Beenleigh Calls for Service Project: Evaluation Report

February 1998

Research Division

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Abbreviations

BCFS Project	Beenleigh Calls for Service Project
CJC	*Criminal Justice Commission*
IMS	Information Management System (of the QPS)
ISB	Information Systems Branch (of the QPS)
QPS	Queensland Police Service
R-Code	Reported Code
SARA	Scanning, Analysis, Response, Assessment (problem-solving model)
V-Code	Verified Code

Executive summary

Introduction

Most police officers know of places in the community that seem to require more police attention than others. These officers know that each time they attend to one of these places it is unlikely to be the last time. The term 'repeat calls for service' is used to describe this phenomenon, which can be defined as a noticeable pattern in a group of calls for service that are not random or universally distributed. This highly skewed concentration of calls for service, in relatively few locations, raises important questions about how police should deal with these types of calls.

In the late 1970s, an American professor, Herman Goldstein, began espousing a different way of thinking about policing that was designed to shift the emphasis away from police merely reacting to incidents as they occurred to examining the main problems that lay at the heart of a particular incident or group of incidents. He urged the police to collaborate with the community and use a problem-solving approach that went beyond simply responding to incidents to attack the underlying causes that were creating them.

In its simplest form, a problem-solving approach to policing involves a series of actions that can be summarised in the following steps:

- initial recognition of the existence of a policing problem
- in-depth exploration of possible causes
- development of a tailor-made response designed to reduce or eliminate the problem
- assessment of the effectiveness of the response.

In September 1996, the Criminal Justice Commission (CJC) and the Queensland Police Service (QPS) established the Beenleigh Calls for Service Project (BCFS Project), a six-month experiment to find out whether the application of problem-solving techniques would reduce the number of repeat calls for service in the Beenleigh Police Division.

The CJC's involvement arose out of its statutory responsibility under section 23(g) of the *Criminal Justice Act 1989.*

> The responsibilities of the Commission include –
> (g) monitoring the performance of the Police Service with a view to ensuring that the most appropriate policing methods are being used, consistently with trends in the nature and incidence of crime, and to ensuring the ability of the Police Service to respond to those trends.

Research Division staff were mainly responsible for designing the project, analysing Beenleigh's calls for service data, and conducting a full evaluation of the project upon its completion. The QPS was mainly responsible for staffing the project and providing advanced computer support.

The BCFS project was largely based on two early experiments with problem-solving that were conducted in the United States in the 1980s: Newport News's integration of problem-solving into the day-to-day operations of an entire police department, and the Minneapolis Police Department's Repeat Calls Address Policing (RECAP) project. The Beenleigh project also drew on several innovations in problem-solving that were trialled during the Toowoomba Beat Policing Pilot Project.

Description of the BCFS Project

The location for the BCFS Project was Beenleigh, an outer suburban, predominately lower income area, lying midway between Brisbane and the Gold Coast.

Detailed planning for the project began in early 1996 with the following objectives:

- to reduce the number of repeat calls for service at targeted locations in Beenleigh
- to reduce the financial costs of providing a first response to targeted locations in Beenleigh
- to increase the ability of the QPS's Information Management System (IMS) to produce a basic workload analysis for use by local police units
- to increase police support for problem-solving.

The project was managed by a steering committee comprising representatives of the CJC's Research Division and the QPS South-Eastern Region. Day-to-day operations were the responsibility of an experienced police officer from Beenleigh Division who was seconded for six months to work on the project.

The project began with the Research Division analysing QPS calls for service records for the Beenleigh Police Division to identify various addresses in the area that were generating the highest number of calls over a particular period. Once an address was identified, a workbook was compiled containing details of each call for service. The workbook was given to the project officer (i.e. the seconded police officer) who used it to follow through the four stages of the SARA problem-solving model — Scanning, Analysis, Response, Assessment — in an effort to reduce the number of repeat calls. In total, 20 addresses were selected, grouped into two target groups of 10 addresses each.

The workbooks and the SARA problem-solving model helped the project officer identify the most significant policing problems at the targeted locations and guided him in implementing problem-solving strategies to reduce the number of repeat calls for service.

Reducing the number of repeat calls

Case studies and an analysis of trends in the number of calls for service were used as the key measures for assessing the effectiveness of the project in reducing the number of repeat calls for service at the targeted locations.

The main findings were:

- The types of problem-solving activities over the course of the project generally centred on four themes:
  - focusing police attention on locations or individuals responsible for most policing problems (e.g. trialling the concept of *priority patrol objectives*, which was designed to increase police surveillance in and around particular repeat call locations)
  - providing information or advice (e.g. providing advice to individuals and agencies on how to deflect offenders, elicit compliance with existing procedures, and improve staff training)

  - altering the physical environment of target locations (e.g. making recommendations for the clearing of bush and shrubs to improve visibility)
  - referring the problem to another agency for resolution (e.g. notifying a security agency of problems with an alarm going off accidentally; as a result, alarm was repositioned and staff retrained).

- During the project there was a noticeable decrease in the number of calls from targeted locations.
- The number from some of the targeted locations increased after the project ended, perhaps due to the discontinuance of several strategies put in place during the project.
- Although the project reduced the number of repeat calls at the targeted locations, it is not possible to show the impact on the general workload at Beenleigh Division because of the small scale of the project and the methodological difficulties in interpreting trends in calls for service.

Reducing the cost of repeat calls

The second major objective of the BCFS Project was to see if problem-solving could be used to reduce the financial cost associated with repeat calls for service at the targeted locations both by reducing the total number of calls and by encouraging more efficient responses.

The main findings were:

- The cost of attending repeat call locations in Beenleigh in 1996 was around $250,000.
- There was some evidence of a downward trend in the cost of responding to calls at the targeted locations over the period of the project, offset to some extent by the cost of the project officer's involvement in the trial.
- The cost of responding to calls at the targeted locations during March–May 1997 (after the project had ended) was found to be 34 per cent less than the cost of attending calls at these locations over the same three-month period in 1996.

The evaluation also found that several of the initiatives trialled during the BCFS Project were likely to be implemented in other districts and regions — for example, a new strategy for dealing with petrol drive-offs — possibly resulting in a substantial future cost saving for the QPS. This suggests that using problem-solving to reduce repeat calls for service may be a reasonably cost-effective policing strategy, especially over the longer term.

Improving the QPS's Information Management System

Another objective of the project was to improve the IMS so that it could be used by operational police as a problem-solving tool. The three strategies used to achieve the objective were:

- to identify changes to the IMS that would facilitate the production of a basic workload analysis
- to trial modifications to the IMS aimed at reducing the high rate of errors in the data field used for recording addresses
- to advise staff on how to enhance the quality and use of IMS data.

The evaluation found that:

- There was a substantial improvement in the general quality and accuracy of IMS data during the project, which, for the most part, can be attributed to a series of modifications to the IMS carried out by the QPS's Information Systems Branch.
- Accuracy remained low for some types of addresses that were not easily identifiable by street name or number, such as public parks or schools.
- Police officers interviewed for the evaluation were generally happy with the changes made to the IMS and enthusiastically supported efforts to further develop the IMS as a managerial and problem-solving tool.

Increasing police support for problem-solving

The project aimed to promote police support for problem-solving by keeping police officers informed about the project and assisting them with the design of problem-solving course materials. As well, a workshop program was developed to promote the application of problem-solving methods by operational police.

The evaluation found that, despite these efforts, most police officers stationed at Beenleigh had little awareness of the project, the likely reasons being:

- There was no time to implement the strategy of briefing police on the project beforehand.
- Continual staff changes meant that some police surveyed for the evaluation had not had an opportunity to hear of the project.
- Beenleigh Division is extremely busy and so some police may not have had time to read about the project or discuss it with the project officer.
-

Although difficulties were encountered in raising awareness of the project, the workshops did improve knowledge of problem-solving among those senior police who attended.

Conclusions

The BCFS Project was found to be reasonably successful in demonstrating the effectiveness of using the problem-solving approach to deal with repeat calls for service. Few difficulties were encountered in implementing the project and the level of cooperation between the CJC and the QPS remained high throughout.

Although the project provided the QPS with an opportunity to experiment and find how best to use problem-solving to reduce the number of repeat calls in a busy operational police environment such as Beenleigh, the key findings also have implications for the wider application of problem-solving as a policing strategy.

Briefly, the main lessons from the BCFS Project were:

- It is essential that officers have access to accurate and timely local information to analyse incidents and identify any potential policing problems.
- Greater emphasis should be placed on forming partnerships with individuals, groups and agencies to encourage greater community involvement in problem-solving.
- Problem-solving needs to be strongly supported at the *local, district and regional* levels.
- Management needs to take a flexible approach to work practices and encourage officers to innovate and think creatively about the options available in resolving a problem.
- Police need to be patient with the problem-solving process, as some strategies need to be in place over longer periods to yield appreciable benefits.
- Strategies need to be developed to communicate properly the goals and benefits of problem-solving to the police and to the public.

1 Introduction

On 1 September 1996, the Criminal Justice Commission (CJC) and the Queensland Police Service (QPS) established the Beenleigh Calls for Service Project (BCFS Project). This project was set up as a six-month experiment to test whether the application of *problem-solving* strategies could reduce the number of repeat calls for service at targeted locations in the Beenleigh Police Division. This report is the CJC's evaluation of the project.

The problem of repeat calls for service

Most police officers know of places in the community that seem to require more police attention than others. These officers also know that each time they attend to one of these places it is unlikely to be the last time. The term 'repeat calls for service' is used to describe this phenomenon, which can be defined as a noticeable pattern in a group or cluster of calls for service that are not random or universally distributed.

The impact of repeat calls on the workload of police can be substantial. Over the three months between June and September 1996, nearly half (46%) of all of the calls for service for the Beenleigh Police Division were from locations that police had attended previously at least twice. Furthermore, the analysis showed that police attended 38 locations in Beenleigh on no less than 340 separate occasions and that 11 locations alone accounted for 10 per cent of the total number of calls by generating 179 calls for service. This highly skewed concentration of police calls for service, in relatively few locations, raises important questions about how police should deal with these types of calls. One approach, which has been gaining in popularity, is to focus police attention on the underlying factors giving rise to the high number of calls in an effort to eliminate the problem and reduce the demands being made on police resources.

Background to the BCFS Project

The BCFS Project was designed and developed by staff from the Research Division of the CJC and the QPS South-Eastern Region. The CJC's involvement arose out of its statutory responsibility under section 23(g) of the *Criminal Justice Act 1989*, which states:

> **23.** The responsibilities of the Commission include –
>
> (g) monitoring the performance of the Police Service with a view to ensuring that the most appropriate policing methods are being used, consistently with trends in the nature and incidence of crime, and to ensuring the ability of the Police Service to respond to those trends.

The CJC was primarily responsible for designing the project, analysing Beenleigh's calls for service data, and conducting a full evaluation of the project upon its completion. The QPS was mainly responsible for staffing the project and providing advanced computer support.

The BCFS Project was largely based on two early experiments with problem-solving conducted in the United States in the 1980s. The first of these initiatives, which took place in 1983 in Newport News, Virginia, was one of the first projects specifically designed to integrate problem-solving methods into the day-to-day operations of an entire police department (Eck & Spelman 1987). To accomplish this, a task force from the Newport News Police Department was formed to develop a detailed methodology of problem-solving, which included specific guidelines and procedures for officers to follow when dealing with recurring problems. Although an evaluation of the project highlighted several difficulties in

reorienting the department away from an incident-driven to a problem-solving approach, the Newport News project was successful in laying the conceptual groundwork for introducing problem-solving into an operational policing environment (Leigh et al. 1996, p. 17).

The second major experiment took place in 1987 when the Minneapolis Police Department began a project called *Repeat Calls Address Policing* (RECAP), which was an experiment to test whether problem-solving could be used to reduce police workload. A small unit of five police officers was assigned to identify and resolve underlying problems that contributed to particular locations generating a lot of calls. The RECAP experiment proved to be much more challenging than expected, mainly due to difficulties with analysing calls for service data, but was found to be effective in reducing the number of repeat calls for service (Sherman 1989, p. 161).

The BCFS Project also drew heavily upon several innovations trialled during the Toowoomba Beat Policing Pilot Project (CJC 1995). This pilot project was established by the CJC and the QPS in May 1993 to assess whether beat policing was a practical alternative policing strategy for use in the QPS Southern Region. One of the main objectives of the pilot was to incorporate problem-solving into the daily activities of the beat officers. The Toowoomba evaluation concluded that the beat officers had made substantial progress towards implementing a problem-oriented approach in their beat areas, and named several ways of enhancing the use of problem-solving in future pilot projects (CJC 1995, p. 57). Specifically, the evaluation emphasised the importance of having:

- clear guidelines about what is required to engage in problem-solving
- timely, useable calls for service information
- effective strategies for monitoring various problem-solving activities
- a supportive team to review, advise and provide feedback on problem-solving activities.

Defining problem-solving

Until recently, most police work could be characterised as primarily reactive and incident-driven. The greatest emphasis was placed on police responding rapidly to individual calls for service. Incidents were generally not recognised as possible symptoms of a much larger problem, as officers were encouraged to view them as unique or isolated events. In the late 1970s, an American university professor, Herman Goldstein, began espousing a different way of thinking about policing that was designed to shift the emphasis away from police merely reacting to incidents as they occurred to examining the main problems that lay at the core of police business (Goldstein 1979, 1990). Goldstein suggested that a radical change was urgently needed in the way that policing services were delivered if police were to be successful in improving police operations. He argued that police needed to take what he termed a 'problem-oriented' approach to policing (Goldstein 1990, pp. 1–4). Using this approach, the police would collaborate with the community to attack the underlying problems that lay at the heart of a particular incident or group of incidents.

Problem-solving is a practical application of Professor Goldstein's original conception of the problem-oriented approach to policing (POP). As the term will be used here, problem-solving is a structured method of inquiry that can be used to assist in resolving particular policing problems.

In its simplest form, problem-solving involves a series of actions that can be summarised in the following steps:

- initial recognition of the existence of a policing problem
- in-depth exploration of possible factors contributing to the problem
- development of a tailor-made response designed to reduce or eliminate the problem
- assessment of the effectiveness of the response.

A more substantial discussion regarding the development and application of the problem-solving model used during the BCFS Project is covered in chapter 2 of this report.

The aims and design of the evaluation

The term 'evaluation' refers to the systematic examination of the design, implementation and utility of a particular project or program. In its broadest sense, evaluation provides enough information to enable a judgment to be made about the success of a project.

The main aims of the evaluation of the BCFS Project were to:

- monitor and document the implementation and operation of the project
- assess how well the project achieved its stated objectives
- identify any desirable or undesirable outcomes and suggest ways to enhance future problem-solving initiatives
- extend our knowledge of problem-solving as an effective alternative method of resolving policing problems.

Data sources

The main sources of data used in the evaluation of the BCFS Project were:

- ***Calls for service data.*** Currently the QPS uses three methods for recording calls for service. Calls received in the Brisbane area are entered into a computer-aided dispatch system known as ESCORT.[1] In large centres outside Brisbane calls are recorded using a smaller computer application called the Information Management System (IMS), while in smaller centres outside Brisbane they are recorded manually on a report called a job card. The calls for service data used for the BCFS Project were collected using the IMS and consist of electronic records of requests for police assistance made by telephone to the Beenleigh Police Communications Centre over the 15 months from the beginning of March 1996 to the end of May 1997.

  Calls for service are categorised according to various codes, depending upon the nature of the incident. Currently, there are about 120 call categories. The initial code, called the reporting code (R-Code), is assigned according to the caller's description of the incident. The second code, known as the verified code (V-Code) is based on the attending police officer's assessment of the

1 Emergency Service Communications and Operations Resource Tasking system (commonly known as CAD — Computer Assisted Dispatch).

nature of the incident. For the most part, R-Codes were used during the BCFS Project because the R-Code provides a more useful reflection of what the 'community' sees as a problem and avoids any difficulties that may arise as a result of a police officer's application of a rigid definition when describing a particular incident.

- ***Pre-project and post-project awareness surveys.*** Two short project-awareness surveys were administered for the evaluation. The surveys were designed to gauge whether the project had any impact on the knowledge and acceptance of problem-solving by officers stationed at Beenleigh Police Division. The first survey was distributed to 50 Beenleigh police officers before the start of the project (August 1996). Thirty-six questionnaires (72%) were returned before the 1 September 1996 deadline. The survey sought to find out whether officers had heard of the project, how they defined problem-solving, and their view of the importance of problem-solving as a policing strategy. The second survey was distributed to 56 Beenleigh police officers shortly after the project ended (April 1997). Only 26 (46%) questionnaires were returned. The focus of the second survey was on finding out whether the officers felt that the project had been effective, as well as on exploring what the officers believed were the main benefits of problem-solving.

- ***Workshop evaluation surveys.*** A short workshop evaluation survey was distributed to the participants of two problem-solving workshops held during the course of the project. The initial survey was administered to 10 participants of the first workshop held at Maroochydore on 20 November 1996. The second survey was completed by 11 workshop participants at Surfers Paradise on 12 March 1997.

- ***Interviews.*** To gain more detailed information about the implementation and operation of the project, semi-structured interviews were conducted with the project officer, members of the steering committee, Information Systems Branch (ISB) staff, and senior police management. The interviews were conducted by a research officer from the CJC and ranged from 20 to 60 minutes.

- ***Documents.*** The evaluation also examined a wide range of documents and reports, such as problem-solving workbooks and activity reports.

Analysis of data

The IMS has an inbuilt capability to perform some very basic statistical analyses of calls for service data. However, the statistical functions of the IMS are very limited and were not sufficient for the purposes of evaluating the project. As a result, all calls for service data were transferred to a computerised statistical software package (SPSS) for analysis. Data from the two awareness surveys were also analysed using SPSS. Most of the statistical data used in this evaluation are in the form of frequencies; that is, the number, or percentage, of times that something occurs.

Data from the interviews were indexed and analysed using Nonnumerical Unstructured Data Indexing, Searching and Theorising (NUDIST) software. Qualitative data from the interviews are presented in the form of narrative summaries.

Assessing project's success

It is important to be totally realistic about what the BCFS Project was capable of achieving in the short term. Several considerations are relevant in any assessment of its success:

- The BCFS Project was established for a period of six months, commencing on 1 September 1996 and ending on 28 February 1997. The length of the project limited its scope to *make a significant difference* over the short term.

- Analysis of the pre-project IMS data revealed that the information being entered into the system was not good enough to support the project properly. As a result, a number of major modifications were made to the IMS during the early phases of the project. Designing and testing these modifications took considerable time and limited the ability of the project team to have access to accurate and timely data.

- There was only one police officer assigned to the project full time. Although the steering committee hoped to involve other police at Beenleigh, this proved difficult to achieve. As a result, most of the problem-solving activities were designed around what the officer could reasonably achieve while working alone. This was a major constraint in that it limited the scope of the project to trial more resource-intensive problem-solving activities.

Taking these constraints into account, the BCFS Project could still be said to be a worthwhile initiative, provided that there was some evidence that it had made substantial progress towards achieving at least some of its desired outcomes.

Structure of the report

Chapter 2 gives detailed information on the design and operation of the BCFS Project. It describes the setting for the project, as well as objectives and strategies. The chapter also looks at how the project was managed and discusses the basic elements of the problem-solving model.

The findings of the evaluation are featured separately in four chapters:

- Chapter 3 presents several documented case studies and examines the impact that the project had on reducing the number of repeat calls for service at the targeted locations.

- Chapter 4 introduces a model that can be used to determine the cost of various types of police activity. The model takes both direct and indirect financial costs into account to realise an accurate estimate of the cost of responding to calls for service. This chapter also examines whether the BCFS Project succeeded in reducing the cost of providing policing services to targeted repeat call locations in Beenleigh, and provides specific examples of the cost-effectiveness of several initiatives taken during the project.

- Chapter 5 examines the effectiveness of the project in improving the general quality and accuracy of IMS data, and its success in furthering the development of the IMS for use as a problem-solving tool.

- Chapter 6 looks at the effect the project had on increasing police officers' knowledge of problem-solving and their support for problem-solving.

Chapter 7 assesses how well the BCFS Project was implemented and examines the role of the project steering committee, the focus on high-volume calls, and the problem-solving model that was used during the project. The final chapter (8) summarises the key findings of the evaluation and comments on the further development of problem-solving as an alternative policing strategy.

2 Description of the BCFS Project

This chapter describes some of the key features of the BCFS Project, focusing on the:

- setting
- objectives and strategies
- management and operation
- selection of targeted locations
- problem-solving model.

Setting

The BCFS Project was set in Beenleigh, an outer suburban, predominantly lower income community lying midway between Brisbane and the Gold Coast with a population of about 41,000 people.[2]

Policing services in the area are provided by the Beenleigh Police Division, which is part of the Logan Police District. The division covers an area of roughly 300 square kilometres[3], commencing in the north at the Logan River Bridge on the Pacific Highway, and extending south to the Pimpama Bridge, east to Cabbage Tree Point and west to Waterford.

The area has a moderate crime level compared to the rest of the State. According to divisional data collected by the QPS for 1995–96 and adjusted for the population, Beenleigh Division had a rate of 8.2 reported offences against the person[4], which is near the state average of 7.9 offences per 1,000 of the population.[5] During the same period, Beenleigh was above the state average (74.6) for property offences, with 114.5 offences per 1,000 of population recorded for 1995–96.

The division is reasonably large with approximately fifty sworn and four unsworn staff.[6] During the operation of the BCFS Project, the largest concentration of staff was assigned to general duties, the Watchhouse, and the Police Communications Centre.[7] A small number of staff were also assigned to areas such as criminal investigation, traffic, intelligence and prosecutions.

2 Based on June 1996 population estimate, QPS, Information Resource Centre, 12 May 1997.

3 Estimate from MapInfo, QPS, Information Resource Centre, 1996.

4 Unpublished data, QPS, Information Resource Centre, 10 July 1997.

5 QPS Statistical Review 1995/96.

6 Information supplied by Beenleigh Police Division, 5 August 1997.

7 Starting in May 1997, non-sworn staff were appointed to replace sworn staff in non-supervisory roles at the Beenleigh Police Communications Centre.

The division receives approximately 780 requests for police assistance per month. The types of calls vary slightly from month to month; however, the most common calls are break and enters, property offences and traffic-related matters. Table 2.1 shows the range of calls for Beenleigh Division for the three months before the start of the project. To simplify the presentation of the data, calls have been aggregated into 15 groups, each containing similar types of incidents.

Table 2.1 — Types of calls for service (R-Code)
Beenleigh Division
(1 June 1996 – 31 August 1996)

Aggregated reporting code category	Number of calls	% of total
Break and enter	454	21.7
Offences against property (e.g. wilful damage)	290	13.9
Traffic matters	281	13.4
Disturbances	233	11.1
Community assistance	150	7.2
Suspicious persons/vehicles	149	7.1
Alarms	113	5.4
Domestic violence	102	4.9
Escorts/transport	90	4.3
Police investigation	62	3.0
Offences against the person	55	2.6
Emergencies	50	2.4
Missing persons/absconders	35	1.7
Medical emergencies	19	0.9
Drug related	7	0.4
Total	**2,090**	**100**

Source: Calls for service data, Beenleigh Police Communications Centre.

Objectives and strategies

The four main objectives for the BCFS Project were developed by the CJC's Research Division in consultation with the QPS South-Eastern Region. The objectives, and nine associated strategies, are listed in table 2.2 below.

Table 2.2 — Objectives and strategies adopted for use during the Beenleigh Calls for Service Project

Objectives	Strategies
To reduce the number of repeat calls for service at targeted locations in Beenleigh	• Identify and trial focused problem-solving activities aimed at reducing repeat calls for service. • Document problem-solving trials to promote the use of best practice.
To reduce the financial costs of providing a first response to targeted locations in Beenleigh	• Identify problem-solving activities that reduce the cost of responding to repeat calls for service. • Develop a task-based costing model to raise awareness of the cost of first response policing and to promote the use of more efficient methods of responding to repeat call locations.
To increase the ability of the IMS to produce a basic workload analysis for use by police at the local unit level.	• Identify IMS modifications that facilitate the production of a basic workload analysis. • Identify and trial modifications to the IMS aimed at reducing the address-error rate. • Advise staff on ways to enhance the quality and use of IMS data.
To increase police support for problem-solving.	• Provide information to police about the project. • Develop a workshop program to promote the use of problem-solving as a policing strategy.

Source Project documentation.

Management and operation

The BCFS Project was the joint responsibility of the CJC's Research Division and the QPS South-Eastern Region. Day-to-day management was the responsibility of a project steering committee comprising representatives from:

- QPS HQ — Operations Support Command
- QPS South-Eastern Region
- QPS Beenleigh Police Division
- QPS Crime Prevention Unit
- CJC Research Division.

During the course of the project, the steering committee met each month to consider a range of issues relating to policy and administration. Typically, the committee reviewed the activities of the project officer since the last meeting, and considered the general operation of the project.

An experienced police officer from Beenleigh Police Division was seconded to the project for the six months. The officer, designated the *BCFS Project Officer*, was selected by the QPS on the basis of having: (1) substantial operational policing experience; (2) demonstrated capacity to work independently, and (3) extensive experience in working with the community.

The responsibilities of the project officer included:

- preparing background reports on targeted locations
- consulting and liaising with property owners, managers, occupiers, community groups, government agencies and local business
- developing, implementing, monitoring, and documenting various problem-solving activities designed to reduce the number of repeat calls.

The BCFS Project Officer was given a booklet, prepared by the CJC, that contained computer printouts of the calls for service pertaining to a particular target location. The officer reviewed the information to see if a problem existed and whether any further action was necessary. After this preliminary assessment, he conducted a deeper analysis to isolate the issues most likely to be at the heart of the problem. He then implemented a tailor-made response designed to reduce the number of repeat calls.

The selection of targeted locations

There are many sources of information that police can use to identify locations that generate a lot of the same type of calls. The primary sources of information used during the BCFS Project were 'calls for service' records — electronic records of requests for police assistance made by members of the community and received via the '000' emergency telephone number. In Beenleigh, calls for service are electronically recorded using the IMS.

The IMS principally consists of a data entry screen linked to a 4th Dimension (4D) relational database. The main categories of information collected by the IMS are:

- job number
- number of the police unit attending the call
- radio code (type of call based on information supplied by the caller)
- verified code (type of call based on information supplied by the responding officer)
- how the call was received
- name of the caller
- address or location of the incident
- date and time of the call
- time the responding unit was contacted
- time that the responding unit arrived at the scene
- time that the unit resumed patrol
- whether a criminal offence report is required
- brief description of the incident and the actions taken by the responding unit.

During the project, CJC research staff conducted several analyses of calls for service data for the Beenleigh Police Division. The various categories of information collected by the IMS were searched to identify locations that were generating the most number of calls. For the purposes of the BCFS Project, it was decided to focus on chronic repeat call locations at the higher end of the range. It was hoped that by selecting locations that were generating the highest number of repeat calls, there would be greater opportunities to achieve noticeable reductions in the number of calls.

To ensure that the locations selected had the highest number of repeat calls, three selection criteria were devised:

- each target had to be one of the top ten repeat call locations in the Beenleigh Police Division over the six months immediately before selection
- target locations could only be selected once
- the address or location of the target had to be readily identifiable.

After applying the selection criteria, two target groups, each containing 10 repeat call locations, were compiled. The first target group covered the six months from March to August 1996. The project was designed so that the first set of targets would receive the most attention, as the intervention period would be for the full six months. Near the midway point in the project, a second set of repeat call locations (target group 2) was compiled. This set covered the six months from June to November 1996; however the intervention period was limited to three months because the project was set to conclude at the end of February 1997.

Tables 2.3 and 2.4 show the number of calls for each of the two target groups over the six months before selection.

Table 2.3 — Number of calls for service (R-Code)
Target Group # 1
(1 March – 31 August 1996)

Target	Location	Mar. – May	Jun. – Aug.	Total
1	Police Watchhouse	43	27	70
2	Railway Station – A	21	31	52
3	State School – A	18	11	29
4	Railway Station – B	10	11	21
5	Public Space/Park	8	5	13
6	Restaurant	10	4	14
7	Railway Station – C	9	6	15
8	Petrol Station	7	12	19
9	A Street	6	3	9
10	State School – B	1	2	3

Source: Calls for service data, Beenleigh Police Communications Centre.

Table 2.4 — Number of calls for service (R-Code)
Target Group # 2
(1 June – 30 November 1996)

Target	Location	Jun. – Aug.	Sept. – Nov.	Total
11	Supermarket	9	19	28
12	Intersection	3	6	9
13	Caravan Park	11	20	31
14	L Street	10	9	19
15	R Road	4	8	12
16	B Road	5	3	8
17	P Avenue	8	6	14
18	D Avenue	5	5	10
19	W Road	8	9	17

Source: Calls for service data, Beenleigh Police Communications Centre.

The first target group contained 10 repeat call locations; the second only nine because one location was withdrawn. This location involved large expenditures of police resources to transport arrest warrants. During the scanning phase, it was discovered that the QPS had resolved the problem by allowing an electronic transfer of warrants, using the new Polaris computer system. Since the problem no longer existed, the location was withdrawn, but, due to the lateness of the withdrawal, there was not sufficient time to select another location and repeat the problem-solving process.

After the locations were identified, a second analysis was conducted to identify the main types of matters that were giving rise to the large numbers of calls. This produced the call profile summarised in table 2.5.

Table 2.5 — Major types of repeat calls for service (R-Code)
Target Groups 1 & 2
(1 March – 30 November 1996)

Target	Location	Types of repeat calls
1	Police Watchhouse	prisoner escorts
2	Railway Station – A	disturbances, wilful destruction, abandoned vehicles
3	State School – A	break & enters, wilful destruction
4	Railway Station – B	disturbances, wilful destruction, suspicious persons
5	Public Space/Park	break & enters, located unlawful use of motor vehicle (UUMV)
6	Restaurant	hold-up alarms
7	Railway Station – C	disturbances
8	Petrol Station	petrol drive-offs
9	A Street	disturbances, domestic violence
10	State School – B	break & enters
11	Supermarket	hold-up/duress alarms
12	Intersection	non injury motor vehicle accidents
13	Caravan Park	disturbances
14	L Street	disturbances, mentally ill person
15	R Road	break & enters, disturbances
16	B Road	break & enters
17	P Avenue	missing persons
18	D Avenue	prowler
19	W Road	abandoned vehicles

Source: BCFS Project workbooks.

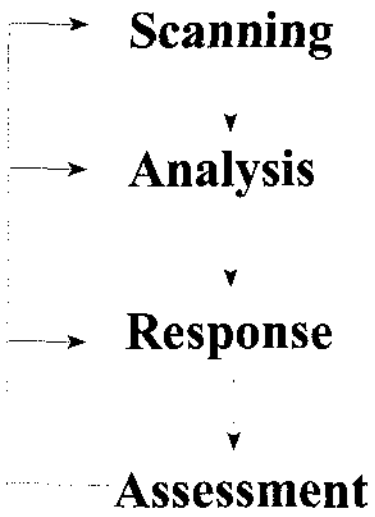
Because of the fairly short duration of the project, it was decided to concentrate on the factors that were giving rise to the major types of calls at each of the locations. Although problem-solving could have been used to reduce other types of calls, this would have diverted attention away from potentially more productive problem-solving activities.

The problem-solving model

Much of the work on the development of a conceptual model for problem-solving was completed by the National Institute of Justice and the Newport News Police Department in the United States (Eck & Spelman 1987). The problem-solving model used during the BCFS Project generally followed the basic structure of this model.

The model, illustrated in figure 2.1, consists of four stages: Scanning, Analysis, Response and Assessment (SARA).

Figure 2.1 — SARA problem-solving model



Source: Eck & Spelman 1987, p. 43.

Stage 1 — Scanning

Scanning, the first stage of the SARA model, initiated the problem-solving cycle. The primary purpose of scanning was to see if a problem really existed and whether any further action was necessary.

Scanning:

- provided a basic description of the problem
- identified the location of the problem
- assessed the seriousness and urgency of the problem
- identified who had the primary responsibility for causing or fixing the problem.

The project officer looked for indications that a policing problem existed. He examined basic patterns in the types and frequency of incidents that police were responding to, and identified the actions of individuals or agencies that were in some way contributing to the problem. Scanning not only helped to define the problem, it helped identify those people in the community who had a responsibility to fix it.

Stage 2 — Analysis

The purpose of stage 2 of the SARA model was to pinpoint the underlying conditions that contributed to the problem or allowed it to persist. During the project this was done by focusing on the three key elements common to most policing problems.

- ***Persons.*** The term *persons* was used to direct attention towards the individuals involved in the problem. Generally, *persons* were divided into three categories: victims, offenders and third parties. The analysis attempted to determine not only who the victims/offenders/third parties were, but also considered why, or how, they became involved in the problem.

- ***Event.*** The *event* simply referred to an incident, or group of incidents, related to the problem. The analysis looked at:
  - what the incident entailed
  - the behaviour of any individuals involved in the incident
  - the harm that was done to the victim or third party
  - the sufficiency of the initial police response to the incident
  - the possibility of links to other incidents.

- ***Place.*** The analysis of *place*, involved an examination of the spatial–temporal (space–time) features of the problem. The analysis considered factors such as:
  - the location of the problem
  - the date, time and day of the week that the problem occurred
  - the features of any structures or places near where the problem occurred
  - the presence, or absence, of physical security measures
  - access (e.g. public transport, roads, paths)

As previously indicated, the main source of information used during analysis was calls for service data. However, there are a number of other sources of information that could have been used in conjunction with calls for service — such as CRISP[8] reports, intelligence profiles, traffic accident reports, government publications, academic studies, media reports, and letters from the public.

Stage 3 — Response

In stage 3 of the SARA model, individual, long-term solutions were designed to deal with the underlying conditions that were giving rise to the high volume of repeat calls. Although eliminating the problem was the ultimate goal of the project, this was not always possible. Where the response was unlikely to eliminate the problem, it aimed at:

- reducing the number of incidents that the problem created
- reducing the seriousness of the problem
- designing better methods for handling the problem in the future
- removing the problem from police consideration (Eck & Spelman 1987, pp. 5–6).

8 The term CRISP refers to the Crime Recording Information System for Police, which is designed to collect details on reported criminal offences.

The response stage can be divided into two parts. The first part involves determining what types of responses might be suitable for dealing with the cause of the problem. Although it is impossible to list all of the available responses to the wide range of problems that police face, it is possible to identify some general types of responses used in problem-solving (see table 2.6 below).

Table 2.6 — Problem-Solving response options

- Concentrating attention on individuals or agencies responsible for the problem
- Referring the problem to another agency for resolution
- Coordinating a police response with responses from other agencies
- Using mediation and negotiation to resolve the problem
- Providing information or advice aimed at enhancing security, gaining compliance, or reducing fear and anxiety among those involved in the problem
- Mobilising the community to take primary responsibility for the problem
- Making better use of existing forms of social control (parents, teachers etc.) to resolve the problem
- Altering the physical environment to reduce the opportunities for the problem to recur
- Increasing regulation of the conditions that give rise to the problem
- Identifying gaps in the provision of existing services or legislation

Source: Goldstein 1990, pp. 105–147.

Two main criteria were used as the basis for selecting various responses. The first was that the response had to be capable of being implemented within the six-month time frame established for the project. The second was that the response had to be implemented without the need for additional QPS or CJC financial resources.

The second part of the response stage involves developing a basic implementation plan to guide the response. For the BCFS Project, the implementation plan included a written statement of the objectives, strategies and time frames for the completion of various tasks. The main aim of the plan was to state as clearly as possible what the response was supposed to accomplish, and give the measures that would be used during the assessment stage.

Stage 4 — Assessment

The final step was to assess the general effectiveness of the response to the problem. Assessment was used to find out the extent to which the response achieved a desired outcome and to highlight areas which could be finetuned to make the response to the problem more effective.

To some people, the assessment stage of problem-solving may seem difficult; as a result it is often overlooked or ignored (Leigh et al. 1996, p. 21). However, assessment need not be overly complex. For the BCFS Project, assessment focused on three simple questions:

1) Did the action resolve the problem?

2) What contributed to the success, or failure, of the response?

3) What modifications could be made to enhance the future effectiveness of the response?

Assessment is obviously an important stage in the problem-solving process; it highlights both the importance of fully documenting various problem-solving activities and the need for proper baseline measures. Table 2.7 lists the three key assessment features of the project.

Table 2.7 — Key assessment features of the BCFS Project

- Relevant baseline information in the form of calls for service data was collected at the outset of the project to enable *before* and *after* comparisons for the purpose of measuring the effectiveness of a particular problem-solving response.
- A daily activities log and a problem-solving workbook were developed to record information on the types of activities done by the project officer.
- Regular briefing sessions were held with the project officer to document the progress of each response and to identify ways in which the response to the problem could be modified.

Source: BCFS Project documentation.

Summary

The BCFS Project was established on 1 September 1996 as a six-month joint CJC–QPS project. The CJC was given primary responsibility for designing the project, analysing Beenleigh's calls for service data, and conducting a full evaluation of the project upon its completion. The QPS was mainly responsible for staffing the project and providing advanced computer support.

The project had four main objectives:

- to reduce the number of repeat calls for service at targeted locations in Beenleigh
- to reduce the financial costs of providing a first response to targeted locations in Beenleigh
- to increase the ability of the IMS to produce a basic workload analysis for use by police at the local unit level
- to increase police support for problem-solving.

The key design features were:

- The project was managed by a CJC–QPS committee with a seconded police officer from Beenleigh Police Division responsible for day-to-day operations.
- Twenty repeat call locations were targeted on the basis of being among the most frequently called addresses in Beenleigh over a specific six-month period.
- A profile was developed for each location and provided to the project officer in the form of a workbook. The officer used the workbook to work through the four stages of the SARA problem-solving model, in an effort to reduce the number of repeat calls.

3 Reducing the number of repeat calls

One of the main aims of the BCFS Project was to demonstrate how problem-solving could be used to reduce the number of calls for service at specific locations.

Measuring the effect that the project had on the number of repeat calls proved to be a considerable challenge. First and foremost were the immense difficulties that were encountered in assuring the quality of the data so that it could be used to measure the impact of the project. Secondly, the project was in operation for only six months and so the numbers of repeat calls were fairly small. Thirdly, some of the initiatives designed to reduce repeat calls could not be fully implemented during the short period that the project was in operation. For example, one of the problem-solving initiatives, aimed at reducing motor vehicle accidents, was the installation of traffic lights at a major intersection. A promise to install the traffic lights was given by the Gold Coast City Council, but it was not possible to carry the work out before the project ended.

Two different types of indicators were used to gauge the impact that the project had on repeat calls.

- ***Case studies.*** An important component of the project was for the project officer to provide full descriptions of the various problem-solving trials. Documenting these activities in case-study form enabled the specifics of each problem-solving trial to be known, while providing an alternative method of assessing the impact of the project.

- ***Trends in the number of calls.*** Two measures were used to assess the success of the project. The first measure entailed assessing the extent to which problem-solving reduced the number of repeat calls at targeted locations. The second examined the extent to which the project reduced the total number of calls for the Beenleigh Division.

Case studies: Examples of problem-solving activities

This section provides five examples of the types of problem-solving activities initiated during the project, selected because they provide good examples of the types of problems encountered during the project. They are drawn from interviews with the project officer and reviews of the problem-solving workbooks compiled for each location. The remaining 14 case studies are attached to this report as appendix A.

Case Study 1

Target location 2
Railway Station–A

Nature of the problem
High number of calls relating to minor disturbances, reports of wilful destruction and abandoned vehicles

Background to the problem
An analysis of calls for service indicated that Railway Station-A had generated 52 calls for service during the six months before the start of the BCFS Project. The calls mostly related to minor disturbances or reports of wilful destruction and abandoned vehicles.

The project officer was of the view that many of the incidents would probably not have occurred if there had been greater supervision/surveillance of the railway platform and car parks.

Description of the problem-solving response

1) The project officer contacted the Gold Coast City Council and recommended the removal of several trees and shrubs that offered concealment to possible offenders and obscured the public's vision of the parking lot.

2) As a result of discussions with Queensland Rail's Protective Service Unit, a commitment was given to increase the number of closed circuit television surveillance cameras, improve lighting, and examine the feasibility of upgrading security fencing in and around the railway station.

3) A recommendation was made to the Officer in Charge of Beenleigh Division to establish a *Platform Beat Policing Team*. This special-purpose squad would target antisocial behaviour, theft, and damage in and around the train station during peak times. Unfortunately, the strategy was not able to be implemented during the period of the project. However, the station area was nominated as a *Priority Patrol Objective* for patrol crews.

Outcome
The number of calls for service fell from 52 (March–August 1996) to 38 (September 1996 – February 1997), a decrease of nearly 27 per cent over the life of the project. In addition, the project officer reported an increase in support and cooperation between the Protective Service Unit of Queensland Rail and Beenleigh Police.

Source: BCFS Project workbook.

Case Study 2

Target location 11
Supermarket

Nature of the problem
High number of hold-up alarms at a local supermarket

Background to the problem
During the six months from 1 June to 30 November 1996, 28 calls for service were received from a local supermarket in Beenleigh. Eight of these calls involved the activation of the store's hold-up alarm. In each case, the activation of the alarm was accidental.

The project officer reviewed each of the alarm-related calls and found that the cause was often described by the officers responding to the call as an 'accidental activation'. After an examination of the alarm, the project officer found that the alarm button was incorrectly positioned and could be pressed accidentally by staff working in the area.

Description of the problem-solving response
The project officer discussed the problem with the supermarket's State Security Manager. As a result, the alarm button was repositioned. Although the alarm is still fully functional, it is now nearly impossible to activate accidentally. Furthermore, the supermarket chain took steps to have other stores examined to rectify any similar problems with positioning of the alarm button.

Outcome
In the last three months of the project, the total number of calls from the supermarket declined dramatically. From December 1996 to February 1997, the number fell from 19 (September–November 1996) to 4, of which only 1 was alarm-related. Since the project ended on 28 February 1997, the number of calls has remained very low.

Source: BCFS Project workbook.

Case Study 3

Target location 8
Petrol Station

Nature of the problem
High number of petrol drive-off calls

Background to the problem
Over the six months before the start of the BCFS Project, 19 requests for police assistance were made by a local self-serve petrol station on the Pacific Highway near Beenleigh. Almost half of these calls involved petrol drive-offs, i.e. complaints that a customer had obtained fuel from the petrol station and driven away without paying for it.

An analysis of the calls revealed that, in most cases, the offender had long gone by the time the police arrived, leaving the attending police officers with little to do other than to obtain the details needed to complete a crime report. The requirement for police officers to attend complaints only to record them was viewed by the steering committee as a potential waste of valuable police resources. It was felt that a different reporting procedure could be adopted that would alleviate the need for police to attend most petrol drive-off calls, while at the same time providing a faster method of notifying the police that a petrol drive-off had occurred.

Description of the problem-solving response

1) The project officer discussed the problem with the petrol station owner, who gave a commitment to train staff in ways to reduce the number of petrol drive-offs. Arrangements were also made with the oil company to erect a sign to promote customer awareness of the problem.

2) Approval was given to trial a new pro-forma report. The report was designed to be completed by the petrol station consul operator at the time of the incident and faxed to the Beenleigh Police Communications Centre. Under the new procedure, once the report has been received, the matter is reviewed to determine what, if any, police action is necessary. If no further action is required, the pro-forma report is used as the basis for the completion of a crime report by the counter officer and the matter finalised.

Outcome
Although the total number of calls for service remained fairly steady throughout the project, the number of calls for police to attend petrol drive-off incidents have fallen sharply. For example, during the June–August period, the target location reported 7 petrol drive-offs. After the provision of staff training, and the introduction of the pro-forma report in December 1996, the number of petrol drive-off calls decreased to 3 for the December–February period and continued to decline after the project ended with only 2 calls received from the beginning of March to the end of May 1997.

Source: BCFSProject workbook.

Case Study 4

Target location 12
Intersection

Nature of the problem
High number of traffic accidents at a busy intersection in Beenleigh

Background to the problem
An analysis of calls for service revealed that the police in Beenleigh had attended six motor vehicle accidents at a Beenleigh intersection during the six months from June to November 1996.

The project officer conducted a review of all calls for service records and found that many of the accidents were the result of drivers failing to obey a stop sign, which had been erected at the intersection to give the right of way to traffic travelling on Beenleigh's Ring Road. Although most accidents were minor, the project officer was concerned with their frequency and felt that the number would be reduced if traffic lights were installed at the intersection.

Description of the problem-solving response
The project officer discussed the problem with the Gold Coast City Council and prepared a report containing five alternative courses of action: (1) relocating the stop sign; (2) placing flashing amber lights at the intersection; (3) installing a roundabout; (4) installing traffic lights, and (5) reducing traffic flow by closing access to a local mall.

Outcome
The matter was reviewed by the Gold Coast City Council. A decision was made to seek Commonwealth funding from the 1996–97 'Black Spot Program' for the installation of traffic lights at the intersection (Recommendation 4). The Commonwealth later approved funding for the traffic lights, which were scheduled to be installed in late 1997. The matter also prompted a review by the Gold Coast City Council of other traffic 'black spots' in Beenleigh, which resulted in the installation of one other set of traffic lights on the Ring Road.

Source: BCFS Project workbook.

Case Study 5

Target location 17
P Avenue

Nature of the problem
High number of requests to find missing youths

Background to the problem
An analysis of calls for service revealed that the Beenleigh police had responded to an address on P Avenue in Beenleigh 14 times over a six-month period from 1 June to 30 November 1996. The address was occupied by a community agency that offered short-term accommodation for homeless youths.

The project officer conducted a review of all call records for the address and found that more than half of the calls were requests for police to provide transport or find missing juveniles. It would appear that the agency had a policy of automatically calling the police if a youth in its care was absent without a staff member's knowledge.

Description of the problem-solving response
The project officer held discussions with the management and staff of the agency, aimed at finding ways to reduce the number of times that the agency called police. As a result, it was agreed that the agency would make alternative arrangements for transporting youths and review its current policy of calling police when a teenager went missing. In the event that it is necessary to report a missing youth to police, the officer in charge of the shift assesses the situation and either sends a patrol vehicle or obtains details over the telephone.

Outcome
After the project officer first discussed the problem of repeat calls with the agency, the number of requests for police assistance fell sharply. Over the last three months of the project, the number fell from 6 (September–November) to 3 (December–February). The number of calls continued to decline after the project ended, with no calls recorded between March and May.

Source: BCFS Project workbook.

These five case studies illustrate the wide variety of problems handled by the project. Although the matters dealt with were fairly minor, they were typical of the types of problems dealt with by police throughout the State. The types of problem-solving responses highlighted by the five case studies generally centre on four themes:

1 ***Focusing police attention on locations or individuals responsible for most policing problems.*** An analysis of Beenleigh's calls for service showed that only a small number of locations and individuals accounted for a large share of problems dealt with by police. By focusing police attention on those locations or individuals at the centre of most policing problems it was hoped that calls would be reduced. The types of problem-solving activities identified in the case studies that fall under this category include:

   – trialling the concept of *priority patrol objectives*, which was designed to increase police surveillance in and around particular repeat call locations

- seeking to establish an initiative known as the *Platform Beat* to patrol railway stations during peak travel times.

2 ***Providing information or advice***. Providing accurate information and sound advice are arguably among the most effective problem-solving tools that police have at their disposal. This is largely because most police officers are seen as experienced in dealing with complex situations that most citizens rarely encounter (Goldstein 1990, p. 115). Furthermore, the public generally see the police as having access to specialised sources of information that can be used to reduce crime and community problems. The type of service provided by the project officer related to advice on:

- safety and security audits designed to reduce fear and anxiety, enhance personal safety and improve security

- specific strategies to individuals and agencies on how to deflect offenders, elicit compliance, or improve staff training.

3 ***Altering the physical environment of target locations***. In recent years, a great deal of effort has gone into exploring the relationship between crime and place. In fact, a large body of literature is beginning to emerge that looks at ways to reduce crime by redesigning whole communities. The focus is on decreasing the opportunities for crime while increasing the likelihood of detection. Examples from the case studies of this type of intervention include:

- making recommendations for the clearing of bush and shrubs to improve visibility in and around the targets

- working with individuals and agencies to improve lighting, erect fencing, and install closed circuit television surveillance cameras or duress alarms.

4 ***Referring the problem to another agency for resolution***. Because police are usually one of the first agencies to be contacted in an emergency, police officers are routinely exposed to an almost infinite variety of different types of events. In most cases, the officer is sufficiently skilled to handle the matter. However, there are also situations encountered by police where the officer may lack the authority, resources or training to resolve the problem properly. In those cases, the officer is encouraged to refer the matter to the individual or agency better suited to finding a solution. Examples drawn from the case studies include:

- referring a previously unidentified traffic 'black spot' to a local authority for the installation of traffic lights

- referring a problem with some existing procedures used by a community agency for reporting a missing person back to the agency for review

- referring a problem with a possibly defective alarm to a security agency, which resulted in the repositioning of the alarm and further staff training.

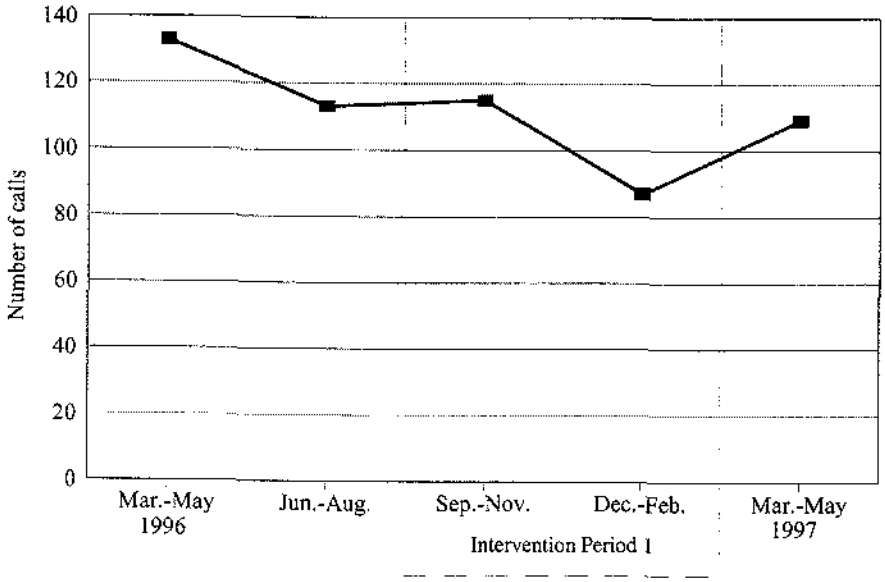
The types of problem-solving activities highlighted in the case studies illustrate how problem-solving can be focused and used to reduce repeat calls. In the main, the activities were quite simple initiatives, such as upgrading security, improving surveillance, providing information and referring matters to other agencies for resolution. Although these activities suited a small-scale project, such as the BCFS Project, there is plenty of scope to experiment with more demanding response options if there is an opportunity to trial them over a longer period.

Trends in the number of calls

Impact of the project on the number of repeat calls at targeted locations

Figure 3.1 summarises the trends in the number of repeat calls for service for the first target group over the March–May period. To smooth-out monthly fluctuations, the graph shows the number of calls in three-month periods.

Figure 3.1 — Trends in the number of repeat calls for service Target groups 1 (1 March 1996 – 31 May 1997)



Source: Calls for service data, Beenleigh Police Communications Centre.

Figure 3.1 reveals some evidence of a downward trend in the number of calls for each target group during the project. For example, before the start of the project, the first set of repeat call locations (target group 1) generated a total of 246 requests for police assistance, consisting of 133 calls from March to May 1996 and 113 calls from June 1996 to August 1997. During the first three months that the project was in operation, the number of calls increased slightly to 115, then fell during the last half of the project to 30 per cent below that of the June–August 1996 period.

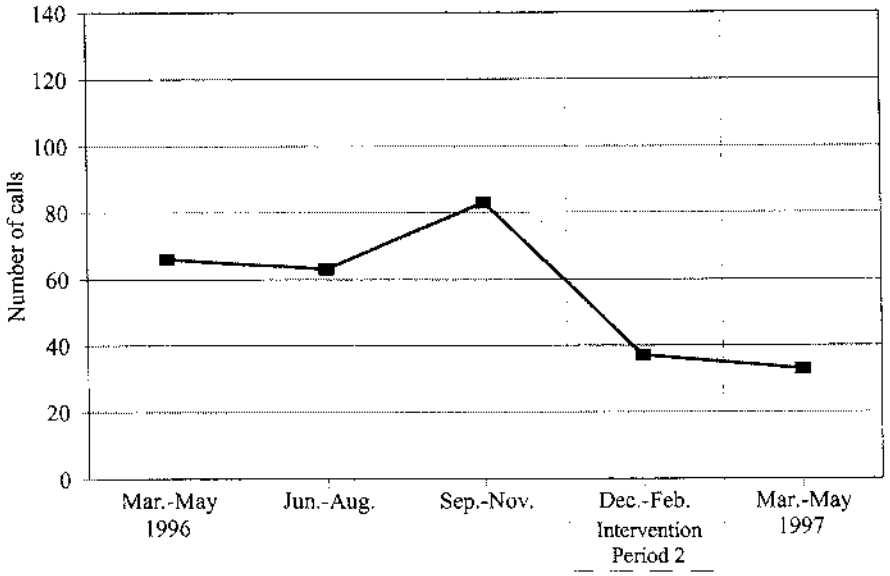
At the end of the project, the number of calls for target group 1 locations increased to near pre-project levels. The exact reason for this rise is unknown; however, one possible explanation could be a change in police presence in and around the target locations. For example, one of the problem-solving responses, designed for target group 1 locations, included a program of intensive patrolling as part of the *Priority Patrol Objective* scheme. Once the project was over, the scheme was discontinued and police scrutiny of the repeat call locations returned to pre-project levels. It is likely that the change in the level of police surveillance contributed to increases in the number of some types of calls for locations in group 1.

The inability of the project to sustain the downward trend in calls for locations in group 1 is an important finding and may have implications for other similar projects. In particular, the finding points to a need for police to be patient with the problem-solving process. Some types of activities, such as a policy or

procedural change, will immediately reduce or eliminate the problem, while others, such as increased police surveillance or enforcement, need to be in place over much longer periods before achieving any long-term reductions.

Figure 3.2 below shows the trend in the number of repeat calls for service for target group 2.

Figure 3.2 — Trend in the number of repeat calls for service Target group 2 (1 March 1996 – 31 May 1997)



Source: Calls for service data, Beenleigh Police Communications Centre.

There is also an apparent downward trend in the number of repeat calls for the second target group. During the June–August 1996 period, group 2 targets generated a total of 63 calls for service. This number increased to 83 during September–November, then decreased by 55 per cent to 37 calls during the intervention period (December–February). A continued downward trend in the number of repeat calls is likely because many of the problem-solving activities for group 2 targets resulted in an immediate and permanent solution to the problem. For example, the problem-solving activity designed for target 11 (Supermarket) was the relocation of the store's hold-up/duress alarm. Once installed, the number of alarms fell dramatically. Another example involved the development of guidelines for a local community agency to use before reporting a 'missing person'. Once the guidelines were introduced, the number of calls declined because the agency no longer found it necessary to contact police to ask for assistance.

It should be pointed out that some fluctuations in the data complicate the reaching of a definite conclusion. However, these are reasonably good results for the project and provide some quantitative evidence that the project was successful in reducing the number of repeat calls in both target groups during the life of the project. Despite these positive results, the effect of the project over the longer term is not clear cut. It may be that as data for additional months become available, there will be clearer evidence to show that the project had a greater impact in this regard.

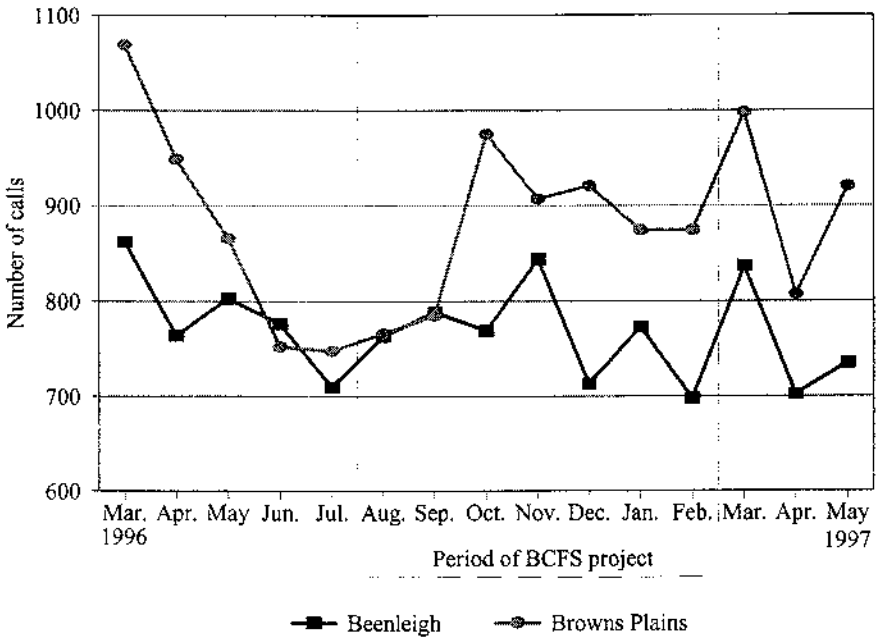
The impact of the project on reducing the total number of calls for service

At the outset of the project, it was hoped that it would be effective in reducing the total number of calls for service for the Beenleigh Division. However, as the project progressed, it became increasingly obvious that it would be difficult to detect any direct effect on the *total number* of calls at Beenleigh.

To enable a more rigorous analysis, Browns Plains Police Division was used as a control. The division is roughly the same size as Beenleigh and has a similar workload. A comparison of Beenleigh's calls for service workload with that of Browns Plains can, therefore, help to gauge whether any changes in the volume of calls at Beenleigh can be directly attributed to the project.

Figure 3.3 presents the results of an analysis of total calls for service for Beenleigh and Browns Plains for the 15 months from March 1996 to May 1997.

Figure 3.3 — Trends in the total number of calls for service Beenleigh & Browns Plains Police Divisions (1 March 1996 – 31 May 1997)



Source: Calls for service data, Beenleigh Police Communications Centre.

Figure 3.2 shows substantial fluctuations in the number of calls for service over the period in both Beenleigh and Browns Plains, making it difficult to isolate any significant statistical evidence of effect. In addition, the capacity of the BCFS Project to have an impact on the total number of calls in Beenleigh was constrained by two factors:

- The project was a relatively small-scale initiative. Although it may have succeeded in reducing the number of repeat calls for service, only a small number of locations were targeted.
- The project's time frame was quite short. In some cases, the *activities* designed by the project officer were only beginning to yield a result just as the project was ending. Had the project been able to trial a wider range of responses over longer periods, it may well have had a clearer effect on the total number of calls handled by Beenleigh Division.

Summary

This chapter used case studies and an analysis of trends in the number of calls for service to assess whether the project was successful in reducing the number of repeat calls at targeted locations in the Beenleigh Police Division.

The main findings were:

- The types of problem-solving activities undertaken by the project officer during the project generally centred on four themes: (1) focusing police attention on locations or individuals responsible for the problem; (2) providing information or advice; (3) altering the physical environment of the targeted location, and (4) referring the problem to another agency for resolution.

- In the main, the types of problem-solving activities were relatively simple initiatives, such as upgrading security, improving surveillance, providing information and referring matters to other agencies for resolution. Although these activities suited a small-scale project, there would be plenty of scope to experiment with more demanding responses over a longer period.

- The evaluation found some evidence that the BCFS project succeeded in reducing the number of repeat calls at targeted locations in Beenleigh. Throughout the project there was a downward trend in the number of repeat calls at the targeted locations.

- The evaluation also found that, after the project concluded, the number of calls for some of the targeted locations returned to near pre-project levels, perhaps because of the discontinuance of several strategies that were put in place during the project. This finding emphasises the fact that some types of problem-solving activities may need to operate over much longer periods to yield any lasting benefit.

- Despite the general finding that the project enjoyed some success in reducing the number of calls for service at targeted locations, it is not possible to show the impact on the general workload at Beenleigh Division because of the samll scale of the project and the methodological difficulties in interpreting trends in aggregate calls for service data.

4 Reducing the cost of repeat calls

The second objective of the project was to reduce the financial costs associated with providing first response policing services to targeted repeat call locations in the Beenleigh Police Division.[9] The principal aim here was to find out if problem-solving is a cost-effective alternative to more traditional methods of responding individually to repeat calls for service.

Measuring the cost-effectiveness of problem-solving is difficult. First, very few models exist that allow for a detailed analysis of the 'cost of policing' (Williams & Sumrall 1983, p. 138). Secondly, there is a danger of overstating the benefits of problem-solving, due to the difficulty of attributing all of the decreases in the number of repeat calls directly to the project. On the other hand, there is a risk of understating the benefits of the project because some of the interventions would still be in effect long after the project ended. The third major difficulty relates to the types of measures that are appropriate for evaluating the cost-effectiveness of an initiative such as the BCFS Project. Some measures are overly simplistic — such as those that only take basic labour costs into account with no real effort being made to incorporate other costs such as operating or capital costs — while others, such as those that incorporate the time spent in designing and trialling the modifications that were made to the IMS, would make it nearly impossible to show that the project was truly cost-effective over the fairly short period that it was in operation.

For the purposes of the present study, two approaches were used to evaluate the cost-effectiveness of the project:

- ***Analyses of trends in the cost of servicing repeat call locations.*** The first approach was to measure the extent to which problem-solving reduced the total cost of responding to repeat calls for service at the targeted locations.
- ***Case studies.*** The second approach was to use case studies to explore the cost-effectiveness of various problem-solving initiatives undertaken during the project. Documenting the full cost of implementing these initiatives is another way of measuring the success of the project in reducing the cost of repeat calls for service.

This chapter is divided into three parts. The first part sets out the basic elements of the costing model that was used to determine the cost of police attending various types of calls for service. The second part uses the model to assess the impact of the BCFS Project on reducing the cost of responding to repeat calls. The third part documents the cost-effectiveness of problem-solving in three of the targeted locations.

Modelling the cost of calls for service

The cost analysis model used for this evaluation was based, in part, on a model developed in the United Kingdom by Shapland et al. (1996). The model was then localised and extended by an economist acting as a consultant to the CJC to give an estimate of the cost of a QPS officer providing a *first response* to various types of calls for service.

The costing model had two main components:

- an estimate of the per minute cost of a police officer's time
- an estimate of the time that officers spent attending different types of calls for service.

9 Reducing the number of repeat calls will not necessarily produce a cashable saving, as most costs, such as labour and vehicles, are fixed.

A more detailed study of the components of the costing model is attached as appendix B. Additional information about the cost of policing is also available in the recent CJC publication *The Cost of First Response Policing* (1997a).

Estimating the per minute cost of a police officer' s time

The estimate of the cost of a police officer's time comprises three main elements. The first element is an expression of the direct labour cost of the officer. This includes the officer's basic salary, overtime, holidays and accrued entitlements. The direct labour cost also takes various taxes and allowances into account, as well as a proportion of the regional and headquarters budgets for Command and Corporate Services. The second element is an estimate of the officer's share of various operating and capital costs such as electricity, plant, equipment and capital works. The third element is an estimate of the per minute cost of operating a police motor vehicle, which takes into account the cost of petrol, oil and maintenance.

Using the model, the cost of a single officer patrolling on foot was calculated to be 82 cents per minute. This amount was made up of approximately 63 cents for labour (78%) and 19 cents for operating and capital costs (22%) per officer per minute. The running costs for a police vehicle were estimated to be 3 cents per minute. This amount may be added to the cost of the officer or officers, depending upon the type of police response to a particular call for service.

Table 4.1 shows the estimated weighted per minute cost of each of the three main types of first response patrol combinations used by the QPS.

Table 4.1 — Weighted average per minute cost of a police officer (Beenleigh Police Division)

	Cost per minute
Single officer on foot	$0.82
Single officer in a patrol vehicle	$0.85
Two officers in a patrol vehicle	$1.67

Notes:
1. Estimate based on the assumption that an officer was on duty for 200 eight-hour shifts per year.
2. Weighted cost is based on the average pay rate for Constable, Senior Constable, and Sergeant.
3. The police motor vehicle cost of 3 cents per minute is based on the assumption that the vehicle is in operation for three shifts per day and used for a period of six hours per shift.

Estimating the time that officers spent attending different types of calls for service

The time that police officers spent attending different types of calls was obtained directly from the IMS. The data were the result of an analysis of calls for service using the R-Code to identify the incident type. The time was calculated from when an officer is notified of a call for service (acknowledged time) to the time that the unit is finished with the call (resumed time).

Table 4.2 shows the average cost of two officers in a police motor vehicle providing a first response to a range of different types of calls for service.[10] To simplify the table, the large number of IMS reporting codes (R-Codes) has been broken down into 15 groups, each containing a number of similar or related incident types.

Table 4.2 — Average cost of calls for service by aggregated R-Code [1] type (1 June 1996 – 31 May 1997)

Aggregated reporting code	Specific reporting codes	No. of calls n=6,820	Avg time per call [2] (hr:min:sec)	Avg cost per call [3] ($)
Escorts	Escorts, Transport	216	1:55:56	186.70
Medical emergency	Sudden Death, Suicide, Attempted Suicide, Mentally Ill or Collapsed Persons.	119	1:44:18	167.90
Domestic violence	Domestic Violence, Breach of Domestic Violence Order	411	1:22:02	132.10
Other offences against person	Homicide, Assaults, Sex Offences, Offences Against Children, Threats	205	1:13:33	118.40
Drug related	Matters where drugs are the primary reason for the call	22	1:03:30	102.30
Police investigation	Arrests, Pursuits, Scene Examination, Intelligence Information, Requested Patrols	150	0:58:42	94.50
Offences against property	Stealing, Wilful Destruction, Unlawful Use of Motor Vehicle, Petrol Drive-Off	775	0:48:53	78.70
Missing persons & absconders	Missing or Located Persons and Absconders	87	0:48:07	77.50
Traffic matters	Accidents, Traffic Investigations, Hazards, Traffic Control	784	0:44:59	72.40
Emergencies	Armed Person, Shots Fired, Explosions, Fires	219	0:43:58	70.80
Break & enter	Break & Enter, Breaker at Premises	1383	0:42:43	68.80
Community assistance	Messages, Community Assistance, Nuisance Phone Calls	604	0:38:42	62.30
Disturbances	Disturbances (Home, Street, Industry, Alcohol, Noise etc.)	952	0:36:49	59.30
Suspicious persons and vehicles	Prowlers, Trespassers, Loiterers, Suspicious Vehicles	449	0:32:13	51.90
Alarms	Hold Up and Intruder Alarms, False Alarms	444	0:17:11	27.70
Average for all r-codes			**0:47:44**	**$76.00**

Source: Calls for service data, Beenleigh Police Communications Centre.

Notes:

1. The data presented in table 4.2 were obtained from an analysis using R-Codes to identify the incident type. A similar analysis using V-Codes yields significant time/cost differences for each of the aggregated incident categories.
2. Calls which appeared to take longer than a normal working shift of eight hours (less than 5%) were excluded from the analysis. It is likely that the latter category reflects a data entry or administrative error and would significantly alter the estimates of both time allocation and total costs.
3. @ $1.67 per minute.

10 a. The cost estimates relate to first response only — they do not reflect the full cost of responding to a call for service (such as investigator's or prosecutor's time) and may underestimate the total costs for police response.

b. Time estimates have been based on a single division. While Beenleigh is a reasonably typical outer urban area, the costs may be greater in rural or semi-rural areas because of longer travelling times.

c. The study does not include data on police-initiated activity (such as stopping and questioning suspects or investigating a suspicious vehicle on their own initiative).

Estimates of the cost of police attending different types of calls are useful for examining the financial implications of repeat calls for service. For instance, table 4.3 shows the estimated cost of providing a first response to repeat calls over a three-month period for the Beenleigh Division. To construct this table, calls for service were matched to specific addresses. The calls that could be matched to a particular location were then divided into various categories depending on the number of calls the location generated. The total cost of each call category was calculated using the average cost of $76.00 per call derived from table 4.2.

Table 4.3 — Estimated cost of repeat calls for service (R-Code)
Beenleigh Police Division
(1 June 1996 – 31 August 1996)

	1 Call [3] (947 addresses)	2–4 Calls (194 addresses)	5–9 Calls (27 addresses)	10+ Calls (11 addresses)	Total
Number of calls[1]	947	471	161	179	1,758
Cost of calls[2]	$71,972	$35,796	$12,236	$13,604	$133,608
		Total cost of repeat calls for service (3 months) = $61,636			

Source: Calls for service data, Beenleigh Police Communications Centre.
Notes:
1. For the three-month period, there was a total of 2,090 calls shared between 1,331 addresses. This number was reduced to 1,758 calls (1,179 addresses) by excluding those calls with insufficient information to complete the analysis.
2. @ $76.00 per call.
3. Data shown in the shaded boxes relate to single calls for service and are not defined as a repeat call.
4. Costs have been rounded up.

Table 4.3 illustrates quite clearly that the cost of repeat calls for service can be substantial. For Beenleigh, the annual cost of providing a first response to repeat calls is estimated to be somewhere around $250,000. However, the full cost is likely to be much higher because this estimate does not include the cost of follow-up investigations, court appearances and so on.

The impact of the project on the cost of repeat calls

It was thought that if a concerted effort was made to solve some of the underlying problems that contributed to high numbers of repeat calls, the number of requests for police assistance would ultimately decrease. This would result in a saving to the community as well as allow police officers to be redeployed elsewhere.

The analysis of the impact of the BCFS Project on the cost of attending to repeat calls for service had two parts. First, all the calls for each of the 19 target locations were grouped together and the total time that the officers spent responding to each call for service was estimated. This was done by calculating the difference between the time that the officers acknowledged receiving the call and the time that the officers told the police dispatcher that they were available for a new assignment. The time taken for each call was then added together and multiplied by an estimate of the per minute cost of the police officers' time from table 4.1. The estimate of $1.67 per minute for police time, which involves two officers responding in a patrol vehicle, was used as the basis of calculating the cost of the call as it reflects the most common type of police response at Beenleigh.

Secondly, the total cost of the time spent by the project officer was estimated. For this purpose, the daily activity logs used by the project officer to record the time in minutes spent on each stage of the problem-solving process were used. These time estimates were then used to calculate a total cost, using the figure of 85 cents as the per minute cost of the officer's time and use of a police motor vehicle (see table 4.4). This slightly understates the cost of the project officer, who held the rank of Sergeant, as the per minute cost used for the analysis was based on the weighted average salary for the ranks of Constable, Senior Constable, and Sergeant.

Table 4.4 — Estimated time and cost of the project officer's Involvement in the BCFS Project

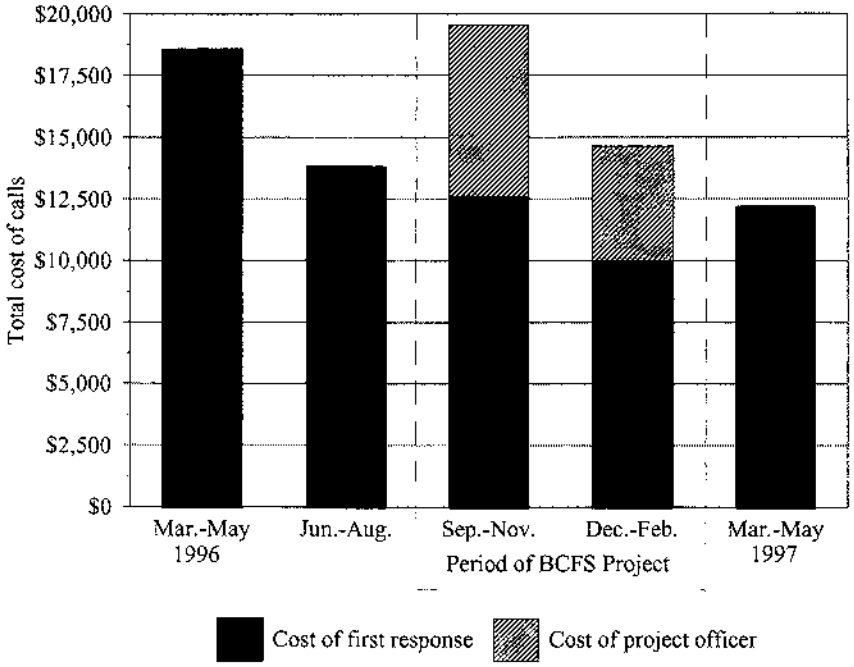
Activity[1]	Sept. 96 (minutes)	Oct. 96 (minutes)	Nov. 96 (minutes)	Dec. 96 (minutes)	Jan. 97 (minutes)	Feb. 97 (minutes)
Scanning	630	505	890	105	345	205
Analysis	520	570	570	370	465	45
Response	710	240	840	600	195	210
Assessment	240	–	170	140	–	840
Report writing	490	105	1,660	465	210	1,245
Cost of the project officer[2]	**$2,202**	**$1,207**	**$3,511**	**$1,428**	**$1,033**	**$2,163**

Source: BCFS Project Workbooks (Activity Return).
Notes:
1. The time analysis excludes all non-project time such as attending court and annual leave.
2. @ 85 cents per minute.
3. Costs rounded up to the nearest dollar.

The total estimated cost of the time spent by the project officer on reducing repeat calls for service at the targeted locations was around $11,500: $6,920 for the first three months of the project and $4,624 for the last three months.

Figure 4.1 illustrates the impact of the BCFS Project on reducing the cost of repeat calls at the targeted locations in Beenleigh. The figure is somewhat complicated by the fact that it adds the cost of the project officer's involvement in the project (as shown by the diagonal bar) to the cost of attending to all calls for service at the targeted locations. To ensure consistency with other figures used in the evaluation, the graph shows the cost of calls for service divided into five three-month periods.

Figure 4.1 — Total cost of responding to calls for service at targeted locations in Beenleigh (1 March 1996 – 31 May 1997)



Source: Calls for service data, Beenleigh Police Communications Centre.

Figure 4.1 shows a general downward trend in the cost of providing a first response to the targeted locations. For instance, from March to May 1996, the cost of attending calls at the targeted locations was estimated to be $18,578. This fell to just under $14,000 for the three-month period before the project commenced, and continued to decline throughout the period that the project was in operation. At the end of the project, the estimated cost of responding to calls for service at the targeted locations had fallen to around $10,000 per three-month period. The cost of attending calls over the March to May 1997 period was 46 per cent less than in the corresponding three months of 1996.

The figure shows that when the cost of the project officer's time is included in the analysis, the cost of responding to calls for service at the targeted locations was $19,524 for the September–November 1996 period. This is slightly more than the total cost of $18,578 recorded for the March–May 1996 period, and substantially more than the total cost of $13,799 recorded for the three months before the project commenced.

However, the figure also shows that after the project ended on 28 February 1997, the cost of attending calls at the targeted locations was nearly 34 per cent less than the cost over the same period in 1996. Although it is difficult to attribute all of this decline directly to the project, the result provides some evidence that problem-solving strategies could be cost effective over the longer term, especially if the reductions in the number of calls remain at the levels reached at the end of the project. Also, as discussed below, the project

provided examples of how problem-solving could be used to reduce calls for service, examples that are being taken up and used by the QPS in other areas.

Examples of the cost-effectiveness of problem-solving

This section provides three case studies that focus specifically on the cost-effectiveness of various types of problem-solving activities undertaken during the BCFS Project. The narratives reported here were principally drawn from a review of the problem-solving workbooks and a detailed analysis of the cost to implement the initiatives. The three examples were selected because they were typical and, as such, would serve as an appropriate alternative measure of the cost-effectiveness of problem-solving.

Example 1: State School – A

During the nine months from March to November 1996, police from Beenleigh Station attended 37 calls for service at State School – A. For the most part, the calls were reports of break and enters at the school.

Table 4.5 shows the total cost of responding to the target over the 15-month period from March 1996 to May 1997.

Table 4.5 — Total cost of first response
Target Location 3: State School – A
(1 March 1996 – 31 May 1997)

	Mar.–May 1996	Jun.–Aug.	Sep.–Nov.	Dec.–Feb.	Mar.–May 1997
Number of calls	18	11	8	8	6
Cost of calls for service[1]	$1,692	$1,034	$752	$752	$564
Cost of project officer's time[2]			$1,156		
			Period of the BCFS Project		

Source Calls for service data, Beenleigh Police Division.

Notes:

1. The cost of the average call for service for this target over the period was $94. This was calculated by multiplying the average time taken to complete the call (58 min:32 sec) by the estimated per minute cost of two police officers in a patrol car ($1.67).
2. The cost of the officer's time was calculated by multiplying the estimated time of the officer's involvement with the target (1,360 minutes) by the estimated per minute cost of a single officer in a patrol car (85 cents).
3. Costs have been rounded up.

As table 4.5 shows, the cost of responding to calls for service at the location trended downwards over the 15 months from March 1996 to May 1997. This is likely due to a series of problem-solving initiatives taken by the project officer during the project. These initiatives included conducting a security audit of the school, recommending the trimming of trees and shrubs to heighten visibility, and encouraging State Government Security to take primary responsibility for security issues involving the school.

The cost-effectiveness of using problem-solving in relation to this target is not readily apparent over the short term of the project. However, if the initiatives trialled during the project can be sustained, it is likely that the cost of responding to calls at this location will substantially reduce over time.

Example 2: Petrol Station

In the six months before the start of the BCFS Project, police received 19 calls from a local self-serve petrol station located on the Pacific Highway near Beenleigh. Almost half these calls were about petrol drive-offs.

The project officer saw that there was a need for a process that not only allowed for faster notification to police that a drive-off had occurred, but also reduced the need for police to attend these types of calls. As a result, a form was designed so that petrol station staff could record the details of the petrol drive-off and fax them directly to the Beenleigh Police Communications Centre. This initiative reduced the demands being made on police, as well as provided a faster means of notifying police.

Table 4.6 shows the total cost of responding to petrol drive-offs at the target for the period from March 1996 to May 1997.

Table 4.6 — Total cost of first response
Target Location 8: Petrol Station
(1 March 1996 – 31 May 1997)

	Mar.–May 1996	Jun.–Aug.	Sep.–Nov.	Dec.–Feb.	Mar.–May 1997
Number of calls	–	7	4	3	3
Cost of calls for service[1]	–	$224	$128	$96	$96
Cost of project officer's time[2]			$1,500		
			Period of the BCFS Project		

Source Calls for service data, Beenleigh Police Division.

Notes:

1. The cost of the average call for service for target 8 over the period was $32.00. This was calculated by multiplying the average time taken to complete the call (20 min:07 sec) by the estimated per minute cost of two police officers in a patrol car ($1.67).
2. The cost of the officer's time was calculated by multiplying the estimated time of the officer's involvement with target 8 (1,765 minutes) by the estimated per minute cost of a single officer in a patrol car (85 cents).
3. Estimated costs have have been rounded up to the nearest dollar.

Although the number of times the police were called to attend to petrol drive-offs at this target fell sharply, the analysis shows that the cost of the officer's time to resolve this particular problem was far greater than the cost of dealing with petrol drive-offs in the usual manner. However, the costs associated with the project will almost certainly be recouped over the longer term. This initiative has now been adopted for use at three other petrol stations in the Beenleigh Division and considerable interest has been shown in adopting the new procedure in other areas. For example, from March 1996 to May 1997, police officers attended 90 such calls in Beenleigh. If the initiative achieved a 50 per cent reduction in the number of requests for police to attend petrol drive-offs, in less than 12 months this should totally cover the cost of the time that the project officer took to design and implement the initiative. Subsequent years of operation, or introduction of the pro-forma report in other areas, will generate substantial savings in police time for the QPS.

Example 3: Supermarket

During the nine months from March to November 1996, 29 calls for service were received from a local supermarket in Beenleigh. Most of these calls were in response to the activation of the store's hold-up alarm. Police attending the scene found that the alarm had usually been set off accidentally by staff.

Table 4.7 shows the total cost of responding to calls at the target location over 15 months.

Table 4.7 — Total Cost of First Response
Target Location 11: Supermarket
(1 March 1996 – 31 May 1997)

	Mar.–May 1996	Jun.–Aug.	Sep.–Nov.	Dec.–Feb.	Mar.–May 1997
Number of calls	1	9	19	4	2
Cost of calls for service[1]	$92	$828	$1,748	$368	$184
Cost of project officer's time[2]				$306	
				Period of BCFS Project	

Source Calls for service data, Beenleigh Police Division.
Notes:
1. The cost of the average call for service for target 11 over the period was $92. This was calculated by multiplying the average time taken to complete the call (56 min:56 sec) by the estimated per minute cost of two police officers in a patrol car ($1.67).
2. The cost of the officer's time was calculated by multiplying the estimated time of the officer's involvement with target 11 (360 minutes) by the estimated per minute cost of a single officer in a patrol car (85 cents).
3. Estimated costs have been rounded up to the nearest dollar.
4. The intervention period for group 2 targets was only for the three months from 1 December 1996 to 28 February 1997.

Reducing the cost of repeat calls at this location was relatively straightforward. Once the project officer had determined the main cause of the problem, all that he was required to do was to make arrangements with the supermarket to have the alarm repositioned. His involvement in finding a solution to the problem was quite inexpensive at around $300. Compared to the cost to service the target location for the September–November 1996 period alone, and in view of the possibility that the problem may have gone on undetected for a prolonged period, it is reasonable to conclude that problem-solving in this instance led to substantial savings.

The three case studies presented in this chapter serve to illustrate the cost-effectiveness of some of the initiatives taken during the project. Some lessons emerging from the cases studies that would enhance the cost-effectiveness of problem-solving include:

- Where possible, ownership of a problem should be transferred to other individuals, groups or agencies that have the primary responsibility for finding a solution, thus possibly alleviating further police involvement.

- The measures put in place to resolve the problem should be long-lasting solutions (e.g. changes to a policy or procedures) as opposed to short-term fixes (e.g. increased police surveillance).

- Successful problem-solving initiatives should be advertised widely within the QPS to promote their adoption in other areas. This will help to maximise the return from initiatives such as the *BCFS Project*.

Summary

The second major objective of the BCFS Project was to see whether problem-solving could be used to reduce the financial costs associated with repeat calls for service at the targeted locations. It was hoped that, along with a general decline in the total number of calls, the project would encourage the adoption of more efficient methods of responding to repeat calls for service.

The main findings were:

- The cost of sending a police car with two officers to deal with a call for service in Beenleigh was estimated to be around $1.67 per minute with the average call for service taking about 48 minutes to complete and costing around $77. The cost of the project officer's involvement in the BCFS project was estimated to be around $11,500. This estimate excludes non-project time such as annual leave and attending court.

- The estimated cost of providing a first response to all repeat call locations in Beenleigh in 1996 was around $250,000.

- The evaluation found some evidence of a downward trend in the cost of providing a first response to targeted repeat call locations in Beenleigh. These savings were initially offset by the cost of the project officer's involvement in the trial. The cost of responding to calls at the targeted locations was substantially less after the project ended than it had been in 1996 before the project commenced. Moreover, some of the initiatives developed as part of the project, such as the strategy for dealing with petrol drive-offs, can be expected to produce substantial savings over the longer term.

- The evaluation also found that several of the initiatives trialled during the BCFS Project were likely to be implemented in other districts and regions, which may result in a substantial future cost saving to police. Such findings indicate that using problem-solving to reduce repeat calls for service could be a potentially a cost-effective policing strategy, especially over the longer term.

5 Improving the Information Management System

Increasing the ability of the IMS to produce a basic workload analysis for use at the local unit level was the third major objective of the BCFS project. The project sought to improve the IMS so that it could be used by operational police as a problem-solving tool. The three strategies used to achieve the objective were:

- identifying IMS modifications that would facilitate the production of a basic workload analysis
- trialling modifications to the IMS aimed at reducing the address-error rate
- advising staff on how to enhance the quality and use of IMS data.

In assessing whether the BCFS Project achieved the objective, two measures of success were chosen:

- ***Reduction in the address-error rate.*** This gives an indication of the extent to which the changes to the IMS improved the general quality and accuracy of calls for service data. Fewer errors signalled an increase in the ability of the IMS to identify potential policing problems, such as chronic repeat call addresses. Data collected in the earliest version of IMS (Version 2.03) were used for jobs in the March–May 1996 period. IMS (Version 3.06) data were used for June–September 1996 and IMS (Version 3.08) data were used for October–May 1997.
- ***Expressed satisfaction with the improvements made to the IMS.*** This indicated the degree of success the project had in enhancing the operational use of the IMS for problem-solving. The assessment was based on feedback from Divisional Officers in Charge in the Logan District and from staff working at the ISB.

Impact of the project on reducing the address-error rate

Before the start of the project, a concern was raised by the CJC's representative on the steering committee that some of the data being collected by the IMS were not of sufficient quality or accuracy to support the project. In particular, several inconsistencies were found in the way in which certain categories of information were being recorded on the IMS. A good example of this problem occurred in the incident address field, which is where the operator records the location of the incident. In one case, the operator described the location of the incident as the *corner of X Street and Y Street*, while other operators, in dispatching patrol cars to the same location, used abbreviations such as CNR, CRN or CNER for the word 'corner'. Although this problem was overcome during the project by hand cleaning the data, this was a laborious process and would not be practical in an operational policing environment.

To improve the quality and accuracy of IMS data, members of the project steering committee met with staff from the ISB to agree on some possible modifications that could be made to the IMS to reduce the number of errors in the address field. For the most part, these changes focused on changing the way that the IMS recorded address data, as well as improving the capability of the IMS to generate basic workload reports for use in problem-solving.

The changes were made during a series of IMS version upgrades. The modifications relevant to the BCFS Project were:

Version 3.06 – separating the incident address field into a series of linked fields (e.g. unit number//street number//street name//suburb name)

– adding a check box to indicate that the incident location has been checked and confirmed as correct

Version 3.08 – creating an effective incident address validation system that self-corrected spelling and formatting errors.

To verify that the modifications had improved the general quality of the IMS data, an analysis was conducted to establish the initial accuracy of the incident address fields, and then to see if accuracy improved during version upgrades. An increase in the accuracy of the address data entered in the incident address field signalled an improvement in the ability of the IMS to search and locate call information pertaining to a particular location. This is considered essential if the IMS is to be used as a problem-solving tool.

A small sample of repeat call locations was used for the analysis. This was largely because IMS Version 2.03 only contained data for the targeted locations. It was also felt that these locations represented a mix of various address types and, therefore, would provide a good variety of the values stored in the incident address field.

The incident address data collected by the IMS were compared with a quality-assured ADDRESS variable created in a computerised statistical software package (SPSS) for analysis. The major difference between the IMS incident address field and the SPSS ADDRESS variable was that the variable was checked and confirmed as correct using a wide range of information (e.g. maps, telephone directories, inspections). In addition, the abbreviations contained in the ADDRESS variable were standardised and all spelling mistakes corrected. The IMS address data, on the other hand, were not quality-assured and so reflected the information as it was recorded by the operator at the time of the call.

Table 5.1 shows the general accuracy of address incident data compared to the SPSS ADDRESS variable, as collected by three different versions of the IMS. The percentage values reflect the percentage of all calls that were able to be matched to quality-assured data for the same location. In reading the table, it is important to remember that a low percentage value equates to a high rate of error.

Table 5.1 – The level of accuracy of data in the IMS address incident field Beenleigh Police Division (1 March 1996 – 31 May 1997)

Target	Location	V2.03 %	V3.06 %	V3.08 %
2	Railway Station A	19	26	28
6	Restaurant	0	0	13
12	Intersection	0	40	33
16	B Road	0	38	100
17	P Avenue	50	40	67
18	D Avenue	0	29	80
Average		**12**	**29**	**54**

Source: Calls for service data, Beenleigh Police Communications Centre.
Notes:
1. An address match was made when a value in the IMS address incident field corresponded to a value contained in the SPSS ADDRESS variable.
2. Percentages have been rounded up.

Table 5.1 shows, in most cases, that the quality and accuracy of the IMS incident address data improved with each successive version upgrade. However, the degree of accuracy for some types of target locations (e.g. targets 2, 6 and 12) still remained very low. These locations were a railway station, a business premises, and an intersection. A check of the incident address field revealed that the address field was usually left blank, or incomplete, and the location description placed wrongly in the precis (call details) field. The relatively high error rate for these three locations was due to the difficulties that the computer had in matching non-standardised data. On the other hand, the modifications made to the IMS substantially reduced the error rate for call locations that had an identifiable address (e.g. unit number, street number). For example, when comparing the error rate for target location 16 across the three major versions of the IMS to the control sample, the degree of accuracy went from 0 per cent in IMS Version 2.03 to 100 per cent for Version 3.08. This was mainly because the latest version of the IMS allows the operator to enter the address using a set format (e.g. unit number//street number//street name//suburb name). This avoids some of the problems encountered using an earlier version of the IMS where the operator could enter the address in several different ways (e.g. #1–2, No. 1–2). Furthermore, the newer versions of the IMS incorporate an address confirmation feature that requires the Communications Room supervisor to be satisfied that sufficient efforts have been made to check that the address is correct and properly recorded.

On the whole, these are good results for the project and provide a fair degree of evidence that the changes to the IMS reduced errors and inconsistencies in how the data was entered into the incident address field. This is particularly true of newer versions of the IMS.[11] Although there are a number of other strategies that could be put in place to improve the quality and accuracy of the data still further, such as additional training for IMS operators, they are unlikely to require any further changes to the IMS. As long as the the call location is properly described and recorded, the current version of the IMS is capable of producing accurate, timely and useful information that would support most basic problem-solving initiatives.

11 Since the conclusion of the BCFS Project, IMS Version 3.08 has been replaced by Versions 3.4 and 3.5.

Impact of the project on improving police satisfaction with the IMS

Traditionally, police have made little use of calls for service data for two main reasons. First, police tend to rely almost exclusively on crime data, which is consistent with the view held by many police that their primary role is crime detection and investigation. The second reason relates to the difficulties that police have had accessing timely and accurate calls for service information. Although the development of computer-based information systems had made this easier, there is a perception among some operational police that the IMS is 'not up to the task'.

To challenge this perception, a small part of the project focused on demonstrating the IMS's potential as a problem-solving tool. It was hoped that a modest demonstration of the capability of the IMS would encourage police to begin making more productive use of calls for service data. Hence, a set of basic IMS workload reports, which could be accessed by local police managers via the QPS computer network, was produced and distributed. Originally, it was hoped to include a much wider range of reports; however, this was not possible within the time frame set down for the project. In the end, only three types of workload reports were trialled: (1) Number of incidents by type of incident; (2) Number of incidents by time of day, and (3) Number of incidents by day of week.

The reports were distributed via e-mail to Divisional Officers in Charge from the Logan District with a request for them provide feedback about the suitability of the reports. Most recipients replied that they found them very useful, though some felt that they needed to have access to more information — especially to reports that helped them to identify repeat call locations or displayed the calls using geographic mapping software. Other comments were:

> These are great ... the system [IMS] is finally beginning to have some credibility. *(personal communication, intelligence officer)*
>
> Even before the project started we had access to IMS information, but it was always very time consuming to get it ... I like the way that you have done this. *(interview, officer in charge)*
>
> The IMS has come a long way. It's certainly more functional now. *(personal communication, officer in charge)*

In addition to the feedback about the demonstration, the increased capacity of the IMS was a topic of discussion during a series of problem-solving workshops held shortly after the project ended with police officers from South-Eastern, Southern, Metropolitan North, and North Coast Regions. During each workshop, a brief presentation was given on the use of calls for service data, which highlighted the improvements that had been made to the IMS. The participants from the areas currently serviced by the IMS seemed fairly happy with the current version of the IMS. Although a few officers felt that they lacked proper training in the use of calls for service information, most could see the benefits of using the IMS to initiate the problem-solving process.

Summary

This chapter has focused on the efforts to enhance the quality and accuracy of calls for service data, and to improve police satisfaction with the IMS.

The main findings were:

- During the project there was a marked improvement in the general quality and accuracy of IMS data, which for the most part can be attributed to a series of modifications to the IMS carried out by the ISB.
- Despite the project's success in improving the general quality of IMS data, accuracy remained low for those types of addresses that were not readily identifiable by street number or street name, such as public parks and schools.
- Some progress was made towards reversing the perception held by many operational police that the IMS was not particularly useful. Officers interviewed for this evaluation were generally happy with the changes made to the IMS and enthusiastically supported efforts to develop the IMS still further as a managerial and problem-solving tool.

6 Increasing police support for problem-solving

Promoting acceptance of problem-solving as a useful alternative policing strategy was the fourth major objective of the project. This was to be achieved by:

- providing information to Beenleigh police about the BCFS Project
- assisting the QPS in the development of course materials dealing with problem-solving
- developing a workshop program for operational police aimed at promoting the application of problem-solving.

Two key indicators were used to assess whether the project succeeded in increasing the level of support for problem-solving:

- ***Increases in the level of awareness of the Beenleigh Calls for Service Project.*** 'Awareness' related to how well informed Beenleigh police were about the project. The main concern was whether the project was successful in communicating its purpose to those police not directly involved.
- ***Increases in the level of knowledge about problem-solving.*** The evaluation considered whether there was evidence to suggest that the project provided police officers with basic problem-solving skills that could be used to deal with some local policing problems.

The major sources of data used were the results of interviews with various project stakeholders and the results of two surveys of Beenleigh police officers.

Impact of the project on increasing awareness

The main strategy designed to increase awareness of the BCFS Project was intended to be a brief presentation to all staff before the project commenced explaining its main purpose, but this proved too difficult to arrange. As a result, information about the project was disseminated to staff using the internal e-mail system. In addition, the BCFS Project Officer attempted to make personal contact with as many Beenleigh officers as possible to inform them of the project.

Table 6.1 presents survey findings comparing the level of awareness of the BCFS Project among officers stationed at Beenleigh before the start of the project with the level of awareness shortly after the project ended.

The first survey was distributed to all (50) Beenleigh police officers before the start of the project (August 1996). Thirty-six questionnaires (72%) were returned before the 1 September 1996 deadline. The second survey was distributed to all (then numbering 56) Beenleigh police officers shortly after the project ended. Only 26 (46%) surveys were returned.

Table 6.1 — Awareness of the BCFS Project

Have you heard of the BCFS Project?	Pre-project awareness survey August 1996 (n=36)	Post-project awareness survey April 1997 (n=26)
Yes (%)	44	50
No (%)	56	50

Source: BCFS Project Awareness Surveys (1996, 1997).
Note: Percentages have been rounded up.

Table 6.1 does not show any substantial change in the level of awareness of the project while it was in operation. It is disappointing that no more than 50 per cent of Beenleigh officers who responded to either survey indicated that they had ever heard of the project. When asked how they had heard of the project, most (85%) said that they had been told of it by a fellow officer (see table 6.2). Only 15 per cent of those responding to the second survey said that they had found out by reading the e-mail messages.

Table 6.2 — How Officers were first made aware of the BCFS Project

How the officer first heard of the BCFS Project	% of Respondents (n=13)
Fellow police officer	85
E-mail	15

Source: BCFS Project Awareness Survey 1997.
Note: Percentages have been rounded up.

There are probably three main reasons the project did not achieve a noticeable increase in awareness among Beenleigh police. First, it was not possible to implement the strategy of briefing Beenleigh police beforehand about the purpose of the project. Secondly, continual staff changes over the period of the project meant that some of the new Beenleigh officers had not had an opportunity to hear of the project. Thirdly, Beenleigh Division is an extremely busy station, so it was probably unrealistic to expect that all of the officers stationed there would have had time to read about the project or discuss it with the project officer.

In hindsight, the difficulties encountered in raising the level of awareness of the project among Beenleigh police were underestimated. If emphasis is to be given to this issue in future, better ways need to be found to communicate the objectives and methods of the project. At a minimum, there should be a comprehensive marketing strategy designed to maximise the opportunities to inform police officers.

Impact of the project on increasing the level of knowledge about problem-solving

When the project was established, one of the aims was to increase the knowledge that police officers had about the problem-solving process. It was hoped that by demonstrating how problem-solving could be adopted and used to tackle repeat calls for service, police officers would begin to use problem-solving to deal with local policing concerns.

There were two strategies used during the project that were designed to increase knowledge about problem-solving. The first strategy was to assist the QPS develop a Competency Acquisition Program (CAP) module dealing with Problem-Oriented Policing (POP). This entailed advising the QPS on the problem-solving component of the module. The CAP module is scheduled for release sometime in 1998. At this stage, it is difficult to say whether it will have any effect on raising the level of knowledge in this area.

The second strategy was to develop a one-day problem-solving workshop. This workshop was designed to provide senior police officers at the rank of Sergeant, Senior Sergeant, and Inspector with basic skills in the use of problem-solving, skills that could then be used operationally. The specific objectives of the workshop were to:

- increase the level of understanding of the concept of problem-oriented policing
- improve the level of knowledge about the problem-solving process
- increase an officer's ability to use problem-solving to identify and handle a potential policing problem.

The first workshop took place at Maroochydore on 20 November 1996. The second was originally scheduled to take place at Surfers Paradise before the end of the project; however, due to other policing priorities, it was rescheduled to 12 March 1997. Table 6.3 provides examples of the topics covered. The program has since been revised to place more emphasis on applying the SARA model to hypothetical situations.

Table 6.3 — Topics covered in the problem-solving workshops

An Introduction to Problem Oriented Policing
Problem-solving as a Method of Inquiry
The (SARA) Problem-solving Model
Problem-solving in Practice – BCFS Project Case Study
Overcoming Organisational Barriers to Implementing POP

Source: Surfers Paradise Workshop Agenda, 12 March 1997.

At the end of each workshop, each participant was asked to rate the program's content and standard of presentation, and to give it an overall rating. Table 6.4 shows the combined results of the Maroochydore and Surfers Paradise surveys.

Table 6.4 — Participants' rating of the problem-solving workshop

	1 Poor	2 Below average	3 Average	4 Above average	5 Excellent
Content	–	–	5%	91%	5%
Presentation	–	–	14%	81%	5%
Overall rating	–	–	5%	81%	15%

Source: Workshop Evaluation Surveys (1996, 1997).
Notes:
1. N=21.
2. Percentages have been rounded up.

All of the workshop participants rated the program very highly overall, with most rating the workshop as 'above average' in all categories. In addition to the very favourable assessment, several attendees took the opportunity to comment on the workshops during the survey. The following responses were typical:

> ... a very good workshop — allowed us to put theory into practice ... *(Surfers Paradise participant)*
>
> ... assisted me greatly in making my limited resources more effective ... *(Surfers Paradise participant)*
>
> ... I liked the workshop because you can use this knowledge back in the workplace ... *(Surfers Paradise participant)*
>
> ... the workshop gave me an insight into looking at a problem from a different perspective ... *(Maroochydore participant)*
>
> ... this was by far one of the most interesting and worthwhile courses that I have ever attended ... *(Maroochydore participant)*
>
> ... this [workshop] should be compulsory for all police officers ... *(Maroochydore participant)*
>
> ... I am frustrated that others who didn't attend will not receive the benefits of this course ... *(Maroochydore participant)*.

The extent to which the BCFS Project can be credited with increasing the level of knowledge about problem-solving is not easily assessed. Nonetheless, there are some definite signs that the project succeeded in raising the level of knowledge of problem-solving among those senior police officers who attended the problem-solving workshops. Based on their comments, there is reason to be optimistic that these officers will begin to use problem-solving routinely and influence others to do the same. It is as yet too early to tell whether the project raised the level of knowledge about problem-solving more generally. As more information becomes available to police, it seems likely that knowledge of problem-solving will continue to increase throughout the QPS.

Summary

Increasing the level of police support for problem-solving was the fourth major objective of the project. The features designed to promote police acceptance of problem-solving were: informing police about the project, assisting police in the design of course materials dealing with problem-solving, and developing a workshop program aimed at promoting the application of problem-solving by operational police.

The main findings were:

- The project had little or no impact on the level of awareness of the project among most police officers at Beenleigh. According to surveys taken before and after the project, there was no substantial change in the proportion of officers who had ever heard of the project.

- There were some definite signs that the project raised the level of knowledge about problem-solving generally, especially among those senior police who attended two problem-solving workshops held during the project.

- Based on the comments of the workshop attendees, there is reason to believe that these officers will begin to use problem-solving routinely and will be encouraging others to do the same.

7 Assessment of project implementation

This chapter looks at how well the BCFS Project was implemented. The findings give an important insight into the operation of the project, and also indicate why certain aspects did not yield the expected results. In addition, the feedback the findings provide can be used to enhance the design of future projects.

Two main factors were examined: conformity with project design and organisational support. A variety of data sources were used, including interviews with senior police management, steering committee members and the project officer; problem-solving workbooks; notes from steering committee meetings; and summaries of calls for service data.

Conformity with project design

The three main aspects of the project relevant to an assessment of its implementation are:

- the role of the steering committee
- the focus on high-volume repeat call locations
- the use of the problem-solving model.

The role of the steering committee

As stated previously, the CJC and the QPS South-Eastern Region had overall responsibility for the BCFS Project. However, the day-to-day management was the responsibility of a steering committee made up of representatives from the QPS and the CJC. For the most part, the committee members were officers in charge of operational policing units or specialists with expertise in areas such as research, project management, crime prevention, intelligence or computer technology.

The main function of the steering committee was to oversee the conduct of the project. It was also expected that committee members would use their expertise to support various aspects of the problem-solving process. For example, where the problem-solving response called for the formulation of a crime-prevention initiative, the representative from the QPS Crime Prevention Unit was to be involved in the design and implementation of the initiative. In addition, it was hoped that the steering committee would assist in linking other operational police units with the project.

On the whole, those interviewed during the evaluation were reasonably satisfied with the role that the committee played in managing the project. However, the project officer, and some others, felt that the steering committee could have done more in the development and conduct of the problem-solving trials:

> Each person on that committee obviously had different areas of expertise and their input would have certainly been beneficial. However, I did find that more assistance could have come from the committee. Basically, what I am saying is that I was left to my own devices. Decisions were made by myself in most cases ... I would have liked a little bit more input by having them come up with suggestions to try this, or try that. *(interview, project officer)*

There were two main reasons for the steering committee not being more directly involved in the project. First, several committee members were senior police officers in command of operational units and so did not have large amounts of time to devote to the project. Secondly, some members of the committee said that they would have liked to have done more but were unsure of what role to play.

Although the steering committee's limited involvement was not a major shortcoming of the project, future initiatives of this type could focus more attention on increasing the role of the committee. One way of accomplishing this would be to develop concise role statements for each committee member that suggested ways the member could participate more actively.

The focus on high-volume repeat call locations

There are at least four different types of repeat call locations:

1) chronic problem locations, which regularly generate a lot of calls for service

2) problem locations that 'flare-up' and generate a lot of calls for service for a short time

3) continual low-level problem addresses, which generate only a few calls for service, but do so regularly

4) problem addresses near each other — individually, these addresses do not generate many calls for service, but the police are continually being called to the location to deal with incidents (CJC 1995, p. 51).

Because of the fairly short duration of the project, it was decided to concentrate on high-volume repeat call locations. This was done to yield the maximum benefit to Beenleigh Division in the shortest time possible. In addition, there were numerous difficulties in assuring the quality of IMS data during the initial phases of the project, which made anything more than the identification of high-volume call locations nearly impossible to achieve. Ultimately, two target groups, each designed to contain 10 repeat call locations, were selected. Each of the groups contained a variety of location types ranging from government facilities to public parks and private residences.

The officers interviewed for the evaluation generally agreed with how the targets were selected:

> I think the targets contained a good mixture of different things ... it's obviously important for a project like this to find out if problem-solving works in different kinds of situations ... *(interview, steering committee member)*

> I was quite happy with the way that it [target selection] was done ... what I would like to do is train officers here to use the IMS data in the same way that you [CJC] did up there ... *(interview, senior police officer)*

The focus on chronic high-volume call locations and the manner in which the targets were selected were found to be suitable for the purposes of the project. The targets presented an interesting mix of matters routinely handled by police, while at the same time providing a means of assessing the effectiveness of problem-solving under a variety of circumstances.

Use of the problem-solving model

Problem-solving is a structured method of inquiry that encourages police officers to move away from handling individual calls for service to tackle the conditions that cause them. Although some police officers interviewed for the evaluation said that problem-solving was nothing new[12], two of the officers believed that problem-solving represented a major shift in the way police go about their business:

> It [problem-solving] is a major paradigm shift for police — I mean, police should be learning to learn a different way. Otherwise we are just not going to keep up with the Jones'— we are going to get left behind. It will take time — you can't eat a whole pizza in one bite, but if you take one small bite at a time, at the end of the day you will find that you've eaten all of the pizza. *(interview, senior police officer)*

> Problem-solving is really about going about policing in a much more organised and coordinated way ... It allows the officer to take the time to think about how they do their job and gives them the imprimatur for focusing on problems. *(interview, steering committee member)*

Despite a general feeling that problem-solving had the potential to improve the way police respond to calls for service, several officers felt that there were major obstacles to overcome before problem-solving was widely accepted as a policing strategy. For instance, one police officer felt that the QPS continually reinforced a conservative organisational culture not conducive to radically different approaches to service-delivery. Other concerns expressed ranged from a worry that members suffered from poor training in the area of problem-solving to a belief that some police would be reluctant to try problem-solving for fear of criticism or failure:

> I believe police inherently possess some skills in problem-solving. It's not however, borne out by the managerial structure of the service. It does not either encourage or foster that type of thinking. *(interview, steering committee member)*

> Police officers have many skills, but they don't have all of the attributes that would make them a credible problem-solver. They need to have training and a structure for problem-solving. They [police officers] are very receptive, very positive, and they have a lot to contribute. It's only the opportunity that has been denied to them. *(interview, steering committee member)*

> For police officers, the fear of failure is very real, it's a fear of being castigated for having tried something different and failing at it. It seems that the only projects that one should be involved in are ones that are guaranteed of success. This of course restrains innovation ...We as an organisation [QPS] can't hang on to the comfort zone that we have hung onto for such a long time. We can't keep orbiting the same old comfortable lounge chair. We're approaching the second millennium, it's time we took on new approaches and started getting smarter. *(interview, steering committee member)*

To help the project officer, a workbook was developed setting out the various stages of the problem-solving process. The workbook was based, in part, on the *Problem-Solving Report* developed by the Edmonton City Police in Alberta, Canada.[13]

The workbook was divided into four parts. The first part focused on the scanning stage of the model. Through a series of questions, the officer was asked to describe the problem, determine its seriousness, and identify individuals in the community who were primarily responsible for causing or fixing it. The second part dealt with the analysis phase of problem-solving — it considered the place, date, and time that the problem occurred, the role of third parties, and the effectiveness of previous police or community responses to the problem. The third part covered the steps required to develop an effective response aimed at resolving the problem. The officer was encouraged to describe fully the type of action that would be taken to reduce repeat calls and how the response would be monitored. The final part of the workbook

12 Comment made by police officer during the Surfer's Paradise Problem-Solving Workshop, 12 March 1997.

13 Correspondence received from Staff Sergeant D Veitch, Edmonton Police Service, 4 July 1996.

looked at assessment. It gave a structure for the officer to evaluate the effectiveness of efforts to resolve the problem, as well as helping to identify those factors that contributed to the success or failure of the response. A copy of the workbook used during the BCFS Project is attached as appendix C.

The general feeling of those interviewed for the evaluation was that the problem-solving model adopted for use during the project provided a useful framework for officers to tackle the problem of repeat calls for service:

> I haven't seen the results yet. However, the processes that I was privy to were quite plausible, quite applaudable ... I have no doubt that the evaluation will bear out the success of the program. *(interview, steering committee member)*

> Well it [the problem-solving model] allowed lateral thinking, it allowed me to sit down and think — hey, how would I address this problem and what would I like to do about it. It's allowed me to try different things. *(interview, project officer)*

Organisational support

In the end, the success of an initiative such as the BCFS Project is often directly proportional to the support it receives from the sponsoring agency. In assessing the support for the project, two main factors were looked at: the adequacy of allocated resources and the degree of managerial support.

The adequacy of resources

As stated earlier, the BCFS Project was the joint responsibility of the CJC and the QPS. The CJC agreed to provide the equivalent of one full-time research officer for one year to take primary responsibility for the design and evaluation of the project. The QPS agreed to fund a police officer full time for the period of the project, as well as to provide the computer support needed to facilitate a number of design changes to the IMS.

Apart from the provision of staff, the project did not require any other financial support. It did not have a separate operating budget and any costs incurred were absorbed by the CJC or the QPS. For example, before the start of the project, an information technology audit of the Beenleigh Police Communications Centre was conducted by the ISB. The purpose was to see if the centre's computer capacity was sufficient to support the project properly. As a result of the audit, a new computer was purchased, with the cost shared equally by the two sponsoring agencies.

The project officer expressed only a few minor concerns about the adequacy or availability of other material resources. For the most part these concerns related to the occasional unavailability of a police vehicle to conduct inquiries and the lack of a computer for use during the project. However, the project officer acknowledged that:

> ... they were made available to me when I needed them ... I certainly wasn't impeded in any way by a lack of resources.

Degree of managerial support

The BCFS Project received a consistently high degree of support from the CJC and the QPS. Senior regional police officers spoke very favourably about the project and expressed hope that it would be a complete success:

> This kind of project is very important to the region ... We need to get on top of our workload and find ways to better service our community. Hopefully, your evaluation will show that we are on the right track. *(interview, commissioned officer)*

Further evidence of support for the project is illustrated by the willingness of senior management to act on suggestions from the steering committee and project officer, even when these suggestions described some accepted work practices as inefficient. Their preparedness to reflect critically on longstanding procedures was the subject of several comments:

> ... finally somebody [the BCFS Project] has sat down and asked: what are we doing? — why are we doing it, and how can we fix it? Now, some people will try and tell you that we do that all the time-well the fact is we don't. We'd like to think we do, but really, we don't ... in the long term, I would hope this whole initiative goes Statewide, I think it can't be anything but a help. *(interview, commissioned officer)*

> One of the great things about the project was that it highlighted important issues about our use of police resources at Beenleigh. Interestingly enough, one of the greatest users of police resources wasn't a member of the public, it wasn't an outside organisation — we [the police] were our own best customer. *(interview, commissioned officer)*

Support for the project was also high at the divisional level. This was particularly noticeable among the more senior non-commissioned officers:

> The project has obvious benefits and it is certainly not a waste of time. It gives one a boost by feeling that management is trying and willing to make the road copper's job a little bit easier. *(BCFS Project Awareness Survey)*

> Any project which tries to reduce the number of calls for service is a worthwhile project. *(BCFS Project Awareness Survey)*

On the whole, those interviewed for the evaluation felt that the project was adequately resourced and well supported. Of particular note was the high level of support for the project at the regional level, where it was seen as a major breakthrough in trying new ways to serve the community through better management of police workload.

Summary

Few significant problems were encountered during the implementation of the BCFS Project, and cooperation between the CJC and the QPS remained high.

The major factors that facilitated the implementation and operation of the project were:

- ***A tried and tested framework for problem-solving.*** Much of the conceptual groundwork for problem-solving had already been well established during earlier projects such as the Newport News Project and the Toowoomba Beat Policing Pilot Project. By using an existing framework for problem-solving, considerable time was saved during the planning phase.

- ***Committed and enthusiastic participants.*** The project was fortunate in that several highly motivated individuals were involved. Their dedication was a key factor in ensuring that the project was given every chance of success.

- ***Managerial support.*** The project was seen as important to the region and was strongly supported by senior police. This support encouraged those directly involved in the project to innovate and think laterally about ways to resolve policing problems.

- ***Adequate resources.*** Although the project did not have a specific operating budget, the sponsoring agencies were responsive to requests for whatever resources were required to complete the project.

Despite the ease with which the project was implemented, there were some lessons learned. The difficulties associated with analysing IMS data, for example, should not be underestimated. Although the capability of IMS is continually improving, analysing calls for service is still time consuming and complex. Considerable work still needs to be done, especially in the area of staff training, to maximise the quality and utility of IMS data.

Attention also needs to be given in the early stages of a project to encouraging interested individuals to take a more active role. This is particularly important if their expertise or experience would add an extra dimension. One way of accomplishing this would be to develop a role statement for all the participants. The statement could outline the various ways in which members could participate in the project more actively.

8 Conclusions

This final chapter is divided into two parts. The first part summarises the key findings of the report. The second part discusses the main issues that arose during the evaluation. The chapter also looks at some of the ways that the use of problem-solving could be enhanced and extended elsewhere in the QPS.

Summary of the key findings

The Beenleigh Calls for Service Project was established by the CJC and the QPS South-Eastern Region on 1 September 1996 as a six-month experiment to find out whether the application of problem-solving strategies could reduce the number of repeat calls for service at targeted locations in the Beenleigh Police Division.

The key findings of the evaluation were:

- The impact of repeat calls for service on the workload of Beenleigh police is substantial. Between June and September 1996, nearly half of all calls for service were from repeat call locations. Furthermore, 11 locations alone accounted for 197 calls (10%) in Beenleigh over this period.

- The implementation of the BCFS Project went reasonably well. Few major problems were encountered and cooperation between the CJC and the QPS remained high throughout. The project was seen as important and strongly supported by senior police in the South-Eastern Region. This support encouraged those directly involved in the project to innovate and think creatively about ways to reduce repeat calls for service.

- One of the main aims of the BCFS Project was to demonstrate how problem-solving could be used to reduce the number of repeat calls for service. For the most part, the types of problem-solving activities undertaken during the project were fairly straightforward, such as improving security, increasing police surveillance of problem areas, providing information and advice, and referring the problem to another agency for resolution. Although these activities suited a small-scale project such as the BCFS Project, more demanding response options could have been implemented if there had been an opportunity to trial them over a longer period.

- There is evidence that the project succeeded in reducing repeat calls at most of the targeted locations in Beenleigh. Throughout the six months in which the project was in operation, there was a downward trend in the total number of repeat calls at the targeted locations. However, the analysis also showed that, after the project concluded, the number of calls for several of the locations returned to near pre-project levels. This may have been due to the discontinuance of some initiatives taken during the project. Such a finding emphasises the need for police to be patient with problem-solving, as some strategies need to be in place over far longer periods to yield any appreciable benefit.

- Although the project reduced the number of repeat calls at the targeted locations, it is not possible to show the impact on the general workload at Beenleigh Division because of the samll scale of the project and the methodological difficulties in interpreting trends in aggregate calls for service data.

- During and after the project there was a downward trend in the cost of responding to the targeted locations. This tended to be offset by the cost of the project officer's participation in the trial, but the cost of responding to calls at the targeted locations was substantially less after the project ended than for the same period in 1996. Some initiatives now in place can be expected to produce

substantial savings for Beenleigh over the longer term. As well, several of the initiatives trialled during the project are likely to be implemented in other districts and regions, which may result in future cost savings to the QPS.

- Less than half of the Beenleigh police officers were aware of the BCFS Project. This is a disappointing result and suggests that a greater effort should have been made to communicate the methods and objectives of the project to officers at Beenleigh. On the other hand, there are some definite signs that the project succeeded in raising the level of knowledge about problem-solving among those senior police officers who attended the two problem-solving workshops held during the period of the project. Based on their comments, there is every reason to believe that these officers will begin to use problem-solving routinely and will be encouraging others to do the same.

Issues to be considered

Although the BCFS Project achieved most of its objectives, in full or in part, the project also highlighted several important issues that need to be considered. These relate to:

- further improving the use of calls for service information
- increasing community involvement in problem-solving
- the 'specialist' versus the 'generalist' approach to problem-solving
- creating a supportive organisational environment for problem-solving.

Further improving the use of calls for service information

Obviously, for calls for service data to be useful, police officers need to have confidence that the information is accurate and easily accessible. Missing data, inconsistent coding, misspellings and overly complex information-retrieval systems are all problems that detract from the quality and accessibility of the data, and ultimately from its usefulness for problem-solving.

As indicated in chapter 6, the difficulties associated with analysing Beenleigh's calls for service were underestimated. Although many of these problems were eventually overcome by a partial redesign of the IMS, additional work still needs to be done to further improve the quality and utility of calls for service information.

There are several strategies that can be put in place to improve the quality of the data further, as well as to enhance the use of calls for service in problem-solving:

- ***Providing clear guidelines to promote consistent recording and classification of calls for service for use by Communications Centre operators.*** A user's manual for the IMS already exists but it focuses on the technical operation of the IMS. What is needed is a data entry guide that outlines the type of information required for each data field and identifies the precise form that the entry should take. It is also important to train Communications Centre staff and police on the application of any new guidelines.

- ***Conducting regular quality assurance audits of calls for service data to reduce errors and ensure consistency.*** Establishing an effective quality-assurance process ensures that problems in data quality can be discovered and rectified quickly. In some areas, the Communications Centre supervisors are already conducting these types of audits. However, the process needs to be formalised and validated to ensure that the audits are routinised and have an agreed set of benchmarks.

- ***Distributing a set of basic reports prepared by using calls for service data for use in problem-solving.*** Most of the police officers interviewed for the evaluation considered that calls for service data were difficult to access at the local unit level. One way to overcome this problem would be for each police division to receive a 'weekly briefing report' containing localised information about calls for service that could be used by police managers to identify any potential policing problems in their area. Several key reports — such as the type of call, the day/time that the call is received and the frequency of calls by location — are already built into the reporting function of the IMS. These reports could be produced at each Communications Centre and distributed to Officers in Charge of Divisions using the QPS e-mail network.

Increasing community involvement in problem-solving

The last decade has shown that much of the public stands ready and willing to assist police in reducing crime and disorder in the community — therefore, involving the community in problem-solving makes good sense. When the BCFS Project was originally established, it was expected that the 'community' in Beenleigh would become involved in the project by working cooperatively with police to find solutions to the problem of repeat calls. It was further expected that a number of strategic partnerships would be formed with those affected by the problem, or be used to identify those who could assist in resolving the problem. In practice, the short length of the project did not allow for the full benefits of these partnerships to be realised, although the project officer did work closely with several individuals associated with the targeted locations.

In future, more emphasis needs to be placed on involving the community in problem-solving. There are, of course, a wide variety of strategies to mobilise the community. Specific ones relevant to problem-solving are:

- using existing networks (e.g. Community Consultative Committees, Community Policing Partnerships, Neighbourhood Watch) to serve as the basis for community involvement in problem-solving (see also CJC 1997b)

- forming specific-interest partnerships when the need arises to handle a particular policing problem

- networking with community and business leaders, government agencies, community groups, and the media to identify individuals and resources that could be used to resolve problems of mutual interest.

The 'generalist' versus 'specialist' approach to problem-solving

One approach to promoting the wider application of problem-solving is to introduce this method on a Service-wide basis and encourage the participation of all members, irrespective of role. Another approach sees problem-solving as the responsibility of a small specialist group. In the case of the BCFS Project, the 'specialist' approach was adopted and found to work reasonably well. However, there is no 'golden rule' to follow when implementing a problem-oriented approach.

A joint QPS–CJC working group, formed to address recommendations 133 and 134[14] of the *Report of the Queensland Police Service Review (1996)*, is currently discussing the possibility of combining the 'generalist' and 'specialist' approaches to problem-solving by establishing problem-solving cells at each level of the regional command structure (e.g. region, district, division). This model combines the two approaches by creating a small expert unit consisting of a Crime Manager, Intelligence Analyst, Research Officer, and Community Liaison Officer at the district level. The purpose of this specialist group is to identify problems, and provide expert advice and support for problem-solving at other levels of the organisation. This type of approach seems to have several advantages in that it:

- brings together all of the people responsible for identifying problems within a division, district, or region, which facilitates the planning and implementation of responses or solutions to a particular problem or issue
- creates a mutually supportive infrastructure for problems that cannot be solved at the local level
- incorporates the role of the specialist problem-solvers with that of rank-and-file officers
- allows for problem-solving to be information-driven using a wide range of data sources (crime reports, calls for service, intelligence reports etc.) while taking advantage of the considerable knowledge that operational police have gained from working directly with the community.

14 Recommendation 133: 'The Committee recommends that the Commissioner develop a clear policy statement about policing in partnership with the community consistent with s. 2.4(2) of the *Police Service Administration Act 1990*'.

Recommendation 134: 'The Committee recommends that the Commissioner devise strategies to implement this policy'.

Creating a supportive organisational environment for problem-solving

Whatever approach is followed to promote the wider application of problem-solving, it is essential that the QPS creates the proper environment for problem-solving by fully integrating it into the organisational culture of the Service. There are some encouraging signs that this is already happening. For instance, the Police Commissioner recently released a new vision statement for the QPS, which reinforces the importance of working in partnership with the community and commits the service to using 'problem-solving approaches' to preserve peace and good order and to prevent, detect and investigate breaches of the law (QPS 1997, p. 2). To give effect to this commitment, consideration needs to be given to:

- reviewing current human resource practices to ensure that they reflect and reinforce the importance of the problem-oriented approach to policing; in particular, emphasis needs to be placed on providing the necessary training and on the development of status and reward systems that encourage the application of problem-solving
- ensuring the availability of accurate, recent, local information so that officers are able to identify problems and make informed decisions about how best to respond
- developing a clear marketing plan for police officers and the public to communicate why there is a need to engage in problem-solving, what the goals and objectives are, who will be doing what, and how the community can become involved
- establishing mechanisms at all levels of the QPS to promote inter-agency cooperation in solving problems of mutual interest
- providing police with sufficient resources and autonomy to facilitate the development of problem-solving initiatives, with the aim of encouraging innovation and experimentation at the local level.

Conclusion

On the basis of the evidence presented in this report, it can be concluded that the BCFS Project has helped demonstrate the effectiveness of using the problem-solving approach to deal with the problem of repeat calls for service. In particular, the project provided an opportunity to experiment with and identify how best to use problem-solving in a busy operational policing environment.

The findings of this evaluation also have implications for the wider application of problem-solving. Briefly, the main lessons from the BCFS Project are:

- It is essential that officers can get accurate and timely local information so they can analyse incidents and identify potential policing problems.
- Problem-solving needs to be strongly supported at the local, district, and regional levels.
- Management needs to take a flexible approach to work practices and encourage officers to innovate and think laterally about what options are available for use in resolving a problem.
- Police need to be patient with the problem-solving process, as some strategies need to be operating over long periods to yield any appreciable benefit.
- Proper strategies need to be put into place to communicate the goals and benefits of problem-solving to police officers and the public.

Appendices

Appendix A — Case studies

Case Study 6

Target location 1
Police Watchhouse

Nature of the problem
High number of prisoner escorts

Background to the problem
During the six months before the start of the BCFS Project, the Police Watchhouse had the largest number of repeat calls for service (72) in the Beenleigh Police Division. For the most part, the calls were requests to transport prisoners to and from various courts, hospitals, and correctional facilities. The use of operational police for escort duties was judged by the steering committee as a major problem in Beenleigh because it diverted police away from operational duties.

Description of the problem-solving response
The current prisoner escort procedures at Beenleigh Police Division were reviewed. The steering committee recommended that greater use of the Southport escort van be made to reduce the need for operational police to perform escort duties. The Southport van routinely passes Beenleigh while escorting prisoners back and forth to Brisbane. It was expected that by combining Beenleigh's and Southport's resources to make better use of the Southport van, the number of prison escorts would be reduced resulting in a considerable saving of resources in Beenleigh.

Outcome
On 11 November 1996, the Southport escort van started transporting prisoners between the various Brisbane-area correctional centres and the Beenleigh Watchhouse. The implementation of the new procedures went reasonably well and the initiative was well supported in the region. However, there were a few minor problems; for example, the van used during the trial was not designed to segregate adult male/female or juvenile male/female prisoners. As a result, there still was a need to transport some categories of prisoners using operational police at Beenleigh. Furthermore, the dimensions of the van prevented it from entering the security enclosure at the Beenleigh Watchhouse. This was not something that could be overcome without having to make major changes to the prisoner loading bay at the watchhouse. Although a contingency plan was developed to alleviate this problem, there was one incident during the trial when two prisoners attempted to escape as they were being put into the van. They were immediately apprehended by police officers supervising the transfer.

An analysis of calls for service for the target showed that the number of calls decreased sharply before the start of the BCFS Project, then flattened out. The main reason for this was that just before the start of the project there was a change in the way that some types of escort jobs were handled by the Communications Centre. This resulted in some types of escorts, especially routine escorts, no longer being recorded on the IMS as a call for service. Although the initiative was considered quite successful by senior management at Beenleigh, the change in the way that escorts were recorded on the IMS made it impossible to see the full impact of the initiative.

Source: BCFS Project workbook.

Case Study 7

Target location 3
State School – A

Nature of the problem
High number of break and enters at a local school

Background to the problem
From March to August 1996, police attended to 29 calls for service at State School – A in Beenleigh. Slightly more than a third of the calls were reports of break and enters at the school.

The project officer reviewed the information contained in the calls for service records and found that there was a need for the school to upgrade security, particularly alarms and external security.

Description of the problem-solving response
A security audit check at the school found several areas vulnerable to intrusion. Discussions were held with representatives of a special task group from State Government Security, which has the primary responsibility for security at the site. As a result, several recommendations were made to the principal of the school. These were:

- trimming trees and shrubs to heighten visibility
- improving property security (e.g. moving items of value to secure locations)
- changing security alarm procedures for staff entering the school after hours
- arranging for the State Government's School Advisory Team to make periodic safety and security audits.

Outcome
There was a downward trend in the number of calls for service at this location. From a high of 29 calls recorded during the March–August 1996 period, the number decreased to 16 (-45%) over the six months of the project. After the end of the project in February 1997, the downward trend continued, with only 6 calls recorded between 1 March and 31 May 1997.

Source: BCFS Project workbook.

Case Study 8

Target location 4
Railway Station – B

Nature of the problem
High number of disturbances, wilful destruction, and trespass/loitering offences in and around a local railway station

Background to the problem
During an analysis of calls for service, it was found that police responded to Railway Station – B 21 times between 1 March and 31 August 1996. A breakdown of the types of calls are as follows: disturbance (8), trespass/loitering (5), wilful destruction (3), and other offences (5).

Railway Station–B was described by the project officer as a fairly easy target for potential offenders because of its poor security.

Description of the problem-solving response

1) In discussions with a senior investigator for Queensland Rail, the project officer was told that there were plans to upgrade security at the station by installing four closed circuit television cameras on the station platform and improving security in the car park.

2) The target was nominated as a priority objective for patrol crews. This meant that patrols of the station area were increased to deter possible offenders.

3) A third strategy — to encourage the local media to print a notification that the station was the subject of increased police surveillance — was considered but not implemented during the period of the project.

Outcome
There was a general decrease in the number of calls for service at the target over the second half of the project, which coincided with the implementation of the first two strategies. The number of calls dropped from 11 over the September–November period, to 5 between December 1996 and February 1997. The number of calls then increased to 14 for the three months after the end of the project, an increase that may be due to the discontinuance of the priority patrol objective scheme.

Source: BCFS Project workbook.

Case Study 9

Target location 5
Public space/park

Nature of the problem
Moderately high number of calls for service relating to unlawful use of a motor vehicle, drugs, and break and enters

Background to the problem
Between 1 March and 31 August 1996, police responded to 12 calls for service at this site. A breakdown of the types of calls are as follows: unlawful use of a motor vehicle (3), break and enters (3), drug-related offences (2), and other offences (4).

The area was used by young people for bicycle riding, skate boarding etc. Very few of the reported offences related directly to the facilities in the area. However, its seclusion provided an ideal place for individuals to congregate and occasionally commit offences.

Description of the problem-solving response
The project officer contacted the 'owner/caretaker' of the facility to discuss the high number of calls, and was told that security had just been enhanced in an effort to reduce vandalism and break and enters. These improvements included installing security grilles, locks and lights at the food kiosks. Apart from increasing the number of police patrols in the area, the project officer considered that very little else could be done.

Outcome
Over the last three months that the BCFS Project was in operation the number of calls for service to this location decreased from 7 (September–November) to 4 (1 December 1996– 28 February 1997). Although increasing the number of patrols in the area may have contributed to the decrease in the number of calls, it is believed that efforts made before the project began to improve security and lighting were largely responsible for the decline in the number of repeat calls.

Source: BCFS Project workbook.

Case Study 10

Target location 6
Restaurant

Nature of the problem
A sharp rise in the number of false security alarms

Background to the problem
Between 1 March and 31 August 1996, the restaurant generated 14 calls for service. A breakdown of the types of calls are as follows: disturbances (4), activation of the store's security alarm (4), and other offences (5).

A detailed analysis of the calls showed that only the four 'security alarm' calls were directly related to the restaurant. In each case the alarm had been activated accidentally while staff were cleaning, or after hours when it appeared that it had been set off by someone hitting one of the windows.

Description of the problem-solving response
On talking with the manager, the project officer felt that the restaurant was doing everything possible to reduce the number of false alarms. In addition, the restaurant recently contracted a local security firm to do spot checks on the premises and to attend each evening as the restaurant was closing, to increase the safety of staff. The project officer felt that very little else could be done to reduce the number of repeat calls.

Outcome
From December 1996 to May 1997, there were no further calls for service relating to alarms at the restaurant.

Source: BCFS Project workbook.

Case Study 11

Target location 7
Railway Station – C

Nature of the problem
High number of property offences and disturbances due to the lack of security in and around a suburban railway station

Background to the problem
Between 1 March 1996 and 31 August 1996, police attended to 15 calls for service at a railway station in the Beenleigh area. A breakdown of the types of calls are as follows: property offences (4), disturbances (5), and other offences (6).

The railway station was somewhat isolated and accessible 24 hours a day. In addition, it was only staffed for part of the day and not outfitted with closed circuit television surveillance cameras. Passenger access to the train platforms was via a subway, which had been used by offenders as cover when committing offences in and around the station.

Description of the problem-solving response

1) Discussions were held with a senior Queensland Rail security employee. The project officer was told that Queensland Rail was planning to upgrade security at the station by installing four closed circuit television surveillance cameras (including at least one camera) in the station subway. Queensland Rail was also planning to increase security in the parking lot by erecting a fence with a locked gate to control access to the lot after normal business hours.

2) A 'Station Watch Program' was established, which involved several nearby residents calling Queensland Rail on a toll-free number if they observed any suspicious activity at the station.

3) A recommendation was made to the Officer in Charge of Beenleigh Division to establish a *Platform Beat Policing Team*, but was unable to be implemented during the period of the project; however, a request was made for the railway station to be included as a priority objective for patrol crews.

4) A fourth strategy — to encourage the local media to print a notification that the location was under increased police surveillance — was considered but not able to be implemented.

Outcome
There was an initial increase in the number of calls for service during the first three months that the project was in operation. However, the number of calls fell over the last three months of the project from 16 (September–November 1996) to 7 (December 1996–February 1997). The number of calls remained constant for the three-month period (March–May 1997) immediately after the project ended.

Source: BCFS Project workbook.

Case Study 12

Target location 9
A Street

Nature of the problem
High number of domestic violence calls

Background to the problem
A block of 20 units on A Street was the site of a high number of repeat calls for service over the six months between 1 March 1996 and 31 August 1996. A breakdown of the types of calls are as follows: domestic violence (4), disturbances (4), and one complaint about a breaker at premises. A more detailed analysis of the calls revealed that all the incidents involved a de facto couple. In almost every case, the calls to police were the result of a domestic dispute between the couple, which escalated to the point of violence.

Description of the problem-solving response
Several attempts were made by the project officer to contact the couple without success. An inquiry with the apartment manager revealed that the couple no longer resided in the unit. Further inquiries revealed that the couple had recently split up and were now living in separate outer-Brisbane suburbs.

Outcome
At the time of the departure of this couple, there was an immediate drop in the number of calls for service. However, the decrease was unrelated to the project intervention.

Source: BCFS Project workbook.

Case Study 13

Target location 10
State School – B

Nature of the problem
Persistent problem with break and enters

Background to the problem
When State School – B was first identified as a potential repeat-address location, it was believed that police had attended about 18 calls for service over the six months between 1 March and 31 August 1996. After reviewing the calls, however, it was discovered that some pertained to another school in Beenleigh with a very similar name.

Although a re-analysis of the data substantially reduced the number of calls pertaining to each of the schools, the steering committee felt that it would be in the best interest of the community to continue concentrating on State School – B, to reduce the number of break and enters further.

Description of the problem-solving response

1) The project officer contacted the principal of the school to discuss what might be done to reduce the number of repeat calls. As a result, a security audit of the school was conducted to expose areas of risk. The project officer later reported that security at the school was adequate. It had a monitored security alarm system and staff seemed to be reasonably security-conscious. The general environment in and around the school was properly landscaped and would not provide any convenient shelter to a potential offender.

2) The project officer also discussed State School – B with a representative of State Government Security, which has overall responsibility for security at the school. It was agreed that, whenever possible, both the Beenleigh Division and State Government Security would increase efforts to patrol the school.

3) A 'School Watch Program' was considered by the steering committee but was found to be impractical because of the positioning of the school in relation to surrounding houses.

Outcome
No further break and enters were reported between 1 December 1996 and 31 May 1997.

Source: BCFS Project workbook.

Case Study 14

Target location 13
Caravan Park

Nature of the problem
A high number and variety of calls for service to a residential caravan park

Background to the problem
Between 1 June and 30 November 1996, police responded to 31 calls for service. A breakdown of the types of calls are as follows: property-related offences (10), disturbances (10), assaults (4), and other offences (7), which largely reflects the fact that the caravan park is, in effect, a small community.

Description of the problem-solving response
Discussions were held with the manager of the caravan park to see if anything could be done to reduce the number of repeat calls. The project officer was told that the caravan park was due to be closed in mid-1997 to make way for the widening of the Pacific Highway. As a result, it was decided by the steering committee to withdraw the target from further consideration.

Outcome
The calls for service to this location fluctuated throughout the period of the project. However, the variations were unrelated to the operation of the project.

Source: BCFS Project workbook.

Case Study 15

Target location 14
L Street

Nature of the problem
High number of disturbances and assaults occurring in and around a large block of units

Background to the problem
Between 1 June and 30 November 1996, police responded to 19 calls for service to a block of units in L Street. A breakdown of the types of calls are as follows: disturbances (7), assaults (3), property offences (3), and other offences (6). The analysis also revealed that most of the calls were related to the actions of one person.

Description of the problem-solving response
The project officer discussed the problem with the landlord, and was told that most of the trouble could be attributed to a chronic alcoholic residing in one of the units. Furthermore, the landlord said that the tenant was the subject of several complaints made by other tenants, and promised to take action to remedy the situation by giving the tenant three-weeks' notice to improve or quit the premises.

Outcome
Because of further incidents, the tenant responsible for most of the repeat calls was served with an eviction notice and left shortly afterwards. Since then, the number of repeat calls steadily decreased from 9 in September–November 1996 to only 5 over the March–May 1997 period.

Source: BCFS Project workbook.

Case Study 16

Target Location 15
R Road

Nature of the problem
High number of seemingly unrelated calls for service from at or near a licenced sports club in a small suburban shopping complex

Background to the Problem
Between 1 June and 30 November 1996, police responded to 12 calls for service to this small shopping centre. A breakdown of the types of calls are as follows: break & enters (6), disturbances (3), abandoned vehicles (2), and one call related to a bomb threat.

The initial assessment was that there was no pattern to the calls. However, a more detailed review revealed that several of the calls involved patrons from a small licenced sports club attached to the shopping centre. Of particular note were several calls involving unruly drunks fighting outside the club, which pointed to the possibility of improper serving practices at the club.

Description of the problem-solving response

1) The project officer contacted the QPS Divisional Licensing Inspector to seek advice on what might be done to reduce the number of repeat calls involving patrons of the sports club. The Licencing Inspector said that the club had a reasonably good reputation in the area and that regular checks of the premises showed that the club met all the conditions of its licence. However, he indicated that he would discuss the situation with the licensee in an effort to minimise the number of calls to police.

2) A second strategy — to encourage the licensee to adopt a 'patron care code' aimed at promoting responsible serving practices — was considered but the project ended before any work could be completed.

Outcome
There was a slight reduction in calls for service to this location during the time of the project and over the three months after the project. For example, during the September–November 1996 period, police responded to 8 calls at the location. This number decreased to 5 during December 1996–February 1997 and decreased further to 4 in the March–May 1997 period. This may be attributable to the contact that the project officer made with the Divisional Licensing Inspector, who may have had an influence on the actions of the licensed premises. Alternatively, the decrease could be due to a random fluctuation in the number of incidents and related calls for service at the target location.

Source: BCFS Project workbook.

Case Study 17

Target location 16
B Road

Nature of the problem
High number of break and enters in an apartment complex

Background to the problem
The target was a block of five units on the outskirts of Beenleigh. In the June–November period before the project began, it had a high number of break and enter calls for service, with each call relating to a different unit within the complex.

These incidents occurred mainly during the day and on week days. A further review revealed that almost all of the break and enters occurred in the space of less than two months and were committed by people using a similar modus operandi.

Description of the problem-solving response
The target was identified as a repeat call location because of an unusually high number of break and enter calls over a fairly short period of time. The project officer carried out an external inspection of the units but was unable to see any areas of potential risk. In addition, he observed that there had not been any further break and enters for several months after the initial flurry of calls. This seemed to indicate that the complex was targeted by transients. In any event, the steering committee felt that there was little else that could be done other than to offer security advice to the tenants. Unfortunately, it was not possible to do so before the end of the project.

Outcome
No further reports of break and enters were received from this target location during the three months that it was under consideration (1 December 1996–28 February 1997) or for the three months after the project ended (1 March–31 May 1997).

Source: BCFS Project workbook.

Case Study 18

Target location 18
D Avenue

Nature of the problem
High number of calls about a prowler

Background to the problem
This target was a low-set dwelling occupied by a female single parent. The residence was located in a high-density housing area near Beenleigh. Between 1 June and 30 November 1996, police responded to 10 calls for service. A breakdown of the types of calls are as follows: prowler (5), indecent assault (1), and other offences (3).

Description of the problem-solving response
The project officer made several attempts to contact the occupant of the premises by phone but was unsuccessful. Inquiries with neighbours revealed that the occupant had left sometime in December 1996. A check with the leasing agent confirmed that the occupant had moved out of the residence without leaving a forwarding address.

Outcome
The calls for service to this location dropped away to zero in the months following the departure of the occupant.

Source: BCFS Project workbook.

Case Study 19

Target location 19
W Road

Nature of the problem
High number of stolen motor vehicles being recovered adjacent to a short, unsealed road near Beenleigh

Background to the problem
The target was a road approximately two kilometres long, surrounded on both sides by private property. For the most part, it was unfenced and covered in thick vegetation. Between 1 June and 30 November 1996, police responded to 17 calls for service. A breakdown of the types of calls are as follows: unlawful use of a motor vehicle/abandoned vehicles (8), break & enter (4), Motor vehicle accident (2), and other offences (3).

A further review of the calls for service revealed that W Road seemed to be a favourite place for abandoning vehicles. This is mainly because it is isolated, and so gives an offender the ideal place to hide a stolen vehicle.

Description of the problem-solving response

1) The project officer considered implementing three different responses. The first was to request the Gold Coast City Council to consider creating a sloping gutter along the length of the roadway. It was thought that this might be an effective method of preventing someone from driving a vehicle onto private property for the purposes of abandoning it. Entry would still be possible, but would be restricted to an established access point. Unfortunately, there was not enough time to develop this initiative.

2) The second initiative was to approach landowners to see if they would consider erecting a fence along W Road to prevent offenders from dumping stolen vehicles on their properties. Once again, there was not enough time to develop the initiative.

3) A third initiative — to increase police patrols in the area — was implemented.

Outcome
The total number calls for service to this location remained fairly constant throughout the period of the project. However, the number of calls pertaining to abandoned or stolen vehicles fell from 5 in June–August 1996 to 3 each for the periods September–November 1996 and December 1996–February 1997. At the end of the project, the number of vehicle-related calls returned to pre-project levels, which may reflect the discontinuance of increased patrolling in the area.

Source: BCFS Project workbook.

Appendix B — Costing model

In order to determine the cost per minute of police time in Beenleigh Division, we calculated:

- the full annual cost of operating the Beenleigh Division (including the watchhouse and the communications room)
- the share of that cost attributable to a constable, senior constable and sergeant respectively
- the number of minutes worked annually by a typical officer and, on that basis, the cost per minute of deploying officers of these ranks, with and without a motor vehicle.

The following discussion details the methodology and data which were used to obtain these estimates.

Full annual cost

Methodology

We defined the full annual cost of operating Beenleigh division as the sum of estimated total labour costs and estimated total operating and capital costs. These estimates do not include the value of land and buildings at the Beenleigh site, on the assumption that the capital cost of land and buildings at Beenleigh can be regarded as 'sunk costs'.[15] Similarly, depreciation has not been included within the cost calculations, as depreciation is not a cash flow variable.[16]

Actual costs were used where they were shown separately in the divisional budget. Other costs were based on an estimate of Beenleigh's share of the regional, or total QPS, budget. For the purpose of estimating these shares we applied the following proportions, based on staff numbers:

- proportion of QPS staff assigned to South-East Region = 10.67%
- proportion of South-East Region staff assigned to Beenleigh = 9.28%

15 Mishan, E J, 1988, *Cost-Benefit Analysis*, 4th edn. Unwin Hyman, London.

16 Horngren, C T & Foster, G, 1991, *Cost Accounting: A Managerial Emphasis*, 7th edn., Prentice-Hall International, New Jersey.

Labour costs

Beenleigh's direct and indirect labour costs consist of:

Beenleigh's share of South-Eastern Region labour costs, including total salaries, wages, payroll allowances, weekend work, FBT, and Payroll Tax, but excluding overtime and holidays: 9.28% of $39,492,000	$3,664,858
1997 budgeted overtime and statutory holidays for Beenleigh	$65,374
Total	**$3,730,232**

Sources: Salary etc. data from South-Eastern Region: Base and Total Allocation – Expenditure Review Statement (as at April 1997); overtime and holiday data are from South-East Region: Monthly Budget Summary - Beenleigh Station (as at April 1997).

Operating and capital costs

Annual operating and capital costs, excluding motor vehicle costs, attributed to Beenleigh Division consist of:

Direct operating costs specific to Beenleigh, such as electricity, plant and equipment maintenance, but excluding oil and petrol	$122,644
Beenleigh's share of the QPS Corporate Services' budget, excluding capital outlays: 9.28% of 10.67% of $97,031,000	$960,778
Beenleigh's share of QPS Capital Outlays: 9.28% of 10.67% of $47,823,000	$473,532
Beenleigh's share of QPS Accrued Employee Entitlements: 9.28% of 10.67% of $136,256,000	$1,349,174
Total	**$2,906,128**

Sources: Data on direct operating costs are taken from the 1997 South-Eastern Region Monthly Budget Summary: Beenleigh Station; all other data are from Department of Police, *Annual Report 1995–96*.

Vehicle costs

Vehicle costs were defined separately to enable us to differentiate between the cost of officers using a vehicle and patrolling on foot.

Annual vehicle costs for Beenleigh were estimated as totalling $69,369, representing budgeted petrol and oil expenditures of $33,369 and an estimated $36,000 for maintenance (6 vehicles at $6,000 per vehicle). Capital costs of new vehicles and depreciation were not included as the net replacement costs of vehicles may be minimal and, in any event, are included in 'capital outlays'.

Total costs

Estimated total Beenleigh costs were therefore as follows:

Total labour costs	$3,730,232
Total capital and operating costs	$2,906,128
Total costs	**$6,636,360**

Note: Total costs does not include vehicle costs of $69,369.

Total cost per officer

In order to determine the full cost of employing a constable, senior constable and sergeant respectively at Beenleigh, we employed the methodology developed by Shapland et al. (1996, p. 24) for calculating the cost of a constable. This methodology essentially involved using data on staff numbers and basic pay rates to calculate the total number of officers who could be employed in Beenleigh if every officer was of the rank in question. The number derived for each rank by this method was then divided into the amount of $6,636,360 — the full annual cost of Beenleigh (less vehicles) — to give a per capita cost for the rank concerned.

The methodology used by Shapland et al. can be expressed by the following formula:

$$FCQ = \frac{FC}{(A_1 \times B_1/BQ) + (A_2 \times B_2/BQ) + \ldots + (A_k \times B_k/BQ)}$$

Where

FCQ = the estimated full cost of an officer of the rank in question

FC = full annual cost of running the station (less vehicles)

A = the number of officers of any given rank in the station

B = the simple average basic pay for the same rank (that is, the average of the pay points for that rank)

BQ = the simple average basic pay for the rank in question

k = the number of different ranks

The data on staff numbers and basic pay rates required for these calculations are set out in the table B.1 below.

Table B.1 — Number of officers and basic pay by rank: Beenleigh

	Rank								
	Exec	Ch Supt	Supt	Insp	Sen Sgt	Sgt	Snr Con	Con	Admin (OO4)
Number of officers	0.0926	0.0924	0.2332	0.9228	6	16	19	36	8
Average basic pay for rank ($)	93,000	77,544	71,159	62,962	45,904	41,049	36,468	30,677	29,564

Sources:

1. Actual current allocated strength for Beenleigh Station, Watchhouse and Communications have been included. Ranks above that of Senior Sergeant are included as the Beenleigh estimated proportion of the Logan District allocation (Inspectors and Superintendents), and the Beenleigh estimated proportion of the South-Eastern Region (Chief Superintendent and Assistant Commissioner). The apportionment is based on staff numbers.[17]

2. Pay rates have been taken from the QPS Enterprise Bargaining Agreement (1.12.94 – 30.11.96) (third increase.) The average basic pay for each rank is the simple average of all pay levels within that rank.

For example, the estimate of the full cost of a sergeant would be:

$$\frac{6{,}636{,}360}{(0.0926 \times 93{,}000/41{,}049) + (0.0924 \times 77{,}544/41{,}049) + (0.2332 \times 71{,}159/41{,}049) + (0.9228 \times 62{,}962/41{,}049) + (6 \times 45{,}904/41{,}049) + (16 \times 41{,}049/41{,}049) + (19 \times 36{,}468/41{,}049) + (36 \times 30{,}677/41{,}049) + (8 \times 29{,}564/41{,}049)}$$

$$= \frac{6{,}636{,}360}{74.45873} = \$89{,}128.03$$

Using the above method gave the following estimated costs:

Sergeant	$89,128
Senior Constable	$79,181
Constable	$66,607
Average	**$78,306**

Costs per officer were calculated for the ranks of Constable, Senior Constable and Sergeant, on the basis that these ranks are most likely to attend calls for service. However, the method of estimation allows for the costs associated with other ranks (and civilians) to be readily calculated.

Cost per minute

The estimates of the cost per minute of an officer's time shown in table B.2 below are based on the assumption that a typical officer works 200 shifts a year and that each shift lasts eight hours.

17 South-Eastern Region: Analysis of Ratio of Civilian Support Staff to Police Officers; current Allocated Strength listing (as at April 1997).

Table B.2 — Estimated cost per minute of an officer's time

	Sergeant	Senior Constable	Constable	Average
Estimated cost per year	$89,128	$79,181	$66,608	$78,306
Average number of shifts per year	200	200	200	200
Average number of hours per shift	8	8	8	8
Cost per shift	$446	$396	$333	$392
Cost per hour	$56	$50	$42	$49
Cost per minute	$0.93	$0.82	$0.69	$0.82

In the case of car usage (table B.3), the shift has been estimated at six hours, providing for 18 hours per day use. This is based on the reasonable assumption that officers in an area such as Beenleigh would be likely to spend approximately two hours of each shift in a briefing on commencing duty, a meal break, and in typing up activity logs and reports before completing duty. For these two hours (spent in the Station), it would be unlikely that the vehicle would be operated.

Table B.3 — Estimated cost per vehicle per minute

Cost per vehicle per year ($69,369 ÷ 6)	Cost per vehicle per day	Cost per vehicle per hour (@ 18 hours per day)	Cost per vehicle per minute
$11,561.00	$32.00	$1.70	$0.03

Combining data from the above two tables gives the following per minute estimates (table B.4), which are used as the basis for the cost analysis presented in this paper.

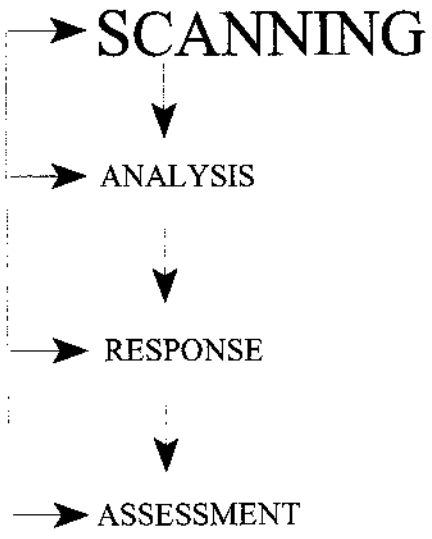
Table B.4 — Costing Estimates

Estimated weighted average cost per minute for a single officer on foot	$0.82
Estimated weighted average cost per minute for a single officer in a police motor vehicle	$0.85
Estimated weighted average cost per minute for two officers in a police motor vehicle	$1.67

Appendix C — Problem-solving workbook

PROBLEM-SOLVING WORKBOOK

STEP 1



Scanning is the first stage of the S.A.R.A. model and involves PROBLEM IDENTIFICATION. The primary purpose of scanning is to conduct a preliminary inquiry to determine if a problem really exists and whether further action is necessary.

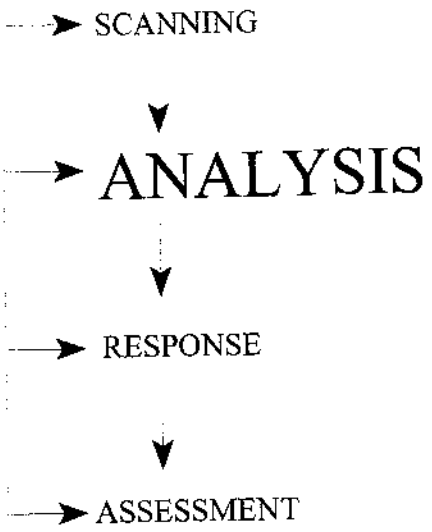
Scanning helps to clarify the situation and sets the boundaries. Step 1 defines the seriousness of the problem and encourages identifying those who have the skills or the power to correct it.

1.1 BRIEFLY DESCRIBE THE PROBLEM

1.2 HOW URGENT OR SERIOUS IS THE PROBLEM

1.3 WHO HAS PRIMARY RESPONSIBILITY FOR THE PROBLEM, AND WHO HAS THE POWER TO CORRECT IT

STEP 2



The second stage, *analysis*, is the heart of the problem-solving process. The purpose of analysis is to learn as much as possible about the problem in order to identify its causes. Analysis considers issues such as:

- **place or location**
- **possible offenders**
- **the victim**
- **role of third parties**
- **previous police responses.**

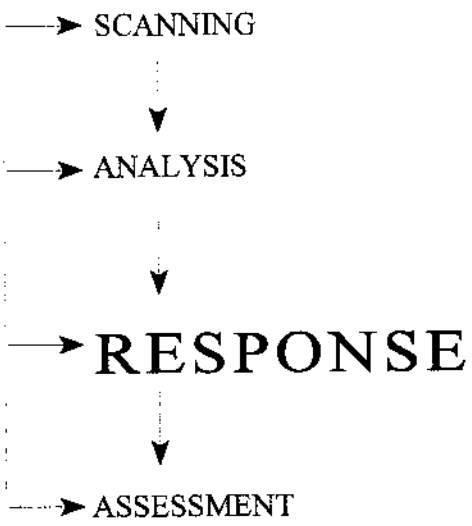
2.1 WHERE DOES THIS PROBLEM OCCUR (e.g. what type of place or location, day of week, time, etc.)

2.2 WHO DO YOU THINK IS RESPONSIBLE FOR CAUSING THE PROBLEM (e.g. offenders, residents, customers etc.)

2.3 ARE ANY THIRD PARTIES INVOLVED (e.g. outside agencies, neighbours, etc.)

2.4 WHAT HAS BEEN THE PREVIOUS POLICE RESPONSE TO THE PROBLEM (e.g. what was done, what wasn't done, etc.)

STEP 3



The third stage, *response*, is the formulation of creative, tailor-made solutions to particular problems. There are a wide range of responses available to an officer including:

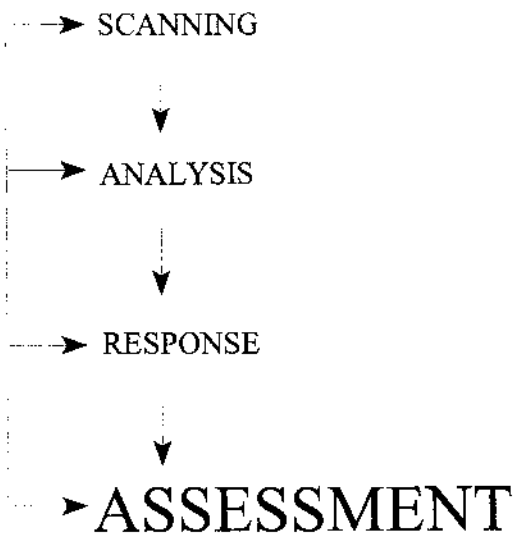
- **mediation**
- **mobilising other groups**
- **crime prevention initiatives**
- **increased regulation or law enforcement action.**

3.1 WHAT ACTION(S) WILL BE TAKEN TO ADDRESS THE PROBLEM (e.g. describe the response, objectives, time frame, who will do what, etc.)

3.2 HOW WILL YOU MONITOR THE ACTION TAKEN

3.3 WHAT SPECIFIC INDICATORS WILL YOU LOOK FOR TO TELL THAT THE PROBLEM IS GETTING BETTER OR HAS BEEN ELIMINATED

STEP 4



The final stage, *assessment*, provides the officer an opportunity to evaluate the effectiveness of their responses to the problem. Assessment is a key ingredient to the problem-solving process. An assessment allows the officer to 'fine-tune' a response to ensure maximum effectiveness, or to formulate new approaches to the problem. In assessing a response the officer should, as a minimum:

- **observe the problem over time to determine if it resurfaces**
- **keep accurate records and document both the positive AND negative outcomes.**

4.1 DID THE ACTION(S) TAKEN REDUCE OR ELIMINATE THE PROBLEM

4.2 WHAT FACTORS CONTRIBUTED TO THE SUCCESS, OR FAILURE, OF THE PROBLEM-SOLVING ACTIVITY

4.3 WHAT MODIFICATIONS COULD BE MADE TO THE PROBLEM-SOLVING ACTIVITY THAT WOULD ENHANCE ITS EFFECTIVENESS

References

Criminal Justice Commission 1997a, *The Cost of First Response Policing,* CJC, Brisbane.

—— 1997b, *Community Consultative Committees and the Queensland Police Service,* CJC, Brisbane.

—— 1995, *Toowoomba Beat Policing Pilot Project: Main Evaluation Report,* CJC, Brisbane.

Eck, J & Spelman, W 1987, *Problem-Solving: Problem-Oriented Policing in Newport News,* Police Executive Research Forum, Washington DC.

Golstein, H 1979, 'Improving Policing: A Problem-Oriented Approach' in *Crime and Delinquency*, no. 25, pp. 236–258.

—— 1990, *Problem-Oriented Policing*, Temple University Press, Philadelphia.

Leigh, A, Read, T & Tilley, R 1996, *Problem-Oriented Policing — Brit Pop*, Police Research Group: Crime Detection and Prevention Series Paper 75, Home Office, London.

Queensland Police Service 1997, *Police Bulletin*, no. 111, April 3, 1997, p. 2.

Queensland Police Service Review 1996, *Review of the Queensland Police Service* (the Bingham Report), Kingswood Press, Brisbane.

Shapland, J, L'Anson, J, Sorsby, A. & Wild, R 1996, *Milton Keynes Criminal Justice Audit*, The Institute for the Study of the Legal Profession, University of Sheffield.

Sherman, L W 1989, 'Repeat Calls for Service: Policing the Hot Spots' in *Police and Policing: Contemporary Issues,* edited by D J Kenny, Praeger, New York.

Williams, V & Sumrall, R 1983, 'Economic Decision Model for Allocating Patrol Services' in *Journal of Police Science and Administration*, vol. 11, no. 2, pp. 136–148.