ASSESSING CRIME PREVENTION INITIATIVES: THE FIRST STEPS

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Crime Prevention Unit Papers

The Home Office Crime Prevention Unit was formed in 1983 to promote preventive action against crime. It has a particular responsibility to disseminate information on crime prevention topics. The object of the present series of occasional papers is to present analysis and research material in a way which should help and inform practitioners whose work can help to reduce crime.

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Foreword

Increasing emphasis is now being placed by the police service on the development of crime prevention initiatives. As with any other area of police work, however, it is important that the resources devoted to crime prevention are used as effectively as possible. Most agencies involved in this area, including the police, still have a considerable amount to learn about implementing effective crime prevention measures. It is inevitable, therefore, that in these early stages some of this activity will be unsuccessful. This in itself is not necessarily an indication of overall failure provided that it is possible to distinguish between those measures which are successful, and those which fail, and the underlying reasons.

This leads to the need for a means of monitoring the effect of crime prevention activity and requires a greater degree of skill and effort in implementing and managing such work. The research described in this report outlines the first stage in the development of a practical approach to the implementation and assessment of crime prevention initiatives. It is only one of the many assessment and evaluation options available; its strength lies in its immediate practical application and the managerial context from which it derives.

The report demonstrates the application of sound management principles to the assessment of crime prevention initiatives carried out by two police forces. It shows that the techniques being developed are feasible and suggests the benefits that can flow from a more structured approach to implementation and evaluation. Work has now begun on turning these ideas into a practical tool which can be taken and used by police forces.

I M BURNS
Deputy Under Secretary of State
Home Office, Police Department
December 1991
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1: Introduction

Aims of the Work

As police forces come under pressure from all sides to operate more effectively and efficiently there is an increasing need for them to have available measures to assess how well they are operating. This report represents the first steps in the development of an approach to the assessment of police-led crime prevention initiatives although it may also be helpful to other agencies. It was accepted early in the study that any fully integrated evaluation methodology should consider such aspects as: performance of the initiative in meeting its objectives, the cost of the initiative and potential cost benefits generated by subsequent crime reduction, together with an assessment of how far public attitudes and perceptions had been influenced by the initiative; - a monumental task! It was agreed, therefore that the first stage of the work would be limited to consideration of the performance aspects before embarking on the wider issues of cost and perception.

A Consideration of Performance Indicators

Performance indicators are essentially a management tool used to identify and assess performance and in turn to assist management with decision making. They are a selection of data which attempt to indicate the performance of an organisation. The word indicate is important. Performance indicators should always be seen as signals or guides rather than absolute measures.

Performance indicators differ from simple indicators (i.e. numbers) in that they require a point of reference a standard or objective against which performance can be measured. Performance indicators should also be reviewed at regular points in time to take into account any changes in situations and performance. A major benefit of the use of performance indicators is that they can be applied to measure non-quantifiable variables by using a series of quantifiable measures which together “indicate” the position of the non-quantifiable variable. An example identified in the studies involved attempts at measuring the commitment of agencies to an inter-agency group by such indicators as: their attendance at meetings, number of contributions to and actions taken from each meeting, and the level of funding of each agency. These indicators taken together enabled a clear picture to be built up of the commitment of each agency to the inter-agency group.

Performance indicators can, therefore, make a considerable contribution to crime prevention. Because they are closely associated with objectives they can be used
to set standards for performance in achieving those objectives. In addition, performance indicators help to improve the planning and use of resources by providing feedback on performance over time. In this way areas of potential improvement can be identified, or an initiative which is clearly successful, can be reinforced allowing resources to be concentrated where they are most needed.

Throughout the study, performance indicators have been developed and used in “baskets” – a series of indicators each seeking to support the other. If all or most of the indicators point in broadly the same direction, than the level of confidence in what they are saying can be heightened. It is dangerous to use only one indicator to identify performance. That indicator may be unreliable, it may fail to measure accurately what is being assessed or the data may be unrepresentative.

The use of “baskets” of indicators is important in a crime prevention context. Most of the core indicators are likely to be based in some way on crime statistics. However, the un-reliability of such statistics has been well documented and verification of the crime data via supporting indicators is helpful.

It is important however to stress that the success of the performance indicator approach rests on the reliability and availability of relevant data. These factors, discussed in greater detail later in the report, need to be borne in mind when the use of performance indicators is being considered.

**Specific Objectives of the Study**

It was agreed that the study should consider the feasibility of evaluating crime prevention initiatives using performance indicators and, more specifically, should aim to produce:

- A series of performance indicators which could be used to evaluate crime prevention initiatives.

- Guidance in the use and application of those indicators.

- Sample sets of indicators to be used for specific crime prevention initiatives.

- A draft methodology for crime prevention officers to follow when setting up and implementing a crime prevention initiative with assessment as an integral part of that methodology.

- A number of recommendations to support the use of the indicators and the methodology.
Study Methods

It was clear that in order to produce a series of performance indicators which would be relevant to crime prevention initiatives, it would be necessary to develop and test these with police forces in an operational setting. However, resources were available for only a small number of initiatives to be considered in this way. It was decided, therefore, that a useful first stage would be to carry out a survey of all UK police forces to assess the extent to which this type of assessment was being performed. This would allow any experience and knowledge gained by those forces to be utilised in the work. This survey, carried out by the Crime Prevention Centre at Stafford, whilst eliciting a response from nearly all forces, shed little light on the evaluation process. Most attempts at assessment consisted of a consideration of bland crime statistics with little attempt to delve into the data or carry out any crime pattern analysis work.

It was evident, therefore that most of the project would need to centre around original studies carried out within forces. These would attempt to set up performance indicators to evaluate crime prevention initiatives currently running or about to be run within the force. In order to achieve as wide a geographical and socio-demographic spread as possible a number of forces were approached to assess their willingness to be part of the study. As a result of this Cambridgeshire, Cleveland, Gloucestershire and Greater Manchester accepted the invitation to host the study. Initiatives suggested in each force were:

- Cambridgeshire – Risk Management Group for schools
- Cleveland – Community Policing of problem housing estates
- Gloucestershire – Crack Crime 90
- Greater Manchester – Car Crime 90

These initiatives gave an acceptable mix of inter-agency/police based projects, and focused on a variety of crime problems.

It was originally envisaged that all four initiatives would form the base of the study. However, due to time constraints, the study concentrated heavily on two of the initiatives – those at Cambridgeshire and Greater Manchester. That is not to say that Gloucestershire and Cleveland were ignored. Indeed the Gloucestershire initiative was used in part to test some of the indicators identified in the two main studies, and the Cleveland initiative is the subject of continuing studies in the area of assessment.

Before beginning the study, a series of fundamental ground rules were laid down which would shape its direction. Firstly, wherever possible only data which were readily available were to be used. Secondly, the amount of extra work for forces generated by the study should be kept to a minimum. Thirdly, and most importantly, any indicators which were identified should meet what has been termed the QUEST criteria. That is, they should be:
Quick – to calculate and use.
Understandable – that is, clearly state what is being measured.
Effective – make a real contribution to the assessment.
Simple – to use and understand.
Timely – reflect the current situation.

With these base rules, it was felt that the objective of producing a series of usable indicators and evaluation techniques could be attempted.

Before considering the Cambridgeshire and Greater Manchester initiatives in a little more detail, it should be re-stated that the purpose of the study was to identify and test performance indicators as a method of assessment, and not specifically the performance of individual initiatives. A full evaluation of the individual initiatives was carried out as part of this project and the reports for these are available from the authors at Staffordshire Polytechnic. What follows is a brief outline of each initiative and a summary of its assessment together with the implications with respect to the performance indicator approach adopted.
2: Cambridgeshire – Risk Management Group for Schools and Colleges

Background to Initiative

In 1986, the Education Committee of Cambridgeshire County Council invited their Management Support Unit to undertake a survey into the security of schools and colleges. Their report, published in April of that year, revealed that the total costs of crime and damage was in excess of £500,000 per annum. The report also established that the level of such crime was increasing, particularly burglary which had increased during 1985 by 20% at a time when the Chief Constable was reporting a 2% reduction in burglary across the County as a whole.

Management Support therefore proposed the formation of a multi-disciplinary risk management group in an attempt to co-ordinate efforts in the prevention of crimes against school property in the county. The group was formed in September 1986 with an annual budget of £50,000 which was fixed until April 1991 when the situation was to be reviewed. Membership comprised of representatives of the police, fire and rescue, property, personnel, education and corporate planning within the local authority and the insurers of the school premises within the county.

The group was to be responsible for: development of a guide to good security practice for distribution to all school premises in the county undertaking risk audits on specific premises, providing architects with knowledge of design features most likely to suffer attack; ensuring that monies allocated for security improvements were spent to the greatest benefit; and considering policy implications arising from these issues.

Identification of Objectives

Fundamental to the performance indicator approach to assessment is the clear identification of an objective for the initiative against which performance can be measured. The first task was therefore to clearly identify the hierarchy of objectives within the police force and where this particular initiative lay within that hierarchy.

A review of the force aims and objectives revealed major problems with these; this is considered in greater detail later in the report. Whilst these objectives were well structured, they were often vague with little attempt at quantification. Against this background it is difficult to see how the force can assess whether or not it has achieved its objectives.
It is not intended to be specifically critical of Cambridgeshire Constabulary at this point. It would appear that there is difficulty in setting meaningful, realistic, and measurable objectives within the police service as a whole. Indeed it is known that many large organisations in both Public and Private sectors have similar problems.

The more detailed objectives agreed by the risk management group were two-fold:

- First, to reduce crime and losses in local authority education premises by targeting crime prevention efforts in such premises against burglary, criminal damage and vandalism.

- Secondly, to reduce crime and losses in local authority education premises by encouraging all county council departments to become more crime conscious.

Whilst these objectives begin to give a level of focus to the work of the group, once again the lack of quantification limits their validity. For example, rather than just reduce crime, it may be better to state that the group wishes to reduce crime by say 50% per year in schools, or to reduce it in line with force/national trends. Without such specification it is difficult to assess if objectives have been met or how far short the group is in achieving them.

The objectives provided did give a level of focus to the initiative, however, and it was decided that they could form the basis of the assessment, bearing in mind their limitations.

**Identification of Strategy/Tactics**

The next task was to review the strategy and tactics which were employed in pursuance of the objectives. It was known that schools in the county suffered from a variety of crimes with a variety of underlying motives. These included: professional burglary for high valued items; nuisance burglary; malicious burglary for arson/vandalism; external vandalism; and simple trespass. The main elements of the strategy were aimed at reducing the opportunity for these types of offence. It was considered that comprehensive alarm systems for all educational establishments in the county would be cost prohibitive. Efforts would therefore concentrate on augmenting existing security arrangements with sensible, low cost physical security.

The need for advice and guidance to establishments was recognised and a guide to good security practices in schools and colleges was developed. The existing safety manual was also revised to include information on security.

The risk management group, once established, carried out risk audits on selected premises and took advice from other educational authorities who had already
explored these areas. A range of security-related subject areas were considered including, locking of internal doors, night lighting, possession and custody of keys, property marking, etc.

Member agencies on the group provided information to identify where efforts should be focused. The group then drew up a list of the worst affected schools in relation to burglary, damage and arson. The funding and measures to be taken were then decided by the group and implemented.

**Identification of Indicators**

Once the objectives, strategy and tactics had been decided, it was possible to identify an extensive range of indicators which could be used in the assessment of the work of the risk management group.

There is unfortunately no magical formula to be used in identifying which indicators to use. The approach which was adopted in this study was simply to sit down with the objectives of the initiative and think creatively in a brainstorming session about what indicators could be of potential use. These were then tested to see how useful they actually were for assessment and those not meeting the QUEST criteria (as outlined in section 1) were filtered out.

What should be borne in mind is that as more initiatives are evaluated, so a library of indicators begins to develop. The need to identify new indicators should, therefore, reduce overtime as more experience is gained. To this end, the indicators identified in this study can be used as a base for the assessment of similar initiatives, although it should be realised that this list is not exhaustive. A manual describing the performance indicators used in the two studies outlined in this report is available from the authors at Staffordshire Polytechnic.

The indicators were split into three main categories in an attempt to provide as full a picture of the initiative as possible. The structure of each category is considered later in this report, but the broad categories to which indicators were allocated were – Contextual, Key and Supporting.

The remainder of this section provides a brief review of each category of indicator and the conclusions which can be drawn from their use in the Cambridgeshire study.

**Contextual Indicators**

Contextual indicators, as their name suggests, are designed to set the context of the assessment. That is, they attempt to identify the background in both crime and non-crime terms against which the initiative has operated. Examples of such indicators identified in the Cambridgeshire study are:
- Monthly recorded crimes (both total crime and specific categories) at a National and Force level for the last three years.

- Specific crime types as a proportion of total crime, again monthly figures at National and Force level.

- Proportion of population at school age, within Cambridgeshire and Nationally.

- Average number of pupils per school (secondary and primary) in Cambridgeshire and Nationally.

- Pupil/Teachers ratios in Cambridgeshire and Nationally.

From these examples it can be seen that the contextual indicators are attempting to identify underlying trends in the levels of crime not only in the county but within the country as a whole. They are also attempting to identify any demographic pressures within the county which might influence the level of crime against school property.

Cambridgeshire has had a fluctuating number of non-residential burglaries, around an upward trend over the ten years to 1989. This is against a national picture of a decrease in such offences from 1986 until 1989.

With criminal damage however, there has been a growth within the county in each of the ten years to 1989 although the rate of increase does appear to be slowing. A similar picture is seen nationally.

Detection of these crimes has fallen in the county since 1985 whilst nationally, detections have risen gradually over the same period. Relative to the country, therefore, the detection performance has deteriorated.

Demographic contextual indicators, devised to give a feel for the size shape and attributes of local authority education in Cambridgeshire, show that the county mirrors closely the national picture. However, there is a slight imbalance towards the provision of primary education in the county, reflecting the young age profile of the population. There is also a significantly higher student to school ratio at secondary level than found nationally. This may reflect the lower level of secondary school provision in the county or it may simply signify that Cambridgeshire has fewer but larger secondary schools than the national average. These factors in turn may indicate potential tensions in the secondary sector in the county. Pupil/teacher ratios in Cambridgeshire are, however, close to the national average revealing that larger schools in the county do not mean larger class sizes.
Key Indicators

Key indicators are allied directly to the objectives of the initiative and are often the easiest to identify for this reason. As the initiative in Cambridgeshire had two main objectives, so there are two sets of key indicators. Below are some examples of the indicators allied to the first objective; “to reduce burglaries, criminal damage and vandalism by targeting prevention efforts on school premises”.

- Crimes (burglary, criminal damage and vandalism) in schools as a proportion of total crimes in the county, monthly.

- Non-criminal incidents in schools, monthly.

- Average value of property stolen per burglary in schools, monthly.

This short list shows that the key indicators are trying to measure the direct effects of the initiative in achieving the objective, i.e. have the measures led to a reduction in crime, relative to crime in the county, or have they reduced the average value of property stolen per burglary in schools (which might indicate an increase in failed attempts)?

Examples of some of the key indicators allied to the second objective of increasing crime consciousness are;

- Level of attendance at crime prevention seminars, over time.

- Attendance at inter agency group meetings.

- Contribution to and actions taken from inter agency group meetings, by each agency, over time.

This shows how more quantitative performance indicators can be used as a proxy measure to assess qualitative effects of an initiative. The crime consciousness of individuals and departments is a nebulous concept to grasp, but it can be assessed in part by such measures as attendance at meetings and seminars, etc.

Looking now at indicators specific to the first objective of the group – reduction of crimes and losses. Data on school crime was available from January 1987. Most of the first batch of initiatives had been implemented by early Autumn 1987. Figure 1 shows quite clearly that the number of offences of burglary in schools fell from late 1987 to early 1989 when it levelled out. It then increased some six months later. The number of offences of criminal damage however was increasing only very slightly over the three years from 1987.
Figure 1: Cambridgeshire Risk Management Group - Burglary and damage in schools

Figures represent a 12-month moving average for numbers of crimes per month

This in itself reveals much about the success of the initiative. However, it takes no account of the underlying trends in crime in the county as a whole at that time. The reduction in school burglaries shown during 1988 would be less significant if, for example, it were accompanied by equally spectacular falls in all types of burglary.

To take account of this, the technique of “indexing” the indicators was applied. Here school crime data was linked to the total crime picture in the county in order to identify disproportionate increases or decreases in school crime. This was done by taking crimes in schools as a proportion of total crimes in the county. Figure 2 reveals the results of this analysis.

Whilst the pattern for burglary is broadly similar to that shown in figure 1, this indicator does confirm that there have been disproportionate decreases in the levels of burglary in schools relative to other non-residential burglaries until early 1989. It also confirms that the situation had begun to deteriorate in late 1989 to early 1990, although the upturn here is not so marked.
With respect to criminal damage however, when indexed to the total criminal damage in the county, criminal damage in schools in fact follows a slightly falling trend over the period of the initiative (as opposed to the slight increase as shown in Figure 1) with an increase also beginning to appear early in 1990.

**Figure 2: Cambridgeshire Risk Management Group - Proportion of crimes occurring in schools**

The use of “indexing” is therefore seen as important in the assessment process in attempting to isolate the effects of the initiative from the underlying situation in the county as a whole.

From this single indicator, it would appear that the risk management group has been successful in holding down the level of damage and spectacularly successful in reducing burglary in schools until the middle of 1989, when it is clear that the effects of the group were beginning to wane. However, this is only one indicator. It has already been noted that there are dangers in using a single indicators on its own.

Other indicators in this basket reveal a steady shift since early 1989 towards crimes being committed at weekends. Information relating to non-criminal incidents at
schools was only available for 1990 and with only 34 such incidents reported, it was felt that this number was too small to use in any assessment.

In attempting to assess the level of “targeting” of crime prevention efforts, the number of schools where security work was being undertaken was reviewed over time. This showed an increase in the second year of the risk management group from 19 to 28. However, the growth then slowed to only 33 schools in the third year.

Similarly the total number of security measures carried out had increased from 33 in year one to 37 in year two, but the number of measures carried out in year three only increased by one to 38. This suggested that the initiative has moved into a period of consolidation following the considerable growth of the first two years.

Key indicators related to the second objective-encouraging departments to become more crime conscious – continue to confirm that the pattern identified above is indeed reflected elsewhere and begins to offer explanations. Whilst agency membership of the group had grown since its inception, the commitment of some of the newer members had fallen off towards the later periods, possibly due to the fact that they take less of an active part in the group than the original members. There also appears to be a fall in the number of training seminars held by the group. All indicators in this “basket” point to the possibility of a drop in the effectiveness of the group from 1989 onwards.

Supporting Indicators

Supporting indicators are designed to verify or refute the findings of the key indicators. Key indicators are likely to be crime based since they are usually linked directly to the objectives of an initiative which in turn often relate to crime and crime prevention. Wherever possible supporting indicators should be of a non-crime type so that they are less prone to the problems inherent in the use of crime data. If the non-crime, supporting indicators suggest similar patterns to the crime-based key indicators then one may be reasonably confident in the result of the assessment. If they do not, then the key indicators should be treated with a degree of caution and the results explored further to identify reasons for variation. Examples of supporting indicators used in the Cambridgeshire assessment are:

– Alarm activations in school premises, monthly.

– Value of insurance claims submitted relating to crime in schools.

– Value of repair costs relating directly to crimes in schools.

The study has also identified a sub-set of supporting indicators which begin to identify the infrastructure relating to the initiative. These have been termed,
structural supporting indicators and again these can be used in support of the key indicators. Examples of those used in this study are:

- Number of agencies funding the initiative.
- Extent of each agency’s funding contribution.
- Levels of funding over time by each agency.

The infrastructure of an initiative is important. Continual and increasing funding by a wide range of agencies can indicate a successful initiative and vice versa. Once again, such indicators can be used as a proxy measure of the success of a particular initiative.

A review of the basket of supporting indicators, notably the value of insurance claims and repair costs arising from crimes in schools, provides further backing to the messages emerging from analysis of the key indicators. These data are affected by major value incidents, which can be filtered out and indexed to the rate of inflation, again to identify disproportionate changes. These values, adjusted and indexed, are shown below in Table 1 and support the earlier conclusions of apparent success in the early days of the group but less of an effect since 1988/89.

| Table 1: Changes in Insurance/Repair Costs in Schools |
|-----------|-----------|-----------|-----------|
| Change in Value of Insurance Claims | +285%      | -69.7%    | +11.7%    | +27.0%    |
| Change in Repair Costs            | +30.1%    | -10.7%    | -15.1%    | +83.8%    |

A consideration of the structural supporting indicators begins to offer some explanations of why this might be.

A sum of £50,000 per annum was set aside for the group budget for each year up to 1991. Given that inflation had risen over this period, whilst funding had not, it would seem logical that overtime the group had been getting less for its money each year. This may have contributed to the lack in further growth in effort put into the scheme, and may in part have caused the waning in interest by certain agencies. The fall off in commitment, whether caused by limitations in funding or not, meant that the group had been increasingly less effective in more recent years than it was in its early days.
3: Greater Manchester - Car Crime 1990 Campaign

Background to Initiative

During 1989, the Crime Prevention Department of Greater Manchester Police (GMP) identified that vehicle related theft, that is, theft of and from vehicles was a growing problem within the force area. It was therefore decided to launch a force wide campaign early in 1990 in an attempt to deal with the problem and make the public more aware of the consequences of this type of crime.

In addition, it was proposed to incorporate the work of the Greater Manchester Probation Service in dealing with those persons known to have committed vehicle related thefts. Vauxhall Motors also agreed to provide funding, support and security-related publicity.

The project received a high profile launch by the Chief Constable of GMP, the Chief Probation Officer of Greater Manchester Probation Service and the Area Sales Manager for Vauxhall Motors on 1st March 1990.

Identification of Objectives

As with the Cambridgeshire study, the first task was to clearly identify the hierarchy of objectives within the force, and specifically, the objectives of the particular initiative.

A review of objectives showed that whilst there was a clear focus, little attempt had been made at quantification. This in turn limited their usefulness as a standard against which to measure performance. In addition, the objectives failed to identify clearly a time frame for the initiative. Although it was felt at the time that the initiative would run for a year from its inception, this was not clearly communicated. As will be seen, this led in turn to confusion and resulted in falling off of interest and commitment. In effect the initiative ‘died’.

Once again, it is not intended to be specifically critical of GMP in this. As noted before, there appears to be difficulty in setting meaningful, realistic and measurable objectives within the police service, an issue considered later in this report.

The objectives of the initiative, bearing in mind the limitations identified, were as follows:
- To make reductions in the number of offences of theft of and from vehicles.

- To increase the detections of offenders committing offences of theft of and from vehicles.

- To bring to the notice of the public, the problems and consequences of car crime.

The second objective was included to widen the sphere of influence of the campaign and to include all sections of the force.

Identification of Strategy/Tactics

The Headquarters Crime Prevention Department was responsible for central co-ordination of the force-wide scheme. They also provided the point of contact for liaison with the other agencies and produced the necessary publicity material. Within the guidelines laid down by HQ, the individual divisions were free to pursue the initiatives they felt were most appropriate to their own area. They were encouraged to undertake analysis of the local car crime problem and to identify crime ‘hot-spots’.

A wide range of initiatives were launched by the police including: improvement of physical security at the airport car park, displays and crime prevention caravans, window etching, undercover surveillance operations, poster and other publicity campaigns, various multi-agency initiatives, vehicle watch, discounts arranged for fitting of car alarms, etc.

The probation service also undertook, or were involved with, a variety of projects - many aimed at persistent offenders. These had a number of aims including: raising awareness amongst offenders of the consequences of car crime, providing alternative activities such as engine maintenance, and working with those disqualified for drink-driving offences. The probation service also undertook some research aimed at understanding the motivation behind youths who steal cars.

Vauxhall Motors provided funds for the launch of the scheme and provided a “secure” Astra for use in displays and exhibitions. They also encouraged new customers to fit security devices and implemented special offers to promote the sale of add-on security.

Identification of Indicators

From consideration of the objectives, strategy and tactics it was possible to identify an extensive range of indicators which could be used in the assessment of the initiative. As with the Cambridgeshire study, the indicators were tested against the QUEST criteria (section 1). Over fifty indicators were identified though many
were not able to be used due to non availability or un-reliability of base data. However, slightly over half could be used, still a considerable number with which to carry out the assessment. It was again felt that ten to twelve of these indicators were vital to the assessment.

The indicators were again split into the three major categories – Contextual, Key and Supporting although this time each category contained different indicators to those used in Cambridgeshire.

Below is a brief review of the indicators and conclusions which can be drawn from them. A full analysis and consideration of the Greater Manchester Car Crime Campaign, together with the performance indicators used in the study, is available from the authors at Staffordshire Polytechnic.

**Contextual Indicators**

Examples of contextual indicators used in this assessment are:

– Thefts of and from vehicles as a proportion of total crimes, at force and national level.

– Percentage change in annual totals of thefts of and from vehicles, again at force and national level.

– Vehicles per road mile.

– Vehicles per parking space.

Again, these variables aim to identify the underlying crime and demographic background against which the initiative was set.

Contextual indicators revealed that GMP had a growing problem with both theft of and from vehicles. Both types of crime were growing at a faster rate than the national average. However, the force detection rate for these offences was also increasing.

Demographic indicators suggest a lower level of car ownership in the GMP area than nationally, but a very high density of vehicles per mile across the area. With a high degree of commuting into the commercial centres in the area there is considerable pressure on the complex road network and an increased opportunity for potential car crime offenders.
Key Indicators

Reflecting the three broad objectives of the initiative were three baskets of key indicators. Examples of those allied to the first objective of reducing thefts of and from vehicles, include:

- Thefts of and from vehicles as a proportion of total crimes.
- Percentage monthly change in thefts of and from vehicles.

Those indicators allied to the second objective of increasing detections, include:

- Detections of thefts of and from vehicles as a proportion of total detections
- Analysis of the method of detection of thefts of and from vehicles.

Finally, those relating to the third objective of increasing awareness of vehicle crime include:

- Analysis of location of offences of theft of and from vehicles.
- Average value stolen per theft of and from vehicles.
- Numbers enrolling on voluntary schemes.

Without recourse to a public attitude survey, which can be very expensive, it is difficult to assess accurately the success of this particular objective. Instead the basket of measures shown above provide an indication of whether any increased awareness and vigilance by the public might affect their behaviour and thus influence the patterns of crime.

Looking in more detail at the indicators allied to the first objective- reducing the number of autocrime offences - and again using the indexing technique identified in the Cambridgeshire study, figures 3 and 4 suggest that the initiative has reduced recorded offences over the first three or four months of its life. After that, however, the effects waned dramatically and crimes returned to levels which might have been predicted had trends in March 1990 been maintained.

Examination of the indicators for the second objective – increasing detections – showed that during the initiative the number of detections of both types of offence had also improved. The average number of detections per month for theft from vehicles had risen from 983, for the period prior to the scheme to 1160 for the period during the scheme. The figures for theft of vehicles were 1020 (pre-scheme implementation) and 1041 (post-implementation). Further analysis showed that this improvement has not resulted from increased detections of past crimes through prison visits and such like. The focus on detection of offences appears therefore to have had the desired effect of increasing such detections, at least in the short term.
The indicators for the third objective appeared to suggest a noticeable shift of crimes from street to car parks (where the crime problem can potentially be managed more effectively). This is illustrated in figures 5 and 6 which show the fall in the percentage of cars stolen from streets and the rise in the percentage stolen from car parks over the first months of the scheme.

In addition, there was a rise in the average value of property stolen from vehicles and a fall in such property recovered. If the public were beginning to heed advice and were parking in safer areas, were not leaving valuables in cars and were securing their vehicles, then the opportunist thief would be deterred. These measures might have less impact on the professional thief who would be more likely to gain entry into a locked vehicle and once inside would steal the higher valued item such as the radio/cassette unit.

There was also a steady fall in the value of vehicles stolen and a dramatic drop in vehicles recovered. Although the professional thief might steal higher valued vehicles the owners of these would perhaps be the most likely to take note of the police advice. Owners of old, low cost vehicles would be less motivated to take action and their cars would remain just as vulnerable.
All these began to indicate that as a result of increased public awareness of the problem - and the public’s consequent more careful approach – the “opportunist” offender was being dissuaded from offending, leaving the professional offender. This would in part explain the shift from street to car park, and the increase in value of thefts from each vehicle as opportunistic property snatches from unattended, unprotected vehicles fell. This might also explain the fall in recovery rates, the professional offender stealing to order or disposing of his goods through well established channels. This in turn allowed detection efforts to be focused on particular locations and helped to improve the detection rate.

Another interesting feature here is the fact that once again, these patterns occur only over the first four months of the initiative.
Supporting Indicators

A number of supporting indicators were identified to verify or refute the key indicators. Examples of these included:

- Proportion of those enrolling on voluntary schemes, such as vehicle watch, who have been re-offended against (see Tameside divisional initiative, below).

- Structural supporting indicators (as used in the Cambridgeshire study) such as extent of agency involvement, number of meetings, etc.

A review of the structural supporting indicators offers reasons for the short term nature of the effects of the initiative. Whilst there were formal planning meetings prior to its launch, the only monitoring of the progress of the initiative was on an unstructured and informal basis (ie casual conversations). This only continued for three months into the initiative. This lack of control, allied to uncertainty over the time frame of the initiative, led to a gradual waning of interest by those responsible for carrying it out. In the short term however, the initiative does appear to have had considerable success in meeting its objectives.
Assessment at Divisional Level

The structure of this initiative lent itself to a two tiered evaluation. What was described above was the first tier, force wide evaluation, but with divisions operating autonomously it was possible to evaluate at the second, divisional tier. Whilst four divisions were evaluated, one ‘G’ - Tameside, is considered briefly below.

With the same objectives as those laid down by the force, Tameside’s tactics centred around a vehicle watch scheme. Owners registered their vehicles, identification disks were displayed in the windscreen and they signed a waiver to indicate that they were willing to allow their vehicles to be stopped by the police between midnight and 5am. This strategy was by its nature, very selective and highly focused, impacting mainly on thefts of vehicles.

A review of indicators revealed that most of them ran completely contrary to the force picture, over broadly the same periods. The first four months of the initiative saw rising crime and falling detections. Crime levels then fell and detections rose in the later periods. Public awareness appears to have been improved however, as
illustrated by the number of people registering on the scheme, some 3,000. Indeed, of those vehicles registered only two were subsequently offended against; a dramatic difference in theft rate when compared to the national average.

A possible explanation is that in the early months of the initiative, other car crime (ie that not covered by the initiative) went unchecked. However, by August the number of vehicles registered had reached a critical mass, enough to affect the behaviour of offenders in the division, thus crimes began to fall, and detections began to rise.

What is important here is that the approach to assessment can operate equally well at different levels within the force, although the availability of data dis-aggregated to divisional level is limited and any assessment may have to be based on a lesser number of indicators.
4: Findings

The findings from such a wide ranging study are many. However, a number are of particular importance to the process of assessment of crime prevention initiatives, and may need to be considered more fully in other more focused studies.

Life Cycle of a Crime Prevention Initiative

As the work progressed, it became clear that both initiatives appeared to be following a finite life cycle. That is, as the initiative was launched and public interest aroused, so crime actually rose in the very short term. There then followed a period of reduction in crime as the initiative took effect and then as the effect began to wane so the improvement ‘bottomed out’ and crime began to rise again.

This life cycle concept is used extensively within the private sector to manage product portfolios (mixes of products) in order to maximise return. By identifying the stage each product in the portfolio has reached in its life cycle, management can make decisions about each individual product to ensure that returns or profits from those products can be maximised and a balanced and effective portfolio of products maintained. For example, if one product is providing increasingly diminishing returns, (ie nearing the end of its life), decisions can be taken to either rejuvenate it or abandon it for new products.

If it is that crime prevention initiatives follow such life cycles, then this has significant implications for the management of such initiatives. If crime prevention officers or police managers can identify whereon the life cycle a particular initiative is, and identify when its effects have ‘bottomed out’, they can make a reasoned management decision about its future. It might be decided to extend the life of the initiative by such measures as re-launching it or inputting additional resources. On the other hand, the decision might be made to ‘cut and run’, considering that the additional resources required to maintain the effects are not worth the potential return.

In either case, the initiative manager can make a reasoned and informed decision regarding the future of the initiative, and in this way make more efficient use of available resources.

It is worth noting that in life cycle terms, the Cambridgeshire risk management group project has reached a state of stable maturity and needs to be either rejuvenated or abandoned. At present, it is clear that £50,000 per year is being
spent on the initiative with increasingly little effect. This is not the most efficient use of resources. Indeed armed with this analysis, members of the group have actually approached their management team and secured an increase in funding to £75,000 for 1992/93. They have decided to rejuvenate the initiative and extend its life.

This in turn illustrates another point about performance indicator-based evaluation. It is not a stick with which CPOs are to be hit, it is a management tool which can clearly identify effectiveness and at times can be used to request additional resources.

**Assessment Using Baskets of Indicators**

The study also provides support for the use of baskets of performance indicators in assessment. By selecting a range of different types of indicator it becomes possible to draw out patterns that would be difficult to spot or support with only a single indicator. The basket approach means that the indicators can be used to support one another and much more confidence can be had in the final conclusions drawn from the assessment.

The studies outlined in this report have shown that it is possible to adopt a much more structured approach to the implementation and assessment of crime prevention initiatives. This is illustrated in figure 7. The identification of a clear set of objectives helps in the development of a specific strategy and tactics by which the objectives can be achieved. This in turn leads to the development of the key indicators, usually crime-based, supported by a series of contextual indicators, and a further series of supporting indicators (usually non-crime) which all seek to verify or refute the key indicators and give a greater degree of confidence in the final conclusions.

**Number of Indicators Necessary**

Given the wide range of indicators examined in these studies relatively few could not be used at all. In the Cambridgeshire study over fifty indicators were examined and only five or six were unsuitable due to the non-availability of data. About the same number did have data available but were felt to be unreliable; for example, indicators relating to alarms were not used since not all schools in the county were alarmed. This meant, however, that some thirty five to forty indicators could be used with a degree of confidence and all of these indicated broadly the same things. Of these indicators some ten or twelve were seen to be vital to the assessment. It may be that most assessments will need only to use around a dozen indicators though this number will vary according to the size and complexity of the initiative. The main message, however, is that by using baskets of indicators, each supporting the other, confidence in the results of any assessment can be heightened.
Techniques for Assisting with Assessment

As the study progressed so a number of assessment techniques emerged as important in the process. Four techniques in particular met all of the criteria laid down in the QUEST acronym, and shed particular light on the subject matter being studied.

i. **Time based analyses** – from an evaluation point of view, one-off considerations of the current situation were seen to be of only limited value; it was important to evaluate at regular intervals, usually monthly. In this way, on-going progress could be monitored, and the life cycle profile built up. This approach also enabled informed management decisions to be taken about the progress of the initiative.

ii. **Indexing** – The linking of data with a standard was seen as increasingly important. A review of changes in recorded vehicle thefts, for example gave an indication of performance. However, a review of changes in recorded vehicle thefts as a proportion of total crimes gave a far greater indication as it highlighted disproportionate changes in vehicle thefts. This in turn helped to focus on the effects of initiatives and helped to filter out extraneous factors. This technique was used extensively throughout both schemes and can be valuable in all such assessments.
iii. **Smoothing** – A major problem with crime and crime-based data is that it is subject to wide fluctuations between time periods. What is required therefore is a simple but effective technique which will smooth out the fluctuations and enable the underlying trends to be identified. The technique adopted throughout the study was that of moving averages. Whilst more sophisticated mathematical techniques are available, the moving average is simple to use and effective and therefore meets the QUEST requirements of the project. Further details of this technique can be found in appendix A.

iv. **Graphics** – Throughout the study full use has been made of graphics, particularly line graphs. Information presented in graphical format can often reveal patterns that would be very difficult, if not impossible, to detect in a table of numbers. Whilst appreciating that not all forces and CPOs have access to computer-based graphics packages, every effort should be made, where possible to utilise graphics.

**Indicator Control Sheets**

A further objective of this study was to provide a set of indicators which could be used in the assessment of future crime prevention initiatives. A series of indicator control sheets have therefore been produced, examples of which can be found in appendix B. These identify the benefits and problems associated with using individual indicators. They will help those evaluating initiatives to identify which indicators can be of use and which should be treated with caution. All the indicators identified in the study have been documented in this way and an Indicator Control Sheet Manual produced. This is available from the authors at Staffordshire Polytechnic.

Whilst not yet the polished “finished product”, the Indicator Control Sheets form a fundamental part of the performance indicator approach to assessment. In effect they become a knowledge-based system, guiding the evaluators through the pitfalls and problems of using these indicators.

In addition, any new indicators appearing can have a control sheet completed which can be integrated into the manual. In this way the Indicator Manual can be maintained as a relevant and up-to-date record of evaluative indicators for crime prevention initiatives.

**A Framework For Assessment**

One of the major objectives of the study was to produce a framework or methodology for use when setting up and running a crime prevention initiative. Whilst further work is needed to turn it into a workable and practical tool the first draft of the methodology is presented below.
Two initial points need to be made. First, the assessment process needs to be woven throughout both the methodology and the management of the initiative. This ensures that progress can be monitored continually and the life cycle of the initiative clearly identified. The two studies presented here illustrate the stages involved in the assessment of an initiative following its implementation. The methodology outlined below shows how to build assessment into the framework of any crime prevention initiative.

Secondly, there needs to be clear ownership of the initiative. All those involved need to know about their responsibilities under the initiative. In addition, there needs to be one individual, the “initiative manager”, whose job it is to manage and drive through the work to its conclusion.

i. Define problem - “Where are we now?”

There should be a clear understanding of the problem being addressed. This should be based more on an analysis of the crime problems than on a ‘gut feeling’. There needs to be a level of focus to the problem even at this stage, for example, is the problem, car crime just vehicle thefts, car crime on public car parks, etc?

ii. Set Clear Objectives – “Where do we want to be?”

The work carried out to-date with police forces has suggested that there are significant problems in the setting of objectives within the police service. Any objectives for crime prevention initiatives should meet a series of exacting criteria if they are to be useful in assessment terms. They should be clear, understandable, measurable (where possible) and realistic (i.e. achievable).

They should also, where possible, define a time frame for the period of the initiative. The objectives should be communicated to all those participating in the initiative and accepted and agreed by them. Finally, to avoid dilution of effort, there should be a limit on the number of different objectives set for each initiative. To a large extent this will depend on how similar and complementary the objectives are. However, in many cases it has been found that forces tend to combine a diverse range of objectives together in one scheme. It is suggested that no initiative should have more than two main objectives.

iii. Define Strategy/Tactics – “How shall we get there?”

The nature of the initiative and the clear objectives should lead logically to the identification of a strategy and potential tactics employed in its pursuance.
iv. Identify Resources - “Who does it and who pays?”

Armed with initiative objective and tactics it is now necessary to identify the resources including funding and manpower, available to carry the initiative through. At this stage due to limitations on resources, refinement may be necessary.

v. Set up assessment procedures – “How shall we measure how we are doing?”

Before the initiative is launched, it is necessary to establish procedures to ensure that it can be comprehensively evaluated. This is not an insignificant task. It is necessary to determine which indicators will be used to evaluate the initiative and this will in turn include an assessment of the availability of information needed.

It is also necessary to ensure that the organisation and machinery is in place to allow for the relevant capture and analysis of data and the dissemination of information from the monitoring and assessment process.

There are a number of other factors to consider at this point. The first is the level or levels at which the assessment is to take place; for example, should it be force wide or at the divisional level? Secondly, there needs to be a consideration of the evaluation trade off; the owner of the initiative needs to consider whether there should be a “quick and dirty” assessment which can give rapid results but which may be more prone to error, or a “slow and detailed” evaluation, which is likely to be more accurate but will take considerably longer to produce. Thirdly, the question of dissemination of results needs to be considered. This involves issues such as how often reports should be circulated, how detailed they should be, to whom they should be distributed, etc.

The wide range of tasks required at this stage often puts a heavy burden upon the initiative manager with the risk that these stages may be ignored or neglected. Care needs to be taken to ensure that this important stage is carried out and is seen as an integral part of any initiative. This is considered in more detail below.

vi. Pre-project assessment - “Will it be worth it?”

In order to attempt to gain some understanding of the likely success of the initiative there needs to be consideration of those factors that might influence an initiative before it is launched. This stage opens up the subject of crime expectations and crime budgeting, and may involve consideration of such factors as resource availability, environmental and contextual issues and the force structure. With information related to these issues it may be possible for the owner of the initiative to make a reasoned decision about its likely success. This is one of the areas where little work has yet been carried out.
vii. Decision Making – “Shall we do it?”

The initiative owners and managers can now make an informed decision as to whether or not to run the initiative. The pre-project assessment may give clear signals that the initiative is likely to be successful and should run, or it may identify certain features in need of modification or review, for example, tactics, resources or objectives. It may be that even after modification the pre-project assessment indicates that likely success is minimal in which case the initiative may be abandoned, at least for the time being.

Whatever the decision, if this process is followed it will be seen by all as an informed decision, based on facts obtained at the pre-project stage and taken before too many resources have been committed.

viii. Implement the initiative - “Let’s do it”

Once the decision has been made to proceed the initiative can be implemented following the tactics/strategies already identified, and using the resources agreed in the planning stage.
ix. On-going monitoring - “How are we doing?”

The concept of a life cycle of an initiative has already been mentioned. To identify the life cycle and where on the cycle the initiative sits at any time, it is necessary to monitor the progress of the initiative at regular intervals.

x. Final post project assessment - “How have we done?”

A final, post-project assessment can be carried out to assess the overall effects of the initiative although if the project has been evaluated regularly through its life this stage should not present any surprises. At this point, it may also be relevant to build in post-project attitude surveys to assess public perceptions regarding the success of the initiative. The timing of the post-project assessment will depend on the timescales over which effects are expected to take place and become “measurable”. In some cases the effects are immediate whilst in others assessment may need to continue for some time after the project has ended.

A number of aspects of this methodology need to be developed, notably pre and mid-project assessment. The full methodology also needs to be fully tested in the field, relevant modifications made and training and other supporting material made available. Once this is done it can be provided as a workable framework and used at local level within the police organisation. The second phase of this development work is now underway and is expected to be completed during 1992.
5: Summary and Recommendations

This report has outlined a mechanism by which crime prevention initiatives can be evaluated within police forces. The feeling which has grown throughout the study is that such assessment is possible and worthwhile. However, for it to succeed, a number of factors need to be considered.

i. Objectives

The question of objective setting within the police service has been considered at several points. It is apparent that any assessment of crime prevention initiatives will require clear and meaningful objectives. Further work needs to be done in guiding Crime Prevention Officers and initiative managers, in the construction of these objectives. The use of such objectives is fundamental to the effective management and evaluation of any initiative.

ii. Information gathering structures within forces

Relevant and accurate information is needed for evaluation. It is clear from the studies, and from past experience that many forces have a weak infrastructure for distributing information, particularly crime information. The ideas put forward in this report will put further pressure on an already weak system. In addition, the methodology may put further strains on those responsible for assessment, particularly at the pre-project assessment stage. Outlined below, is one possible alternative which some forces are now adopting and which may help to relieve the problem.

At present in most forces, the CPO/initiative manager will be expected to carry out any assessment work themselves. To do this they will have to call on a number of sources for the, base data before they can even begin to calculate the indicators and review what type of initiative might be feasible. An example of this mechanism is shown in Figure 9. Quite clearly this task is too much for someone such as the CPO to be expected to perform, given their other responsibilities.

An alternative, being considered by some forces, is the idea of divisional or force information centres. It does not matter at what level the information centre operates, the basic model is the same. The information centre acts as a source for information and it may also possess the knowledge and skills to provide advice on the analysis of this information. Under this arrangement the initiative manager becomes a customer of the information centre when an assessment of an initiative is required.
This process is illustrated overleaf in Fig. 10.

It would be the task of the initiative manager, with the help of the information centre, to identify the nature of the problem. The initiative manager would then devise objectives, tactics, and identify resources for the initiative. The assessment procedures and pre-project assessment would be dealt with by the information centre in collaboration with the initiative manager. The results of the pre-project assessment could then be fed back to the initiative manager for a decision to be made on whether to proceed or not. If the initiative is implemented, on-going assessment and monitoring and post project assessment might also be carried out by the information centre, the results again being fed quickly to the initiative manager to enable action to be taken where necessary.

This approach raises a number of questions such as, where within the force organisation the information centre sits, likely resource requirements, grading of staff, etc. However, the use of an information centre represents a possible solution to the problem of dissemination of information around the force and might also act as a source of basic skills in evaluation. As such, it needs to be considered in greater detail. Indeed a number of forces (Essex, Sussex and Humberside) are looking actively at implementing, or have implemented, such structures.
iii. National Crime Data Standards

It is widely accepted that, at present, many forces lack the necessary detailed crime information to enable them to undertake meaningful analyses of local crime problems. The level of detail and type of information required for identifying, monitoring and evaluating crime prevention initiatives is generally not provided for in traditional crime recording systems. There is a need for the requirements in this area to be defined and for guidelines to be drawn up to enable forces to cater for this type of information when planning future systems.

It is appreciated that, this is a problem which the police service is now beginning to tackle and one which can only be dealt within the long term. However, until this problem is solved many forces will continue to face severe problems in setting up and carrying out meaningful assessments of their crime prevention initiatives.

The use of baskets of performance indicators to evaluate crime prevention initiatives has been seen in this study to have potential. The identification of the life cycle of a crime prevention initiative has emerged as a major potential contributor to such evaluation, as have the techniques of indexing and moving averages. A broad methodology is beginning to emerge together with ideas about the infrastructures which support the evaluation process. However, much work remains to be done.
Appendix A: Using Moving Averages to Analyse Crime Data

Crime data varies from period to period which can make it very difficult to spot any underlying pattern or trend in the data. There are a number of statistical techniques that can assist in smoothing out these variations. The simplest and easiest of these is the technique of moving averages.

As an example, the graph below shows the number of thefts per month of and from vehicles in Greater Manchester. Whilst a rough trend can be identified, it is not clear due to the fluctuations in the data.

Figure A1: Theft Of and From Vehicles - Raw Data
The first twelve monthly values for theft from the vehicle are shown in the first column in table A1 below. A 3-month moving average is to be calculated for this data. The second column shows the totals for each successive 3-monthly period.

The first figure in this column (for February) is obtained by summing the figures for January, February and March; the second figure by summing February, March and April; the third by summing March, April and May, and so on. In this way a moving window of totals is built up throughout the data. Note that it is not possible to calculate a total for the first and last data values in the series. The third column shows the moving average calculated from these totals. For a 3-month moving average this is simply the value of the second column divided by 3.

Table A1: Calculation of a 3-Period Moving Average

<table>
<thead>
<tr>
<th>Theft From Vehicles</th>
<th>Moving 3-Month Total</th>
<th>3-Month Moving Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Jan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb</td>
<td>4549</td>
<td>14113</td>
</tr>
<tr>
<td>Mar</td>
<td>5421</td>
<td>14764</td>
</tr>
<tr>
<td>Apr</td>
<td>4794</td>
<td>15007</td>
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<tr>
<td>May</td>
<td>4792</td>
<td>14624</td>
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<tr>
<td>Jun</td>
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<td>Nov</td>
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<td>14486</td>
</tr>
<tr>
<td>Dec</td>
<td>4354</td>
<td></td>
</tr>
</tbody>
</table>

The objective in using moving averages is to smooth out the random fluctuations in the data but, at the same time, allow the moving average to identify the underlying trend. A moving average can be of any length. However, the longer the length of the moving average the more smoothed the data will be; if the length is too long it is possible that the moving average will not be able to follow ‘real’ changes in the underlying data. On the other hand if the moving average is too short then it may be affected to a large degree by random fluctuations in the data.
The figure below shows the 3-month moving averages calculated for the data in figure A1. The moving average more clearly identifies the pattern in the data but since it is only of a short length it is still susceptible to sudden, short-term changes in the underlying data set.

Figure A2: Theft of and From Vehicles - 3-Period Moving Averages

Figure A3 overleaf shows the effect of applying a 12-period moving average to the car theft data. The moving average has been superimposed on the raw data. This has now completely removed any short-term variation in the data, revealing the longer-term trend.

Note that the method of calculating a moving average means that some data is always lost at the start and end of a series. The 3-period moving average shown in table A1 has lost 1 data point at each end, the 12-period moving average has lost 6 data points from each end of the series which is why the lines begin in July and end in September. This is one major disadvantage of the moving average approach particularly for moving averages covering longer periods.
Seasonality

Some types of data exhibit what is known as seasonality. Here particular periods are always expected to be high or low because of the nature of the data. An example of this is emergency calls to the police each hour, which typically has peaks at certain times of day and troughs in the early hours of the morning. Much the same pattern is repeated day after day and the hourly series is said to exhibit strong seasonality.

A further example can be found in some types of monthly-based crime figures where for example, sexual offences almost always rise in the summer months and shop lifting often reaches a peak in the month prior to Christmas. If the same pattern is repeated year after year it is known as monthly seasonality. It is important to be able to distinguish any effects due to seasonality from the effects of crime prevention initiatives.

Figure A3: Theft of and From Vehicles – 12-Period Moving Averages

Seasonality can be removed from a set of data by choosing a moving average of the same length as the seasonal period. So, for example, to remove monthly seasonality a 12-period moving average is taken; to remove seasonality in quarterly data a 4-period moving average is used.
Technical Note

A moving average is calculated slightly differently for an even numbered period, such as 12, than for an odd numbered period, such as 3. With an even numbered period it is not possible to have the same number of points above the point for which the average is being calculated as below it. The average is not, therefore, centred on the appropriate data point. To overcome this an extra point is taken and the contribution of the first and last points in the average are halved. For example, a 12-point moving average centred around July would take 13 points, the July figure, the 6 points below July (January to June) and the 6 above July (August to January of the following year). The two January figures are then halved and the 13 figures are summed and divided by 12 (not 13) to produce the 12-point moving average.
Appendix B: Indicator Control Sheets

The following pages contain examples of performance indicators used in the studies in Cambridgeshire and Greater Manchester. These have been taken from the indicator control manual which contains over 60 examples of indicators in areas such as: crime analysis, detection, inter-agency, incidents, offenders, repair costs, road accidents, etc.

A copy of the indicator control manual can be obtained from the authors at Staffordshire Polytechnic. The index to this manual is included at the end of the appendix for reference.

Each indicator control sheet (one sheet per indicator) provides the following information:

1. Indicator Name

2. Code Reference – Alpha-numeric code used to index the indicators within each subject area (e.g. RTA1 - 1st road traffic accident indicator)

3. Source – the likely source of base data for this indicator.

4. Use – What this particular indicator can be used for i.e. what it shows.

5. Availability of Data – Each force in the UK has different levels of data available to it. A crude five point data availability coding has therefore been devised to give an indication of the likely availability of the base data for each indicator. This is shown below.

6. Reliability – The reliability of the base data and hence the indicator. The less consistent/reliable the data, the less confidence can be had in the indicator, and vice-versa.

7. Level – The level to which this indicator can be used e.g. force, divisional, sub-divisional.

8. Format – The best format for this indicator, for example line graphics, percentage to one decimal place, etc.
9. Other Comments – Any other relevant comments which need to be borne in mind when using this indicator.

Data Availability Codes

The following codes provide a rough estimate of the availability of base data for performance indicators. They are intended as a guide to the likely effort required in data collection.

1. Data freely available at force level (not just at national level).

2. Data available within all forces but not at a national level.

3. Data available in over half the forces (check with your force stats officer).

4. Data available in very few forces (check with your force stats officer).

5. Data available only at national level (i.e. not at force/county level).
CODE REF: AL1

INDICATOR : Number of Alarm Activations in Property - monthly and percentage change (total, false and actual).

SOURCE : Alarms Administration, Police HQ.

USE : To identify changes in alarm activity.

AVAILABILITY : 4 – See other comments.

OF DATA

RELIABILITY : Limited - See other comments.

        b. Force.

FORMAT : a. Number of activations.
         b. Percentage change to one decimal place.

OTHER COMMENTS : a. Not all properties in a grouping may be alarmed.
               b. In many cases audible only alarms are not included.
               c. Treat this indicator with extreme caution - its reliability is very limited.
               d. Use of moving averages is recommended.
CODE REF: DEM1

INDICATOR : Population Density - population per hectare

SOURCE : Local Authority Planning Department.

USE : To identify the pressure on space and infrastructure in a given area.

AVAILABILITY : 1.

OF DATA

RELIABILITY : See Other Comments.


b. Sub-divisional.

FORMAT : Number of people (per given area).

OTHER COMMENTS : a. Population data will be based on estimates except in census years. Estimates for the years preceding a census will be particularly unreliable.

b. There may be problems in aligning census areas with police divisions, sub-divisions and beats.

c. It may be difficult to assess accurately the physical area covered by a police division or sub-division.
CODE REF: D1

INDICATOR: Annual and Monthly Detection Rate – broad crime categories.

SOURCE:
- Force Statistics Office
- National Crime Statistics.

USE: To identify Force efficiency in detecting crime.

AVAILABILITY: 1.

OF DATA

RELIABILITY: Limited – Dependent on recorded crime data (see indicator RC1).
- Problems with respect to different methods of clear up, can distort the true figures (e.g. prison write-off’s).

LEVEL:
- National.
- County.
- Sub-division.

FORMAT: Percentage to one decimal place.
Graphics.

OTHER:
- Tenuous link to prevention. This indicator assesses how effective Forces are in the detection of crime; its usefulness to prevention is limited. However, it can be helpful in gaining a feel for the situation and pressures within individual forces. It should therefore only be used with caution and it is recommended that it is used in a contextual role.
- Almost impossible to identify at individual property/location types.
- May include detections of previous years’ crimes.
- Use of moving averages is recommended.
- See indicator D2.
CODE REF: INP1

INDICATOR : Number of Visitors to Displays, Exhibitions, etc - monthly values, absolute numbers and change in numbers.

SOURCE : Crime Prevention Department.

USE : To assess throughput of people seeking crime prevention advice.

AVAILABILITY OF DATA : Limited, often only available on certain divisions.

RELIABILITY : Limited, depends upon accurate counting of visitors,

       b. Division/sub-division.

FORMAT : Number of visitors.

OTHER COMMENTS : a. Input variable and therefore difficult to use in an evaluative mode. However, it does give some indication of the extent to which the public are seeking crime prevention advice. Monthly variations can help to assess these trends.
       b. Use of moving averages is recommended for monthly variations.
Crime Prevention Unit Papers

   Gloria Laycock. 1985. v+7pp. (0 86353 154 8).


3. Property Marking a deterrent to domestic burglary?

   Dean Southall and Paul Ekblom. 1986. v+25pp. (0 86252 222 6).

5. The Prevention of Shop Theft: an approach through crime analysis.

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10. Getting the Best Out of Crime Analysis.


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22. **Lagerland Lost? An experiment in keeping drinkers off the street in central Coventry and elsewhere.** Malcolm Ramsay. 1990. v+38pp. (0 86252 520 9).


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