting process has reduced the time commitment for ourselves but it is still of concern as it amounts in a typical week to some 16% of an fte . The police have still to obtain approval for the provision of the 'slave' recording arrangement some 7 months after first suggested. (The cost of this facility would be in the region of £15,000).

Reliability

8. The age of the original equipment was a major source of breakdowns in 2004/2005. Repairing these was a challenge due to the limited funding then available and officers had in effect to cannibalise broken equipment to find spares to keep installed equipment functioning due to budget constraints. An injection of funding in 2006 allowed the worst of the original equipment to be replaced along with the replacement of the Matrix. Since that time reliability has been excellent at in excess of 99%. Failures are in general repaired the next day so individual camera downtime is also now limited.
9. Attacks on cameras at Burton Green and within Ashton Park have been a regular feature since they were installed and both have as a result been out of action a number of times. A sustained assault in April resulted in the whole of both systems being destroyed. They have now been repaired at a

cost of just under £10,000. Other cameras around the city have not experienced any vandalism issues at all.

10. For a period of close to 9 months the service was unable to operate a 24/7 monitoring regime due to the inability to recruit to fill a vacancy in the night operator establishment despite three attempts. The working of overtime within the team helped to minimise the impact but the small size of the overall establishment meant that inevitably reduced hours had to be operated. In general weekends were covered up to 1am but weekdays monitoring ceased at around 9pm. Full time 24/7 monitoring resumed on May 24 when a new appointment completed the mandatory 6 weeks Security Industry Board (SIB) training and received his licence to operate. (All CCTV operators monitoring public system are required by law to hold an SIB licence before they can be employed).

Budget

11. The total 2007/8 budget for the CCTV service is just under £356,000 (comprising: Employees - £158,000; Operational - £198,000).

Current Development of the CCTV System

Background

12. In some locations **permanent/fixed** CCTV installations are the appropriate solution but in others the need is perhaps only seasonal or indeed might just be for so long as is necessary to encourage people to move on/discourage an particular activity. Whilst the former is a well understood system with a significant amount of choice of equipment and suppliers options for the latter are virtually non existent. Although there are cameras that can be relocated from place to place they are not ones that can be viewed in real time from a central control room. The vast majority of such cameras simply record what they see for future viewing.
13. Officers have been developing a truly **relocatable** camera that can be viewed in real time from the CCTV Control Room. The *concept* is to have a unit that can be connected to a power supply and attached to a lamp column, with images viewable immediately in the Control Room. When the camera is not needed at that location it is moved to somewhere else. This approach will enable several of these movable units to be dotted around the city and located where police statistics or a local community show there to be a problem. It is envisaged that these units will be funded by Ward Committees or local organisations.
14. Whilst it appears that these relocatable units have the potential to fulfil a much needed role in the CCTV coverage of problem areas, other sites will not justify the expense of this type of camera. Sites where fly tipping is taking place or graffiti is being sprayed have a significant impact on the local environment enjoyed by residents but in themselves they could not expect to tie down a CCTV unit for the length of time necessary to permanently discourage the practice. All that is really necessary in this type of situation is the ability to alert some human agency to an activity that is ongoing so that direct intervention can be immediately mounted.

15. Officers are working on a third camera system - **Community**. A sum of £40,000 has been obtained (together with an ongoing £5,000 fund to cover running costs) which will enable 9 cameras to be placed in areas where low level but continuing difficulties need to be monitored.
16. The completed CCTV system will therefore have three 'layers'. These are:

Layer	Layer title	Brief Description
1	Main	Fixed cameras monitored, controlled and viewed through the existing CCTV control matrix
2	Relocatable	Cameras which can be readily located and removed within the main city area, monitored, controlled and viewed through the existing CCTV control matrix. Via Wi-Max – subject to trials
3	Community	Fixed cameras working at lower frame rates monitored, controlled and viewed through a new internet based system

Detail of Layers

Main

17. This is described in the first section to this report.

Relocatable system

18. A commercial organisation is currently establishing a pilot communication within the city on behalf of a major employer and Officers are working with them on a no cost basis to test out the ability of their network to deliver the CCTV solution we require. This pilot will be based around the Hull Road/Tang Hall area and a test camera will be located so as to monitor the Tang Hall shops area. This camera is being funded by the Ward Committee.
19. Officers are also working with ITT colleagues to specify a communications network for the council as a whole that will meet the council's own needs as well as providing the connectivity required for the CCTV system.
20. A further test camera, funded by the Safer York Partnership, will be located either to observe the cycle racks by Lendal Bridge or those in Daveygate.

Community system

21. This system is based upon the use of standard internet technology. A Pan Tilt and Zoom (PTZ) camera will be located at a suitable point, connected to a power supply and a BT circuit.
22. As the PTZ control arrangement will use too great a communications capacity when activated the camera will have a range of 'presets' programmed in, which can be called up by an operator and which the camera will respond to. These presets can be altered by the operator.

23. It is proposed that of the £40,000 capital obtained , £3,500 will be allocated to the necessary image management systems within the CCTV Control Room.
24. It is further proposed that:
- 2 cameras be located so as to cover the Front Street, Acomb shopping area
 - cameras be located at 7 of the following 8 sites identified by the Safer York Partnership as being Anti social 'hotspots'. The exact sites will be selected after site surveys.

Bell farm Avenue
Bramham Road
The Village, Haxby
Junction Bishopthorpe Road/Scarcroft Road
Junction Melrosegate/Burlington Avenue
New Earswick centre
Salsbury Terrace
Burtonstone Lane shops

Between them these 8 latter sites have been the location of a total of 1622 criminal and antisocial behaviour offences in 2006

Future Development of the CCTV System

Background

25. The Council has embarked on a programme to build a wireless "Mesh" network around the City centre (a pilot for this was approved at the 6 January 2006 Meeting of the Executive Member for Planning and Transport and Advisory Panel). In theory this network will have the capability of carrying CCTV data through a private, revenue free network wirelessly from any point within the covered area to any other point, and will offer the opportunity to migrate a number of systems where communications leasing costs are now being incurred. Experience with the pilot has shown that the arrangement works for low volumes of data but the density of the network necessary to carry CCTV data within the geography that is York will need to be far greater than originally thought. That conclusion called into question the financial viability of the project and thus a similar concept, a WiMAX system has been identified as a possible cost effective solution.
26. The WiMAX system is similar to the Mesh arrangement and has the potential for revenue cost savings when compared to current arrangements. It is, however based upon technology that has a number of central nodes which wirelessly interact with connected equipment, with the nodes being connected by a hard wired circuit. It is this revised communications system that is to be the subject of the trial mentioned in paragraph 17.
27. The future roll out of the Relocatable CCTV layer and the conversion of the main layer depends upon the success of these trials. At the time of writing it is anticipated that the trial will progress towards the end of the Summer/early Autumn. If the company decides not to proceed in York then officers will need to identify other options, such as seeking an alternative organisation.

28. There are significant benefits to be had by migrating the existing cameras to WiMAX network and using the network to deploy new and connect existing cameras. In brief, the benefits are;
- ❑ Reduced revenue costs – the network is owned and operated by the City Council, whereas the existing fibre-optic link are owned by BT and leased to the Council.
 - ❑ Quick deployment of new cameras – anywhere in the area covered by the network, new cameras can be erected and connected to the CCTV system, (subject to securing any necessary approvals & power supply). This is particularly useful where camera enforcement is being considered under the new Traffic Management Act 2005, as it means cameras can be quickly placed where they are needed.
 - ❑ Cheaper cameras can be used where appropriate – at locations where cameras are needed solely for traffic monitoring (rather than enforcement or evidence gathering), less costly web-cam type cameras can be installed with minimal effort (such cameras can even be made fully mobile and fitted to vehicles).
 - ❑ As the cameras using the network will essentially be using Internet based technology, images from the CCTV system can be published to the web. This would offer the public, instant access to live images of traffic conditions around the City. The principal of this has been tested over the last 18 months using a webcam located on Tadcaster Road.
 - ❑ The move to a digital system will allow progress to be made in integrating the CCTV system into the wider TCMS system. This will allow access to CCTV images to be available to officers engaged in managing the highway network using the TCMS, and hence deliver a higher level of integration (and usability) of both systems. Again, this offers real benefits in delivering the Council's obligations under the Traffic Management Act 2005.
28. The deployment of the new network also means that expansion of the main CCTV system becomes more affordable and hence greater coverage can be provided for any given allocation of money. For example a digital camera linked to a WiMAX system should reduce costs by in the region of £20k, in comparison with an analogue camera.

CCTV network coverage expansion

29. Working with the Crime Analyst of Safer York Partnership, gaps in the coverage of the main CCTV network have been identified. It is estimated that 16 new units would be required to close these gaps. The identified sites are show diagrammatically in Appendix A. These are only generalised since no detailed investigation has been undertaken to determine the exact field of view of any camera, etc. The precise camera location is also notional since there may be Planning or other considerations that preclude the use of the site identified.

30. Given that funding to deliver all 16 cameras may prove problematic, crime statistics have been analysed concerning all 16 sites and the potential new units ranked in order of priority relative to the amount of CCTV detectable crime within their area of coverage. This analysis is given in **Appendix B**. The camera priority order is:

Rank	Location	Rank	Location
1	Coppergate	9	Goodramgate/College Street
2	Low Ousegate	9	Lendal/Museum Street
3	Jubbergate/Newgate Market	11	Blake Street/Museum Street
4	Clifford Street/Lower Friargate	12	Monkgate/Lord Mayors Walk
5	Tanner Row/Rougier Street	13	Castlegate/Coppergate
6	Coney Street/New Street	14	St Andrewgate
7	Toft Green	15	Minstergates/Stonegate
8	High Petergate/Duncombe Place	16	Tanners Moat

Monitoring

31. The current CCTV staffing levels comprise a total of four daytime operators and three night time. Whilst there is provision for a CCTV relief operator on the establishment this post is not directly funded, it is supported through the overtime budget. Attempts to recruit have proved unsuccessful, as applicants have been deterred by the commitment (the training requirement for a relief operator is identical to that for a permanent operator) with no guarantee of regular employment.
32. This level of establishment has been shown to present challenges in providing the expected level of service. For example, during recent attempts to fill a vacancy, the monitoring service has been very dependant upon voluntary overtime working to cover the gap. In due course Members will need to consider how this lack of resilience can best be addressed. Potential options may include:
- Increase the establishment
 - Decrease the hours that the system is monitored.
32. The first has budget and recruitment implications (recruitment into CCTV operators posts has always been very difficult). The second has relationship issues with the Police and local community.
33. The small size of the establishment is also an issue at weekends. Generally during the day having four operators means that for known busy periods the system can be monitored by two people. That ability does not exist at night and all night operators have to work alone. Whilst generally speaking this is not a problem during the week at weekends it can become very difficult. There are regularly occasions on a Friday, Saturday and Sunday night when

a shift starting at 11.30 pm is responding to calls and directing police responses right through until 5 or 6am with hardly any time for a break.

34. Again in due course members will need to consider how best to address this problem. Potential options may include:
- ❑ Increase the weekend establishment
 - ❑ Hand over the management of the system at weekends to the police and stand down CyC staff
 - ❑ Obtain 'in control room' assistance from the police at weekends as part of normal police duties
35. Again recruitment of someone just to work weekend nights is likely to be an issue as is obtaining a binding commitment from the police to provide staff week in and week out. Members will also need to consider any implications concerning the Data Protection Act, Civil Liberties, the Security Industry Board and the council's own Code of Practice. Budget is similarly likely to be an issue to be considered.

Replacement budget

36. CCTV equipment will, like all electrical equipment, break down. The instances of breakdown will increase with use and with age. With the CCTV system in constant use and relied upon by so many it is crucial that it remains available and that its downtime is minimised. At present due to a large injection of funds in 2006 most of the system is in a good state of repair. However, elements are still over 15 years old and what is in good condition now will deteriorate within the next few years. The budget structure does not recognise the need for continual renewal of existing equipment and thus at some point in the not too distant future there will again be a crisis like that faced by the council at Christmas 2005.
37. Ideally the council should establish a suitable budget to enable the equipment to be renewed on a rolling basis and thus prevent sudden equipment failure or failure which cannot be repaired due to lack of available budget.

Corporate Priorities

38. The CCTV system presently serves a dual function, both in the monitoring of the use highway network, and thus providing a means of managing traffic conditions, and also in the monitoring of potential criminal and anti-social behaviour. The former function being in accordance with the Council's service objectives:
- SO19 – Manage the highway network so as to minimise congestion and delays.
- SO20 – Ensure the effective enforcement of regulations/standards relating to parking and work on the highway.
- The second ties in with SO21 – Contributes to the objectives of the Safer York Partnership.

Implications

Financial

39. As the report is a position statement there are no direct financial implications. Future reports making recommendations on further development of the CCTV system will include such implications. Members are asked to note Table 2, which outlines the approximate range of future costs which could be linked to future decisions on the development concepts.

Table 2 – financial dimensions

WiMAX/Mesh network	£350,000	Currently covered area only*
16 Mesh enabled CCTV cameras to complete the main system	£144,000	
5 relocatable cameras	£75,000	
Increase in CCTV establishment by One daytime operator	£20,500	
Increase in CCTV establishment by One nighttime operator	£23,500	
increase in CCTV establishment by a weekend only night time operator	£19,000	3 shifts of 10 hours each
Rolling replacement budget	£50,000	see note **

- sites monitoring the A64 , Burton Green and Ashton Park would remain in the fibre optic system.

** This sum will allow all 60 cameras to be replaced over a 10 year period

Other Implications

40. There are no HR, equalities, legal, crime & disorder, IT or property implications at this time.

Risk Management

41. There are no risks associated with the recommendations of this report.

Recommendations

42. It is recommended that:

Members note the present status of the CCTV system, the ongoing development work, and the potential future development options.

Reason: As requested in the policy prospectus.

Contact Details

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Report Approved**Date** 13/7/07**Specialist Implications Officer(s)**

Financial – David Gladders, City Strategy Finance

Wards Affected: *List wards or tick box to indicate all***All**

For further information please contact the author of the report

Background Papers

York's Traffic Congestion Management System (TCMS) – Achievements and Development – report to the 6 January 2006 Meeting of the Executive Member for Planning and Transport and Advisory Panel

Upgrade of York's Closed Circuit Television System - report to the 1 February 2006 Meeting of the Executive Member for Planning and Transport and Advisory Panel

Annexes

Appendix A – Geographical Location of Proposed New Cameras

Appendix B – Installation Prioritisation for Proposed New Cameras