Public Space CCTV
In Scotland:
Results of a National Survey of Scotland's Local Authorities

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of the Scottish Centre for Crime and Justice Research (SCCJR). The national survey on which this report is based was designed, distributed and collected by the Scottish Government. SCCJR was asked to analyse the data these surveys produced. Jackie Palmer of the SCCJR prepared the dataset from the original survey forms, on which this analysis is based.

EXECUTIVE SUMMARY

1.1   Scottish Government, recognising the lack of an evidence base on Public Space CCTV in Scotland, designed, distributed and collected the survey on which this report is based. The research requested data from each of the 32 local authority areas in Scotland and was carried out between June 2007 and February 2008. The survey considered the scale and nature of the CCTV infrastructure in Scotland, the purposes for which CCTV is used, the procedures for data management, staffing and training, the evaluation of the impacts of CCTV, and, current funding and development plans.

Main Findings

1.2   Our research identified:

- There are over 2,200 public space CCTV cameras in Scotland.
- The majority of CCTV cameras and monitoring facilities are owned and controlled by local authorities. The police tend to monitor, on behalf of local authorities, more cameras than they own.
- Four key roles for public space CCTV systems are identified, these being to help: prevent and manage crime, the prosecution of offenders (including the provision of image evidence), to reduce the fear of crime, and, to prevent and manage anti-social behaviour.
- Most local authorities share CCTV images, intelligence or statistics data with partners and funders. However, there are no consistently applied information sharing protocols governing the access or type of data made available.
- There are no Scottish national guidelines governing the recording of incident management information captured on CCTV systems.
- There are over 350 people employed to manage and operate public space CCTV systems in Scotland. Most receive no formal training.
- Very few authorities undertake comprehensive evaluations of the effectiveness of public space CCTV systems.
- Over the period 2008 to 2010, the total cost of operating public space CCTV systems in Scotland can be expected to exceed £40 million.

Detailed Findings

Infrastructure

1.3   There are 2,149 fixed public space CCTV cameras in Scotland, which are complemented by 82 re-deployable cameras and 33 CCTV vehicles. A significant proportion

of these cameras are, in terms of current technological standards, quite old. CCTV cameras operate in a range of public spaces, inclusive of commercial, recreational and residential areas. However, the survey found little evidence of a formal or regular process to review the positioning of cameras once erected.

1.4   The majority of CCTV cameras and monitoring facilities are owned and controlled by local authorities. The police tend to monitor more cameras than they own. Where cameras are monitored from a central facility, just over one third of these facilities are used exclusively for this purpose, whilst the remainder share space with other services.

1.5   Most areas have two-way communication between their monitoring facilities and the police. Although the systems used vary across Scotland, there are now efforts in train to unify communications and the control and despatch system, called 'STORM', across Scotland. Around half have two-way communication with local businesses and a direct means of contact with other emergency services. A quarter enables telephone contact from the public. Approximately two-thirds of CCTV systems have the capacity to stream live images to the police for their observation.

The Role of Public Space CCTV

1.6   The survey asked respondents, retrospectively, to consider whether there was a specified purpose for the CCTV system when it was first installed in their area. Most respondents identified four key roles, these being: to prevent and manage crime, the prosecution of offenders (including the provision of image evidence), to reduce the fear of crime, and, to prevent and manage anti-social behaviour. However, only around half of the areas surveyed specified these aims formally. Of those that did, three-quarters thought these outcomes had been achieved. Where outcomes were not achieved, failures were attributed to factors other than CCTV. Examples of these factors included the capacity of the police to respond to incidents and the extent to which cameras acted as a deterrent for individuals involved in disorder.

1.7   The strategic direction and development of CCTV tends to be decided by local authorities, often with input from the police. In most cases, the operational and tactical use of CCTV also forms part of a targeted problem solving approach within local authority or community safety/planning teams. Only around half of the areas surveyed, however, regularly use CCTV to proactively search for incidents in progress. The remainder only use CCTV as a tool to assist in the answering of alerts and requests for information.

1.8   There are varying degrees to which stakeholder input determines the location of CCTV cameras across Scotland. The people and organisations that influence the positioning of cameras include the police, local authority community safety and anti-social behaviour

teams, CCTV operatives, local community representatives and councillors. The significant influence of police input in determining the positioning of cameras is notable given both the purposes for which CCTV is used and their limited ownership of CCTV operating systems.

Data Management

1.9   Nearly all areas share CCTV images, intelligence or statistics data with partners and funders. Information is most likely to be shared with the police, especially CCTV images. However, intelligence information (such as details of the location of graffiti) and statistics (such as aggregate data about the number of incidents witnessed in an area) are more widely shared than CCTV images. These two forms of data are most often shared with Community Safety Partnerships and Anti-social behaviour teams. Where data are shared, there are no consistently applied information sharing protocols governing the sharing of CCTV information and statistics.

1.10   All survey respondents are registered with the information commissioner. There are discrepancies, however, between the purposes to which CCTV systems are used and those for which it is registered. This highlights that the aims and projected outcomes for CCTV in Scotland are not always specified with a great degree of precision.

1.11   There are no national guidelines that identify the nature, and qualities, of incidents operators should record. Nor are there standardised procedures for the format in which incident logs are kept. There are significant variations in the information recorded between monitoring operations and police forces across Scotland. Benefit would come from harmonising data recording practices and data category definitions to support the development of a performance measurement framework for uses to which CCTV is used and the development of common information sharing data.

1.12   The systems used to view and store CCTV images vary widely across Scotland. The way data is captured and shared has implications for its 'usability', for example by various stakeholder agencies and in court proceedings. Only 16 of the CCTV recording systems surveyed were fully digital, and among these areas a range of compression techniques and refresh rates were used. Data is also stored for different lengths of time in different areas, and in no cases long enough to be available to criminal justice investigations where the footage is not identified for long-term storage within a month of recording.. The variation in the length of time for which images are stored limits the ability of the police to collect CCTV evidence about an incident retrospectively.

Staffing and Training

1.13   At the time of the survey there were 304 operators employed to control and/or monitor CCTV cameras. In addition, there were 65 supervisors employed. There was

significant variation in the ratio of supervisors to monitoring staff. There is wide variation in the number of cameras a single operator is expected to monitor. Among those authorities that employ staff to perform monitoring roles, operatives could be expected to control between 9 and 93 cameras.

1.14   There is little consistency in the level or type of training given to CCTV operatives across Scotland. Many receive just 'in-house' training. Only 7 authorities offered some form of formal education, ranging from college courses to Security Industry Authority (SIA) qualifications. Similar variation was found in the training provided in regard to the operation of CCTV equipment in compliance with legal standards such as the Human Rights Act, the Data Protection Act, and Regulation of Investigatory Powers (Scotland) Act (RIPSA). Finally, most areas with supervisors do not have specific CCTV management/supervisor training.

1.15   There is a need for progression towards uniform standards of training for CCTV operators and supervisors in Scotland. This training should be devised to enable operators and supervisors to make the most effective use of CCTV technology, to promote awareness of relevant legislation and good practice guidance. Since the issue of the survey, SIA regulation of the private security industry has come into force. Although this only applies at present to operations that subcontract CCTV monitoring out to private firms such as 'Remploy', some local authorities have nonetheless acted to further train operatives to the same SIA standard. However, universal accredited training would act to raise professional standards across Scotland and reassure the public about the professional use of CCTV as part of police, community safety and surveillance work.

Evaluation

1.16   Approximately one-third of authorities were able to provide examples of how they evaluate the success and impact of CCTV. However, there was no uniform approach to this evaluation and many authorities perform no evaluation at all. Of those that do strive to evaluate the impact of their CCTV system, most rely on the use of crime/incident statistics and public attitude surveys. The public attitude surveys tended to probe changing perceptions of crime, anti-social behaviour and the fear of crime. The frequency of evaluation ranged from monthly incident statistics and outcome monitoring with partners, through to biannual and ad hoc local perception surveys.

1.17   The various methods of evaluation, as well as the research questions employed, vary to such an extent across Scotland to render time-series and inter-area comparisons extremely difficult. Given the variation in the strategic purposes to which CCTV is put (and is planned to be put) across Scotland, there appears to be value in a detailed evaluation of the effectiveness of its application to these purposes, and following this, dissemination of best practice information among strategic planners and users of CCTV.

Funding and the Future

1.18   Twenty-seven areas were able to provide data on their annual revenue costs in operating a CCTV system. These data varied widely across Scotland. We can estimate the total annual revenue costs of public space CCTV systems in Scotland to exceed £9.3 million. Local authorities, Community Safety Partnerships and the police are the main sources of revenue funding.

1.19   Survey, respondents were asked to estimate the capital funding required, over the next 3 years, in order to *maintain* the current level of CCTV operation in their area. There was significant variation in the responses across Scotland. We can estimate the total capital maintenance required to maintain Scotland's current level of CCTV provision over the next 3 years to be £7.2 million.

1.20   In addition to the projected capital and revenue costs, some authorities have planned CCTV capital development (covering upgrading and expansion) projects for the next 3 years. Of the 20 areas that were able to provide data on this issue, 6 indicated that they had no capital development plans. We can estimate the total cost put on the capital expansion plans of the 14 remaining areas to be £5.8 million. Over the next 3 years, therefore, we can estimate the total cost of operating public space CCTV systems in Scotland to be £40.9 million. In stating this, we note that data was not collected for all authorities on each of the funding questions in the survey.

Conclusions and Recommendations

1.21   There are just over 2,250 public space CCTV cameras in Scotland. CCTV systems and monitoring facilities tend to be owned by local authorities. Over 350 people are employed to manage and supervise these systems. CCTV systems are heavily oriented towards the delivery of crime control and public safety. Significant resources are required to sustain CCTV operating systems over the next three years.

1.22   The research reported here supports the following recommendations.

- Given the investment in fixed-location cameras, a regular process of formal review of the suitability of their location, to ensure that they remain in places of most need, would seem to be a sensible requirement.
- There is a clear need for greater specification of uses to which CCTV is placed.
- There is a pressing requirement to develop standardised protocols in relation to data sharing.
- There is a need to harmonise data recording practices to support the uses to which CCTV may be addressed.

- There is a clear need for rapid progression towards uniform required standards of training for CCTV operators and supervisors in Scotland.
- Given the variation in the strategic purposes to which CCTV is put (and is planned to be put) across Scotland, there appears to be value in a detailed evaluation of the effectiveness of its application to these purposes, and following this, dissemination of best practice information among strategic planners and users of CCTV.

CONTENTS

1. BACKGROUND TO THE SURVEY DATA

1.1　　Scotland comprises 32 local authority areas. The data reported here refer to 29 survey returns. Of these, 28 relate to single local authority areas. The 29th is a return from 3 local authority areas (Stirling, Falkirk and Clackmannanshire), which are covered by one CCTV operation run in joint partnership with Forth Valley Police. The 32nd local authority, Aberdeenshire, has no public space CCTV within their area and so did not submit a return. One of the 29 returning areas (Shetland) was installing their public space CCTV system at the time of the survey: this was not therefore operational when the survey was returned.

1.2　　References to 'areas' in this report are therefore to the local authority regional boundaries which represent the jurisdiction of survey respondents, with the above exceptions.

1.3　　Unless explicitly related to private CCTV facilities, references to CCTV in this report are to public space CCTV.

1.4　　The survey was circulated to Local Authorities via their Community Safety Partnerships, who were to coordinate and collate responses to the questions for their areas questionnaire.

1.5　　The survey which generated the data reported here was produced by the Scottish Government and circulated in July 2007. The last survey returns were received in February 2008.

1.6　　We have not appended a copy of the survey instrument to this report. A copy of the survey instrument is held with the data generated on file at the Scottish Government.

1.7　　The categories represented in the tables and charts in this report are not always the same categories used in the survey responses. In many cases it was possible to consolidate several categories in a given range of answers to a particular question into new categories which would most effectively draw attention to patterns of thematic similarity in the data.

2.   INFRASTRUCTURE

2.1   There are 2,135 fixed public space CCTV cameras in Scotland. At the time of the survey Shetland was planning to install cameras, which would take the total of fixed cameras (i.e. not including redeployable and mobile camera vans) to 2,149.

2.2   This gives an average of approximately 80 cameras per local authority. There is, however, wide variance in the numbers of cameras owned by the different local authorities. The numbers range from 13 in the Outer Hebrides to 408 in Glasgow. The highest concentrations of cameras are found in urban areas: as well as the 408 in Glasgow, there are 250 in North Lanarkshire, 194 in the Forth Valley, 150 in Edinburgh City, and 116 in South Lanarkshire. In total these five areas account for 52% of the fixed cameras in Scotland.

2.3   Nearly all of these fixed CCTV cameras are moving (i.e. pan and tilt). Less than 3% are static.

2.4   In addition to these fixed cameras there are 82 re-deployable public space CCTV cameras in Scotland, and 33 CCTV vehicles. These mobile cameras are found concentrated in around half of Scotland's local authorities: 14 local authorities have no mobile cameras, and 19 have no CCTV vehicles. Glasgow has the most mobile/vehicle based cameras. Discussions with Community Safety partnerships suggest most cameras are installed in urban areas.

2.5   In total there are 792 Public Space CCTV cameras capable of Automatic Number Plate Recognition (ANPR) in Scotland. Although these cameras have ANPR capacity, only around 20% of them are currently used for this purpose. North Lanarkshire has the most ANPR-capable cameras.

2.6   A significant proportion of the CCTV cameras in Scotland are, in terms of the speed of current technological advances, quite old. Only 28% of Scotland's cameras are 3 years old or less; 35% are between 4 and 7 years old; and the remaining 37% are 8 years or older. The normal life span of a camera is typically 7 to 10 years so the CCTV camera estate is aging. This will impact upon maintenance costs and need for capital investment to replace failing units.

2.7   The most popular types of public space monitored by CCTV in Scotland are city centres, towns high streets, parks and other recreational open spaces, housing estates and residential areas, shopping centres, and car parks. Other less popular, but still significant, targets of CCTV monitoring are educational establishments, hospitals and GP surgeries, public buildings such as libraries and museums, business premises, public monuments, and thoroughfares such as roads, bridges and subway entrances.

2.8   One particular aspect to emerge from the survey is the absence of formal review processes on the positioning of cameras once erected, to ensure they remain in places of most need, or that give the most benefit. Of the 28 areas that responded to the question, 21 had no formal review processes generating information and review of fixed pole or wall-mounted camera locations unless and until these cameras require upgrading. Given the prevalence of these types of fixed-location cameras, a regular process of formal review of the suitability of their location would seem essential.

2.9   The majority of CCTV cameras are controlled or monitored by the local authority or the police. The police monitor more cameras than they own.

2.10   As Table 1 shows, most CCTV monitoring in Scotland operates without interruption (i.e. 24 hours a day, 7 days a week). Notably, only one local authority has no live monitoring at all of its CCTV.

Table 1: How often does your CCTV monitoring operate?

Time Period	Number of Areas
24 hours a day, 365 days	19
Everyday but not 24 hours (commonly evenings)	6
Weekends and not 24 hours (commonly evenings)	3
No dedicated live monitoring occurs	1

2.11   Where cameras are monitored from a central monitoring facility, just over one third of these facilities are used exclusively for this purpose. The remainder commonly include some other services. These include services such as telephone help and advice lines for members of the community, and community alarm monitoring/response. Only three local authorities' central monitoring facilities have radio links to local businesses or monitor private buildings.

2.12   Most areas have two-way communication between their monitoring facilities and the police. The types of system used vary across Scotland. At the time of this survey around half have two-way communication with local businesses, and direct means of contact with emergency services other than the police. A quarter have a publicised telephone contact number for public use.

2.13   Most areas (19) have the capacity to stream live images to the police for their observation when an operator sees an incident in progress. Most do not, however, have the capacity to stream these images to other emergency services, other enforcement agencies or local authority/community action teams.

2.14   The vast majority of CCTV cameras in Scotland are owned by their respective local authorities. Local authorities have an ownership role in 25 out of the 29 areas surveyed. The police tend not to own CCTV cameras (some level of police ownership was restricted to 3 local authority areas). Camera ownership is generally concentrated on one body in each area (this is the case for 23 out of the 29 regions surveyed). Besides the local authorities and the police, other camera owners include a mix of public sector and private partnerships.

2.15   Likewise, ownership of CCTV monitoring facilities is dominated by local authorities. The police have a greater role in owning monitoring facilities than they do in owning cameras, however: police have an ownership role in monitoring facilities in 7 areas, while they own cameras in only 3. Joint ownership is not common, for either cameras or monitoring facilities. In the few cases where cameras and/or monitoring facilities are jointly owned, this is typically by the police and local authority together.

2.16   One area has no central monitoring facility. It monitors its CCTV from local sites based in each of its towns (police stations and council properties).

3. THE ROLE OF PUBLIC SPACE CCTV

3.1 Why do local authorities first install CCTV? The survey asked respondents retrospectively to consider whether there was a specified purpose when CCTV was first installed in their area. This generated responses as set out in Table 2 below.

Table 2: When first installed, what was the specified purpose of public space CCTV in your area?

Intend Purpose	Number of Areas
Prevent/Manage Crime	26
Prosecution of Offenders (inc image evidence)	26
Reduce Fear of Crime	22
Prevent/manage Anti-social Behaviour	19
Other	5
No information recorded/not specified	3

N=29

3.2 Although Table 2 suggests that most local authorities specified the intended purpose of their CCTV installations, a separate question reveals that at the time of first installation only around half of the areas surveyed specified these aims formally. In respect of some of the areas in Table 2 therefore, the 'intended purpose' stated is an artefact of the question format (asking now to report past intentions) and should best be taken as a record of present perceptions of the uses of CCTV.
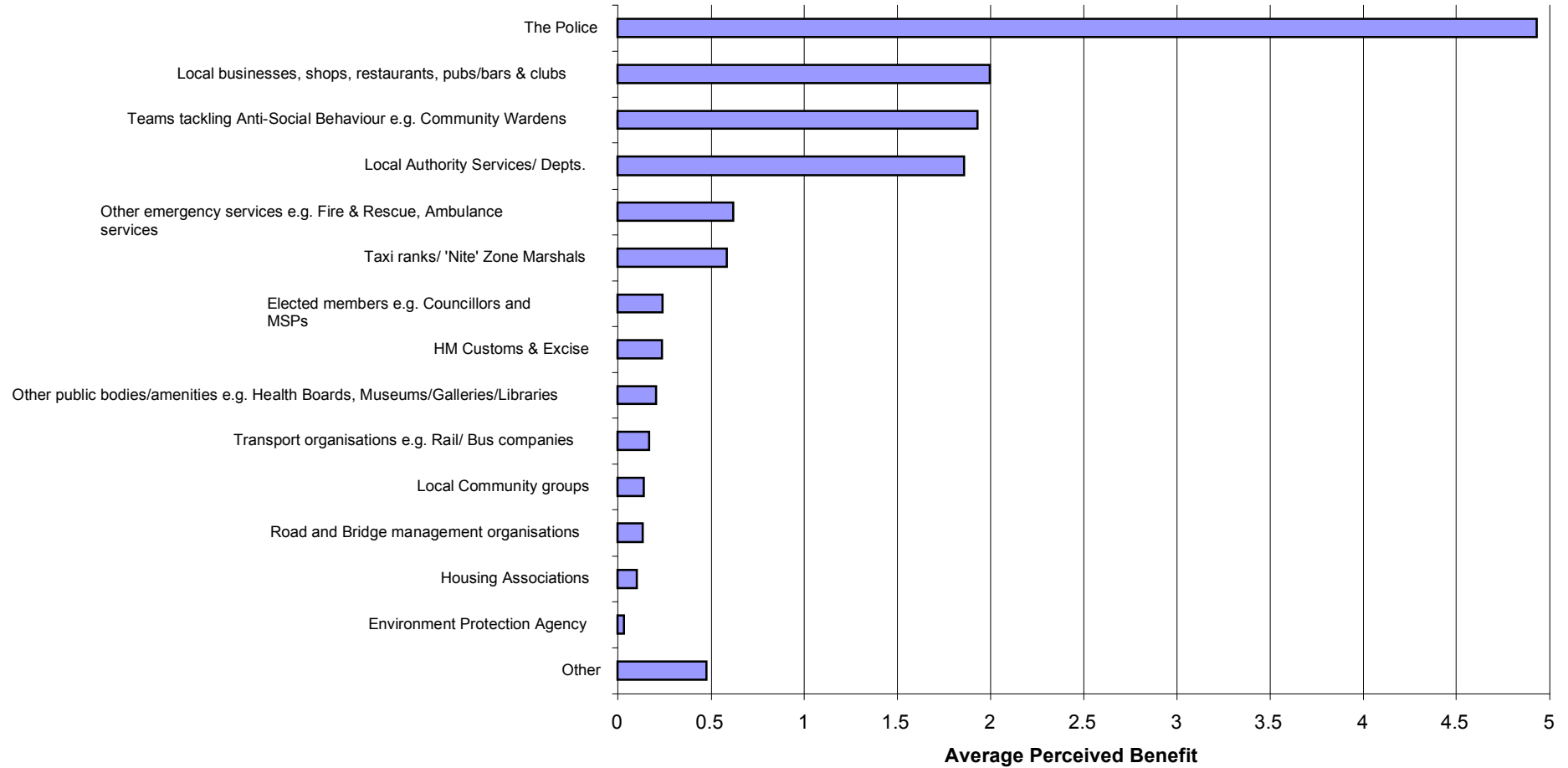
3.3 Among the half of areas reporting specification of expected outcomes of CCTV installation in the survey, three-quarters thought these outcomes had been received. Where outcomes were not achieved, failures were attributed to factors other than CCTV. Thus, where reductions in crime were not observed, respondents tended not to view this as a failure of CCTV, but raised issues such as police resourcing in explanation.

3.4 Overall, while there appears to have been some level of specification of intent and measurement, or at least observation, of outcomes when installing CCTV, there seems to be a need for greater specification in this regard. The intended purposes of installing CCTV are clearly heavily oriented towards crime control, but within this broad aim, there needs to be much greater precision in identifying, recording and evaluating aims, particularly in relation to the use of CCTV with community safety strategies.

3.5 Each area was asked to identify and rank the five main beneficiaries of their CCTV service. We averaged these rankings (5 points for a first choice, 4 for a second choice, etc) to produce the data in Table 3. Although the question asked respondents to identify

beneficiaries, it is likely that the answers are better interpreted as the main users of CCTV data.
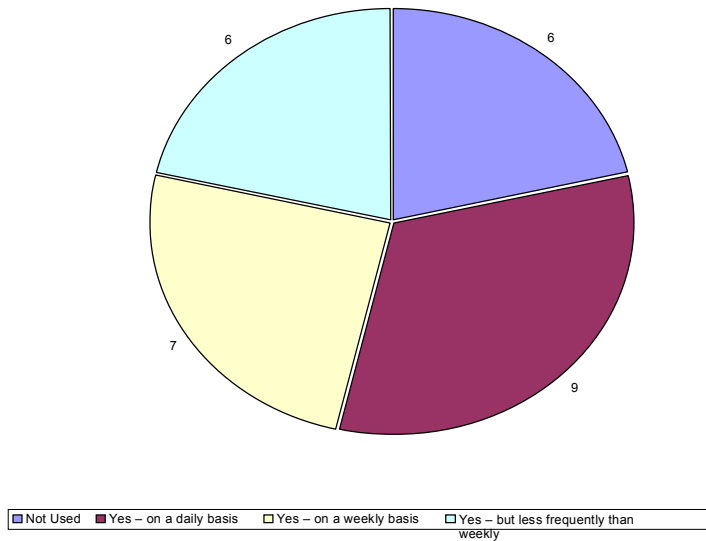
Diagram 1: Who Benefits from Use of CCTV?

3.6   The strategic direction and development of CCTV tends to be decided by local authorities, often with input from the police. In most cases, the operational and tactical use of CCTV also forms part of a targeted problem solving approach with local authority or community safety/planning teams (see diagram 2).

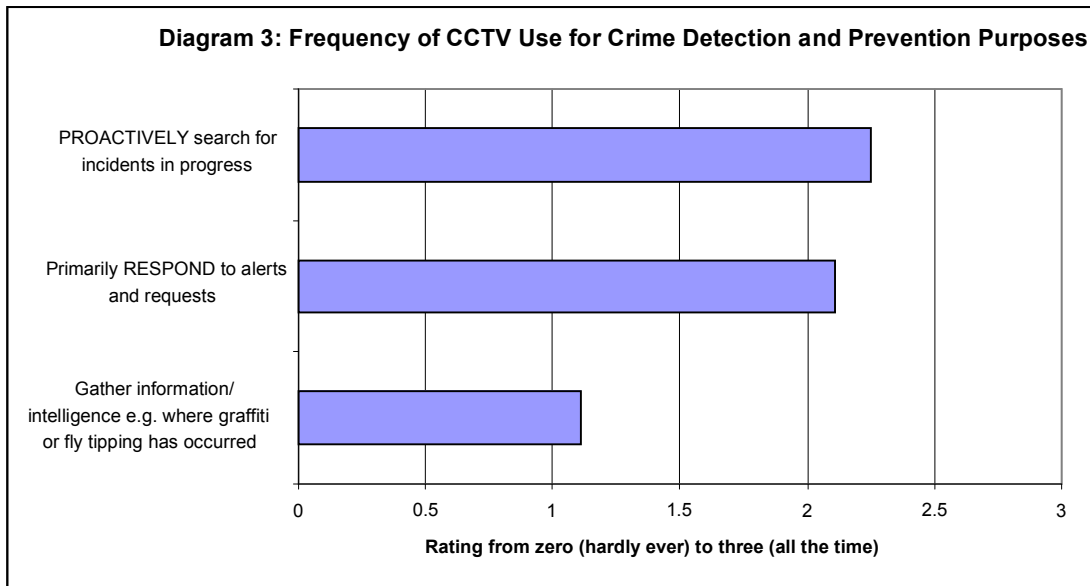**Diagram 2: Frequency of Use of Public Space CCTV by Community Safety/Planning Teams**

Frequency of Use of Public Space CCTV by Community safety/Planning Teams

☐ Not Used	■ Yes – on a daily basis	☐ Yes – on a weekly basis	☐ Yes – but less frequently than weekly

N = 28 (No response for Shetland as CCTV system not yet running at time of response).

3.7   Out of the 28 areas which responded to this batch of questions (Shetland did not, as its system was not up and running at the time of the survey), 17 had developed proposals to use CCTV strategically within their wider community safety or anti-social behaviour programmes and initiatives.

3.8   Only around half of the areas surveyed regularly use CCTV to proactively search for incidents in progress (see diagram 3). Many areas therefore only use CCTV as a tool to assist in the answering of alerts and requests for information.

Diagram 3: Frequency of CCTV Use for Crime Detection and Prevention Purposes

Rating from zero (hardly ever) to three (all the time)

N = 28 (No response for Shetland as CCTV system not yet running at time of response).

3.9   Overall, we can observe that there is variation in the strategic purposes to which CCTV is put (and is planned to be put) across Scotland, including variations in the proactive or response-based use of data, and variations in the frequency with which CCTV data feeds into community safety strategy. There appears to be some value therefore in the further detailed study and evaluation of these varying processes, and following this, dissemination of best practice information among strategic planners and users of CCTV.

3.10   Similarly, there are varying degrees to which stakeholder input determines the location of CCTV cameras across Scotland. The range of people and organisations who influence the positioning of cameras across survey areas is displayed in Table 3.

Table 3: Range of people and organisations who influence position

Determinant	Number of Areas
Police knowledge, intelligence data and crime records	27
Local Authority/ Community Safety/ ASB Tasking & Co-ordination group intelligence	20
CCTV monitoring facility knowledge, records & intelligence	17
Local community/ stakeholder consultations	19
Local Councillor or MSP requests	13
The requirements of specific funders of cameras e.g. Housing Associations, Pubs/Clubs, Shops	13
Other: Cameras were mounted in 1998 on fixed locations.	1

N=29

3.11   The significant influence of police input in determining the positioning of cameras is notable, given the finding that ownership of cameras tends not to lie with the police. This reflects the partnership which exists between local authority CCTV operations and the police to use joint intelligence to help best position new camera installations.

4.   DATA MANAGEMENT

4.1   Nearly all areas share CCTV images, intelligence or statistics data with partners and funders such as the police and other users (3 do not). The information shared, and the people and agencies with whom it is shared, is set out in Table 4.

Table 4: Sharing of Information

Organisation	CCTV Images	Intelligence Information	Statistics
The Police	19	14	15
Other Emergency Services e.g. Fire & Ambulance	8	8	7
Other enforcement agencies e.g. HM Customs & Excise, Environment Protection agency	7	8	3
Community Planning Partnerships	2	2	9
Community Safety Partnerships	5	9	17
Tasking & Co-ordination/ intervention teams e.g. Anti-social behaviour teams / Community Wardens	8	11	15
Tenant groups	0	1	6
Other community groups	0	1	6
Housing Association Management	0	1	6
Other funders of CCTV cameras e.g. Pubs, Clubs, Shops & Businesses	0	3	6
Transport companies/ traffic flow organisations	1	2	2
Elected members e.g. Councillors and MSPs	1	2	14

N=25 (excludes Shetland and the three areas who say they do not share data)

4.2   We can see that areas vary in terms of the type of data shared and who it is shared with. Information is most likely to be shared with the police; especially CCTV images. Overall, however, intelligence information (such as details of the location of graffiti) and statistics (such as aggregate data about the number of incidents witnessed in an area) are more widely shared than CCTV images. These two forms of data are most often shared with Community Safety Partnerships and Anti-social behaviour teams.

4.3   Where data is shared, there is no consistency across Scotland in terms of whether protocols are used or, if used, what those protocols cover. It may be advisable to develop good practice standards in relation to data sharing.

4.4   All 29 areas are registered with the information commissioner. The purpose for registration was reported as per Table 5.

Table 5: Registration Purpose

Intend Purpose	Number of Areas
Prevent/Manage Crime and Prosecute Offenders	28
Reduce Fear of Crime	18
Prevent/manage Anti-social Behaviour	12
Other (gathering community intelligence)	7

N=29

4.5   Table 5 shows that registration is predominantly crime-related. It is notable that there are discrepancies between Tables 2 and 5: it seems that some areas which aim to use CCTV to reduce fear of crime and anti-social behaviour, and to monitor traffic, have not registered these purposes with the information commissioner. This adds further to the impression that the aims and projected outcomes for the installation and use of CCTV in Scotland are not always specified with a great degree of precision.

4.6   There is no standardised procedure or generally-circulated guidelines which identify the nature of incidents operators should record by way of incident logs. There is therefore a wide amount of discretion used in practice in relation to what gets recorded and what does not.

4.7   There is a similar absence of standardised procedure across Scotland for the format in which incident logs are kept. In two-thirds of cases these logs are kept in hand-written paper-based format. There are a range of electronic formats in which CCTV incident logs can be kept, but these are only used in the minority of areas surveyed. They include electronic spreadsheets and databases, and specifically designed CCTV information systems such as VTAS. In one area, details of incidents are recorded directly onto the police incident recording and management system. It is unlikely that handwritten notes or forms are the most efficient way to log incidents in the digital age, and where used these procedures would seem to benefit from review and updating.

4.8   There is also variation across Scotland in terms of the information which is recorded in the form of an incident log. Most, though not all, areas record key variables relating to an incident such as date, time, nature and location of the incident, along with details of the camera operator. Only 10 areas give recorded incidents a unique reference number. This practice is likely to aid information retrieval and should probably be more generally followed. Given the evidence provided in the survey it is highly likely that discrepancies in the way data is recorded across Scotland will sometimes be significant.

4.9   In around two-thirds of areas surveyed it was reported that the classifications used by CCTV operators to log incidents were the same as, or compatible with, those used by the police. In most of the areas where not all classifications matched, it was reported that 'some match'. In two areas, however, none of the classifications matched. The picture in relation to classifications used by community safety anti-social behaviour teams is much more patchy, with only around 15% of areas suggesting that all of the classifications matched. Of course, if the police and local authority community safety teams use different systems of incident classification there will be no possibility that the CCTV operator incident logs will match both. This seems to be an area where a general programme of analysis is required to identify definitional discrepancies across a range of agencies, and where some harmonisation of these definitions would be useful to supplement information-sharing protocols.

4.10   The systems used to view and store CCTV images vary widely across Scotland. The way CCTV is monitored, recorded and stored could have a substantial impact of the usefulness of CCTV for identifying and investigating crime. Again, therefore, identification of 'best practice' would be useful here, perhaps by way of guidelines issued to the various owners and operators of CCTV monitoring facilities.

4.11   Local authorities reported a total of 1631 display monitors in their CCTV monitoring centres, although this excludes one local authority which was unable to say how many monitors they had. The number of monitors an area has appears strongly related to the number of CCTV cameras it has (correlation with number of fixed cameras .785 p-value <0.01). Most monitors appear to be used to display pictures from a given CCTV camera continuously while the use of monitors for displaying pictures from a range of cameras (either by an operator switching from one camera to another, or via a split screen) is less common. In terms of the type of monitors used, around half of the local authorities used a mix of displays [i.e. Cathode Ray Tube (CRT) and flat screens] while a further third had systems which were exclusively CRT based.

4.12   Digital recording is now used, at least to some extent, in 25 of the 29 Community Safety Partnerships, with 16 having systems which are fully digital. Amongst those authorities which have mixed analogue and digital systems, the proportion of footage stored digitally varies between 20% and 80%. Approximately half of those areas which do not have fully digital systems intended to upgrade in 2007/08.

4.13   There is no consistent format for recording CCTV images amongst those areas which use a digital recording system. Across the 25 areas who either already have, or intend to convert to, a digital system there are no less than 6 different recording formats. Indeed, one local authority reported using three different formats, with

different formats being employed in different locations within their area. Amongst those areas who use a digital system, a range of compression techniques are used and the data is stored at a wide range of refresh rates. Interestingly, the answers to these questions were patchy and required substantial clarification - possibly illustrating that those overseeing the systems lack the technical knowledge to fully understand and evaluate their systems.

4.14   The acceptability of video evidence for court use is affected by the compression rate used and the frame rate recorded. There appears to be no set standard for what is deemed "acceptable". However, one indicator which has been suggested during discussion with police and CCTV practitioners is for the acceptable lower limit for system recording to be 6.25fps (frames per second). Of those areas which employed digital recording, 4 said their system recorded images at a rate lower than 6.25fps.

4.15   A key concern is how long images are routinely stored. This is important because it shapes the ability of the police to ask CCTV operators to check retrospectively if evidence of a particular incident was captured. Note: when an incident is observed, or Police advise of an incident they wish to investigate, incident images are retained for police follow-up. The length of time images are routinely stored varies across Scotland. This is most often a result of the cost of the storage medium needed for a digital system but best practice guidance from the Information Commissioner sets an upper limit of 31 days. For images viewed on a SPOT monitor (i.e. where an operator is viewing a particular camera) the average length of time footage is normally kept before deletion is 19 days. However, it is as low as 5 days in one local authority and as long as 31 days in four others. Images from monitor banks are generally kept for slightly longer (the average is 22 days ranging from 7 to 31 days). While some of these time limits may be long enough to allow police to retrieve footage of an incident which is expeditiously reported, there will be cases where evidence of a crime comes to light only after a longer period of time, and in these cases the police will not be able to access footage which may have provided relevant evidence.

4.16   The formats used to pass CCTV images to Procurator Fiscals and Courts also vary widely. Video Tape remains the most common format (used by 9 local authorities). DVD's are provided by 16 local authorities, 9 use CD Rom and 11 provide printed images from their CCTV systems. Approximately half of the local authorities said their procurator fiscals were capable of viewing all digitally recorded CCTV images, without conversion back to an analogue recording. Likewise, about 4 out of every 10 areas said their courts could view all such recordings. Just over one third of areas stated that their procurator fiscals and courts were not capable of viewing digitally recorded footage without it first being converted to analogue.

4.17   Overall, therefore, the picture of CCTV data management in Scotland is a patchy one, with sometimes quite wide variance in the tools and procedures used for logging, storing and sharing images.

5.   STAFF AND TRAINING

5.1   At the time of the survey there were 304 operators in Scotland who are employed specifically to control and monitor CCTV cameras. These operators were unevenly distributed across areas. The highest number of staff employed to control and monitor CCTV was found in Glasgow (38). Four areas had no dedicated monitoring staff for CCTV. In one of these cases, Shetland, the system was not operational at the time of the survey. In one area no one is employed to monitor cameras specifically in real time: CCTV is only used to search for footage after police make an incident-based request. In two other areas there were no dedicated staff in these roles, but some degree of monitoring was undertaken by police when available.

5.2   Across these 25 areas with at least one member of full-time monitoring staff there were 65 supervisors, which added to the 304 operators in these areas makes the total number of full-time CCTV-focussed staff in Scotland 369. There was a marked variation in the ratio of supervisors to monitoring staff. For example, one local authority has 7 supervisors for 21 monitoring staff, while another with 8 monitoring staff has no supervisors.

5.3   There is wide variation in the number of cameras a single operator is expected to monitor. Among those authorities who employ staff to perform monitoring roles, answers ranged from 9 to 93 cameras. The average number of cameras a single employee was expected to monitor was 38. These numbers do not change significantly between day shifts and night shifts.

5.4   There is little consistency in levels or types of training given to CCTV operators across Scotland. In response to a general question about training, it emerged that in 17 areas operators receive 'in-house' training, in 5 areas contractors/installers have been involved in demonstrating how to use equipment, and in 7 areas some form of formal education is offered, from college courses to SIA qualifications (these numbers are not mutually exclusive).

5.5   Similar variation is found in levels of training in the operation of CCTV equipment in compliance with legal standards (such as the Human Rights Act, the Data Protection Act, and RIPSA). In 5 areas, operators were reported to receive no training in these issues. In a further 5, they were reported to receive 'in-house' training. It is not clear from the surveys what 'in-house' training involves (in relation to answers provided to this question and others). In-house training could conceivably be anything from intensive on-the-job induction and supervision by a trained named internal expert, to no real training at all. Among those who receive

external training, the most popular form is a police-based course, commonly that offered by the Scottish Policing College. Even in these areas, however, external training is not offered to all staff.

5.6   Around two-thirds of areas who do have supervisors either do not have any management/supervisor training for their CCTV supervisors, or offer a general management/supervisor training for all people in management roles across the board (and which is therefore not at all specific to CCTV). Again, police-based and other qualifications (for instance SIA accreditation or City and Guilds) are available, and those areas that do train their supervisory staff tend to avail themselves of these. Despite a lot of appeals to formal networking, monitoring of relevant publications, and feedback from police and professional bodies, there appears to be no formal training for supervisors in CPD-type areas such as following developments in technology, codes of practice and relevant legislation.

5.7   There is a need for progression towards uniform standards of training for CCTV operators and supervisors in Scotland. This training should be devised to enable operators and supervisors to make the most effective use of CCTV technology, to promote awareness of relevant legislation and good practice guidance. What current training there is seems often to be in-house or informal, and professional courses like those offered by the police seem only to attract a minority of operating and supervising staff. Good practice standards should be researched, set and widely disseminated to ensure that all staff working with CCTV have their training needs met to professionalised standards. Note: Since the issue of the survey, SIA regulation of the private security industry has come into force. Although this only applies at present to operations that subcontract CCTV monitoring out to private firms such as 'Remploy', some local authorities have nonetheless acted to further train operatives to the same SIA standard. However, universal accredited training would act to raise professional standards across Scotland and reassure the public about the professional use of CCTV as part of police, community safety and surveillance work.

6.   EVALUATION

6.1   Only 13 areas were able to provide examples of how they evaluate the success and impact of CCTV on crime, anti-social behaviour and other 'community desired outcomes'. There was no uniformity in evaluation methods between areas, with roughly half apparently performing no evaluation at all. Of the half who did evaluate, responses could be broadly split between the use of crime/incident statistics and the use of public surveys. Around a quarter of the total surveyed areas performed each of these types of evaluation. Among those who evaluated, a further lack of uniformity is evident in frequency of evaluation, which ranged from monthly to biannual to ad hoc. A minority of areas surveyed had plans to survey public perception or evaluate the impact of CCTV in the next 12 to 18 months.

6.2   Around 60% of areas (N = 17) reported CCTV evaluation work having been performed in their area by others, such as police or university researchers, in the last 3 years. The types of study performed are set out in Table 6. We can see that the most popular types of study are in relation to public perceptions of crime and antisocial behaviour – especially fear of crime and anti-social behaviour. Nearly all the evaluations carried out have been in relation to the engagement of CCTV in the problem of crime and anti-social behaviour. This ties in with perceptions reported earlier of CCTV as a crime-focussed tool. It does, however, mean that the other possible uses and benefits of CCTV seem largely to have gone unevaluated in Scotland, in the last 3 years at least.

Table 6: Types of study performed by police or university researchers in last 3 years

Area of Study	Yes	No	Don't Know
Public perception of public space CCTV	8	18	3

surveillance actually being present			
Public perception of CCTV's general effect/ impact on public safety, crime and Anti-social behaviour	10	15	4
The public's fear of crime/ anti-social behaviour	15	14	0
CCTV acting to deter crime and anti-social behaviour?	10	17	2
CCTV displacing crime and anti-social behaviour to other areas?	4	23	2
CCTV reducing the level of crime and/ or anti-social behaviour?	9	17	3
CCTV helping to detect / investigate crime and anti-social behaviour offences?	9	17	3
Evaluation of CCTVs impact on other desired outcomes?	2	23	4

N=29

6.3   Overall we can conclude that, as with other sections in this report, a study of CCTV evaluation across Scotland presents a mixed picture. Some areas have had no evaluation (and do not plan to have any in the near future). Some have self-evaluated, while some have been the subject of external studies. Within those areas which have had some form of evaluation, the methods (and therefore type) of evaluation have varied, as have the questions of effectiveness which have actually formed the research questions for the evaluations. These idiosyncrasies make inter-area comparisons difficult. They also make intra-area time-series analysis difficult, unless the same matters are evaluated (e.g. public perceptions/fear of crime/crime reduction) in the next evaluation round.

7.   FUNDING AND THE FUTURE

7.1   Twenty-seven areas provided data on their annual revenue costs in operating CCTV. This number excludes Shetland whose system was in development at the time of the survey and not then operational, and the Outer Hebrides which was not a publicly funded operation.   The survey responses do not allow a precise figure to be put on these costs. We can, however, estimate the total annual revenue costs across these 27 areas to be £9.3 million. There is a wide variation across areas, in part reflecting differences in the size of CCTV operations and the age profile of the systems. For instance, a large city authority estimated the revenue running costs of its system at circa. £1.5 million, while another local authority stated that as their cameras were 'unmanned' (i.e. with no dedicated operators) the revenue running costs were zero.

7.2   The organisations responsible for financing the revenue costs of the CCTV monitoring facilities in Scotland are listed in Table 7. This shows that local authorities and the police are the main sources of revenue funding. Notably the police appear to provide funding for CCTV monitoring facilities in many more areas than those where they have an ownership role in these facilities (see paras 2.14 and 2.15). This reflects that in some areas the monitoring of CCTV is undertaken by police personnel.

Table 7: Organisations responsible for financing revenue costs of CCTV monitoring facilities in Scotland

Organisation providing funding	Number of Areas
Local Authority/ Council(s)	26
Police Force	20
Housing Associations	1
Community Safety Partnership(s)	6
Private sector e.g. local businesses	6
Government Bodies or Agencies	3
Other bodies e.g. a NHS Board	3
Voluntary donations	0
Other: Community Planning Partnership/Regeneration Fund	2

N=29

7.3   As well as revenue funding, respondents were asked to estimate the capital funding required over the next 3 years in order to maintain the current level of CCTV operation in their area. One area was unable to quantify the funding required. Among the remaining areas, a mixture of answers were received to the question. The range of answers suggest that different respondents may have put different

interpretations on the definition of 'capital expenditure', including a variety of forms of maintenance in their figure. Some areas had no maintenance planned, or had maintenance included as part of an ongoing contract, the total cost of which was paid at installation. Based on the answers supplied, the total amount for capital maintenance required to maintain Scotland's current level of CCTV provision over the next 3 years would appear to be £7.2 million.

7.4   In addition to capital and revenue costs required to maintain current levels of provision, some areas had CCTV capital development projects planned within the next 3 years. These are listed in table 8 below. In this table, 'other' refers to those areas which either only plan to undertake necessary maintenance or do not currently have an agreed plan for upgrading (in other words, those currently undertaking a review to decide on upgrade priorities, or planning such a review).

Table 8:   CCTV Capital development project planned

Capital development planned	Number of Areas
Additional fixed (static or PTZ) cameras	13
Additional re-deployable/ mobile cameras	14
Additional CCTV equipped vehicles	4
Upgrade to digital recording & storage	12
New or upgraded monitoring display screens	13
Expansion or improvements to how CCTV camera images are transmitted	13
Upgrade/ expansion of voice communications	4
New or upgraded management information system to capture/ record incident details, data and intelligence	8
A completely new purpose built monitoring facility	5
Other	5

N=29

7.5   Areas were asked to put a cost on capital expenditure planned for these development, upgrading or expansion projects over the next 3 years. Only 20 areas entered a figure in response to this question. Some did not know what capital projects were planned because they were awaiting the outcome of a review which would make recommendations in this regard. Others only projected budgets a year at a time, therefore reporting that a 3 year projection could not be provided. Of the 20 areas who provided data, 6 entered zero, indicating they had no capital development plans. The total cost estimate put on capital expansion plans by the other 14 areas was £5.8 million. Although revenue and capital running costs generally correlate to the size of an area's CCTV operation (estimated for this purpose with reference to the number of cameras in an area), plans for future capital investment in development do not correlate in this way.

7.6   Overall, we can see that the budget for current running and maintenance costs, and short-term future development costs, amount to a significant sum Over the next 3 years, the survey suggests the total revenue running costs, capital maintenance and capital expansion/development will be £40.9 million, plus whatever the costs of the various non-responding areas turn out to be.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1   Given the prevalence of fixed-location cameras, a regular process of formal review of the suitability of their location, to ensure that they remain in places of most need, would seem to be a sensible requirement.

8.2   There is a need for greater specification of uses to which CCTV is placed.

8.3   Significant benefit may come from the CCTV community developing standardised protocols in relation to data sharing.

8.4   There is a need to harmonise data recording practices to support the uses to which CCTV may be addressed.

8.5   There is a clear need for rapid progression towards uniform required standards of training for CCTV operators and supervisors in Scotland.

8.6   Given the variation in the strategic purposes to which CCTV is put (and is planned to be put) across Scotland, there appears to be value in a detailed evaluation of the effectiveness of its application to these purposes, and following this, dissemination of best practice information among strategic planners and users of CCTV. Development of common practice and data recording would enable better performance management and evaluation of CCTV against the investment made in its provision.