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Problem-Specific Guides Series
Problem-Oriented Guides for Police

No. 67

Gasoline Drive-Offs

Bruno Meini and Ronald V. Clarke



Center for
Problem-Oriented Policing

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About the Problem-Specific Guides Series

The *Problem-Specific Guides* summarize knowledge about how police can reduce the harm caused by specific crime and disorder problems. They are guides to prevention and to improving the overall response to incidents, not to investigating offenses or handling specific incidents. Neither do they cover all of the technical details about how to implement specific responses. The guides are written for police—of whatever rank or assignment—who must address the specific problem the guides cover. The guides will be most useful to officers who:

- **Understand basic problem-oriented policing principles and methods.** The guides are not primers in problem-oriented policing. They deal only briefly with the initial decision to focus on a particular problem, methods to analyze the problem, and means to assess the results of a problem-oriented policing project. They are designed to help police decide how best to analyze and address a problem they have already identified. (A companion series of *Problem-Solving Tools* guides has been produced to aid in various aspects of problem analysis and assessment.)
- **Can look at a problem in depth.** Depending on the complexity of the problem, you should be prepared to spend perhaps weeks, or even months, analyzing and responding to it. Carefully studying a problem before responding helps you design the right strategy, one that is most likely to work in your community. You should not blindly adopt the responses others have used; you must decide whether they are appropriate to your local situation. What is true in one place may not be true elsewhere; what works in one place may not work everywhere.
- **Are willing to consider new ways of doing police business.** The guides describe responses that other police departments have used or that researchers have tested. While not all of these responses will be appropriate to your particular problem, they should help give a broader view of the kinds of things you could do. You may think you cannot implement some of these responses in your jurisdiction, but perhaps you can. In many places, when police have discovered a more effective response, they have succeeded in having laws and policies changed, improving the response to the problem. (A companion series of *Response Guides* has been produced to help you understand how commonly-used police responses work on a variety of problems.)



- **Understand the value and the limits of research knowledge.** For some types of problems, a lot of useful research is available to the police; for other problems, little is available. Accordingly, some guides in this series summarize existing research whereas other guides illustrate the need for more research on that particular problem. Regardless, research has not provided definitive answers to all the questions you might have about the problem. The research may help get you started in designing your own responses, but it cannot tell you exactly what to do. This will depend greatly on the particular nature of your local problem. In the interest of keeping the guides readable, not every piece of relevant research has been cited, nor has every point been attributed to its sources. To have done so would have overwhelmed and distracted the reader. The references listed at the end of each guide are those drawn on most heavily; they are not a complete bibliography of research on the subject.
- **Are willing to work with others to find effective solutions to the problem.** The police alone cannot implement many of the responses discussed in the guides. They must frequently implement them in partnership with other responsible private and public bodies, including other government agencies, non-governmental organizations, private businesses, public utilities, community groups, and individual citizens. An effective problem-solver must know how to forge genuine partnerships with others and be prepared to invest considerable effort in making these partnerships work. Each guide identifies particular individuals or groups in the community with whom police might work to improve the overall response to that problem. Thorough analysis of problems often reveals that individuals and groups other than the police are in a stronger position to address problems and that police ought to shift some greater responsibility to them to do so. Response Guide No. 3, *Shifting and Sharing Responsibility for Public Safety Problems*, provides further discussion of this topic.

The COPS Office defines community policing as “a philosophy that promotes organizational strategies, which support the systematic use of partnerships and problem-solving techniques, to proactively address the immediate conditions that give rise to public safety issues such as crime, social disorder, and fear of crime.” These guides emphasize *problem-solving* and *police-community* partnerships in the context of addressing specific public safety problems. For the most part, the organizational strategies that can facilitate problem-solving and police-community partnerships vary considerably and discussion of them is beyond the scope of these guides.



These guides have drawn on research findings and police practices in the United States, the United Kingdom, Canada, Australia, New Zealand, the Netherlands, and Scandinavia. Even though laws, customs, and police practices vary from country to country, it is apparent that the police everywhere experience common problems. In a world that is becoming increasingly interconnected, it is important that police be aware of research and successful practices beyond the borders of their own countries.

Each guide is informed by a thorough review of the research literature and reported police practice, and each guide is anonymously peer reviewed by a line police officer, a police executive, and a researcher prior to publication. The review process is independently managed by the COPS Office, which solicits the reviews.

For more information about problem-oriented policing, visit the Center for Problem-Oriented Policing online at www.popcenter.org. This website offers free online access to:

- The *Problem-Specific Guides* series
- The companion *Response Guides* and *Problem-Solving Tools* series
- Special publications on crime analysis and on policing terrorism
- Instructional information about problem-oriented policing and related topics
- An interactive problem-oriented policing training exercise
- An interactive *Problem Analysis Module*
- Online access to important police research and practices
- Information about problem-oriented policing conferences and award programs



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Members of the San Diego; National City, California; and Savannah, Georgia, police departments provided feedback on the guides' format and style in the early stages of the project.

Kimberly Nath oversaw the project for the COPS Office. Phyllis Schultze conducted research for the guide at Rutgers University's Criminal Justice Library. Nancy Leach coordinated the Center for Problem-Oriented Policing's production process. Peter Slavin edited this guide.



The Problem of Gasoline Drive-Offs

What This Guide Does and Does Not Cover

This guide deals with “gas drive-offs”—a form of theft in which motorists intentionally drive away from a convenience store or gasoline service station without paying for gas they have pumped into their vehicle’s tanks. The guide reviews factors that are correlated with an increased risk of this crime. It also covers employee theft related to gas sales; for example, when attendants make false reports of drive-offs and pocket the money the driver paid. The guide then identifies a series of questions to help you analyze your local gas drive-off problem. Finally, it reviews responses to the problem and what is known about these from research and police practice.

The number of gas drive-offs nationwide has declined sharply in recent years, progress which has been brought about by improved video surveillance and the introduction of pre-payment at many convenience stores and service stations. However, the danger of high-speed escapes continues to pose a serious problem. There is an ongoing need, therefore, for police to deal with gas drive-offs. This guide provides information that will help you choose among the different forms of video equipment and pre-pay systems. These have different costs and benefits, rendering them more or less suitable for particular local problems.

While gasoline drive-offs are but one aspect of the larger set of problems related to thefts from commercial establishments, this guide is limited to addressing the particular harms resulting from gasoline drive-offs. Related problems not directly addressed in this guide, each of which requires separate analysis, include the following:

- Robbery of convenience stores
- Shoplifting
- Fraudulent return of retail merchandise
- Burglary of retail establishments
- Check and card fraud

Some of these related problems are covered in other guides in this series, all of which are listed at the end of this guide. For the most up-to-date listing of current and future guides, see www.popcenter.org.



While this guide does not deal directly with other kinds of gasoline theft, some of the measures to reduce gas drive-offs will also reduce the opportunities for these sister crimes. These forms of theft include the following:

- Manipulating the security system on pumps. For example, after prepaying a few dollars' worth of gas, some offenders have learned how to keep the pump operating beyond the amount paid for.
- Posing as maintenance personnel and tapping a pump's metering system to release fuel.
- Stealing directly from the underground tanks at service stations: a driver positions a truck with a hole drilled in its floor over the tank, pries off the tank cover, and inserts a pump that can gulp hundreds of gallons. This is highly dangerous, because the absence of an effective vapor recovery system means one small spark could ignite a blaze.¹
- Using a van or other large vehicle to shield a smaller vehicle from the attendant's view. Several gallons of fuel are siphoned from the gas pump into the smaller vehicle's tank, the pump meter is reset, and then fueling is completed. The offender then pays for the small amount registered on the meter.
- Working as a pair, one offender distracts the attendant through purchases or conversation, while his or her accomplice at the pump fills the vehicle's tank and drives away.²

General Description of the Problem

Retail Fueling Establishments in the United States

There were nearly 160,000 retail fueling establishments in the United States in 2010. This is a marked decline compared to 1994, when the station count topped 200,000.³ At the end of 2010, about three-quarters of these retail outlets were convenience stores selling motor fuel; the rest were mostly conventional gasoline stations, with or without limited items for sale.⁴ Approximately 80 percent of the fuel sold at retail in the United States is dispensed by convenience stores,⁵ 58 percent of which are one-store operations. The National Association of Convenience Stores (NACS) estimates that today less than 2 percent of all of these gas-selling convenience stores are owned and operated by major oil companies, of which only two (Chevron Texaco and Shell) are still committed to sell fuel at the retail level; however, many stations do have contracts to sell a specific brand of fuel.⁶ These "branded" outlets benefit from marketing and advertising support from the oil company, consumer brand loyalty, and precedence in getting access to gas supplies. In return, the branded outlets pay a surcharge for the use of the brand and the benefits that come with it.⁷



The Extent of the Problem of Gasoline Drive-Offs

Gasoline drive-offs have gained widespread attention over the past 30 years, and states have responded with stiffer penalties for “pump-and-run pirates.” Gas drive-offs plague both gas service stations and combined convenience stores-gasoline stations, but the latter account for most of the incidents, partly because they sell most of the gasoline purchased in the United States.⁸ While gas drive-offs are increasingly being brought under control, an extensive problem continues to exist. Some convenience stores still experience two or three gasoline thefts a week at a cost of approximately \$50 per incident.⁹ When a large vehicle is involved the loss from just one gas theft can easily top \$100.¹⁰ Between 2005 and 2009 the total cost of gasoline drive-offs at convenience stores fell sharply from \$300 million to \$89 million.¹¹ This drop has been attributed to the installation of better video equipment and the introduction of pre-payment at many convenience stores.

Employee Theft

Stealing by employees contributes to the gasoline theft problem, but to an unknown extent, because there are no reliable statistics that distinguish customer thefts from those falsified by employees.¹² In addition to clerks who collect payment inside the store, some of the larger retail outlets have attendants who collect payment at the pumps. New Jersey and Oregon are the only states that provide “full service” at gasoline stations due to laws banning self-service at filling stations. Apart from pumping gas, “full service” might include washing the windshield and checking oil and water levels and tire pressure. In these two states, customers cannot handle the fuel pump and attendants are always available.¹³

Employees can use the following various methods to steal:

- Falsely reporting a drive-off and pocketing the payment
- “Sweet-hearting”—giving gas to a friend or associate without receiving payment or with the intent of receiving goods or services as payment
- Failing to register a customer’s gas sale; for example, when the customer is in a hurry, gives the exact payment, and does not wait for a receipt

However, employees cannot usually invalidate the record of a gasoline sale. Each time gas is pumped, the console or the pump will record whether payment has been received; if it has not, a shortage or cash discrepancy will automatically appear at the end of the shift.¹⁴ These recording systems are continually being made more secure (see Response 12 in the section below on responses to the problem).

When employee theft is suspected, some retailers subtract, or threaten to subtract, the shortage in the till receipts from the wages of employees.¹⁵



Reporting Gasoline Drive-Offs to Police

In most cases, stores only report gasoline thefts to the police that are witnessed with enough certainty to identify the suspect and the vehicle's license plate. Reporting to the police also depends on company policy regarding claims for these losses on its tax form. If a store reports the theft of fuel under the "casualty," or loss, column of its tax form, supporting documentation, such as an insurance or police report, would be needed. However, if the company reports the thefts in the "reduction of inventory" column, only inventory figures showing the difference between what was purchased and what was sold would be necessary. The store need not file a police report to provide evidence of the loss for tax purposes.

Harms Resulting from Gasoline Drive-Offs

Gasoline theft can significantly reduce retailers' profits, especially when fuel costs are high.¹⁶ It is money out the door, which they seek to recover by filing insurance claims and increasing gasoline prices. However, higher prices hurt law-abiding customers and result in lower in-store sales, because customers go elsewhere for their gas.¹⁷

Another cost of gas drive-offs is that some thieves try to escape by driving away at high speed. This is dangerous for both employees and customers.¹⁸ Some offenders even drive off with the pump nozzle still attached. They are sometimes stopped by attendants (who risk assault) and then are held liable for the costs of damage to the pump, whether due to negligence or criminal behavior. In some cases, gas stations never follow up, but in others damage claims can range from a few hundred to thousands of dollars. These claims might be settled by the driver's insurance company.¹⁹

Finally, a variety of police and criminal justice costs are incurred in dealing with apprehended offenders, and the community suffers from drop in the perceived safety of the neighborhood.



Factors Contributing to Gasoline Drive-Offs

Understanding the factors that contribute to your problem will help you to frame local analysis questions to identify key intervention points and select appropriate responses.

Store Characteristics

Heavily victimized stores have the following common characteristics that influence offending rates:

- Location in a high-crime neighborhood
- Business practices that encourage/invite crime²⁰ (for example, permitting customers to pump gas before paying)
- A large number of gas pumps
- Fewer than three attendants or clerks on duty
- No garage repair service, so there are few employees around
- Pre-pay option not available during hours of heaviest losses
- Inadequate lighting²¹
- Store windows covered by advertisements²²
- No video surveillance cameras at pump islands²³

Site Layout and Design

Poor site design can impede surveillance, which, in turn, increases opportunities for theft. When the fuel pump island is directly in front of the store, employees inside can see most of the site, and customers can see inside the store.²⁴ Placement of the store in the corner of the site also facilitates surveillance of the pumps and prevents access behind the building.²⁵ In some cases, sight lines might be blocked by tall shrubs or trees. On small sites, many gas stations allow entrance to the pump islands from both directions. This can cause chaos, with cars competing for pump access and pedestrians crossing car paths. One-way in and out permits more controlled and orderly movement and perimeter fencing can reduce escape points.²⁶



Site Location

Considerable variation in rates of gasoline drive-offs (calculated on gallons of gasoline pumped) exist across the United States. A local problem of gas drive-offs might be part of a wider regional crime problem. Even within a particular region or city, some convenience stores and gas service stations have a greater problem than others. Rates of these offenses are generally much higher in urban than rural areas, because thieves have more gas retailing outlets to target.²⁷ In particular, gas drive-offs tend to be a more serious problem in densely populated metropolitan areas and near interstates and highways, where there is greater anonymity; in these areas, retailers have reported losses as much as \$1,500 a month per store. In small communities, where people tend to know each other, the problem is generally not very significant.²⁸

Neighborhood type—whether commercial, residential, or mixed—is particularly relevant. If the store is located in a primarily commercial area, gas theft increases. Because few people live in commercial areas, criminals are less likely to be seen by those who are alert to potential victimization, especially during evening hours.²⁹

Seasonal and Temporal Factors

The majority of service stations are open for business 24 hours a day, which increases the opportunities for offending. However, there are certain times of the day, days of the week, and periods of the year during which sites are more vulnerable to crime.³⁰ Retailers are more susceptible to gas drive-offs during rush hours, lunch hours, and busy weekends.³¹

Reluctance to Invest in Prevention

As discussed below, retailers can deploy a variety of measures to prevent gasoline theft, but they have a countervailing interest in avoiding the costs of these measures, both direct and indirect. Take the use of pre-payment, which is very effective in reducing gasoline drive-offs, but which many convenience stores have been reluctant to introduce. Pre-payment makes buying gas less convenient, especially for cash customers, and so can hurt in-store sales, where margins are healthier. It can also result in customers choosing to go to another store that does not require pre-payment. Encouraging the use of credit cards is no solution, because the processing fees of as much as 10¢ per gallon sold³² has further reduced profit margins for retailers to the point they may be making less money on gasoline sales than the credit card company.³³



Increases in gas prices may result in increases in gas drive-offs.

Offenders

Gasoline drive-offs are a classic example of a crime that is easy to commit and that carries little chance of being caught,³⁴ and many different kinds of people—college students, professionals, business men and women, and even retirees—do commit such theft.³⁵ In some cases, they drive off without paying because they have run out of cash. Many of them may steal only once, but if they get away with it the first time, the chance of becoming repeat offenders greatly increases. Some hardened offenders steal gas on a regular basis. They look for an easy target and often prey on gasoline stations with inattentive staff or poor customer service practices.³⁶

Increases in Gasoline Prices

Retailers claim that gas drive-offs increase when gasoline prices jump in a short time.³⁷ Motorists seem to believe that service stations raise gasoline prices unfairly whenever the media report a rise in the cost of oil. Studies provide some support for this view, and they also indicate that customers are less likely to steal fuel when prices fall.³⁸



Understanding Your Local Problem

The information above provides only a generalized description of gas drive-offs. You must combine the basic facts with a more specific understanding of your local problem. Analyzing the local problem will help you design a more effective response strategy.

Responses tend to work best when based on reliable data about problem behaviors, sites, times of day, physical features, and offender attributes in your setting.

Stakeholders

In addition to criminal justice agencies, the following groups have an interest in reducing gas drive-offs and can be useful partners in gathering information about the problem and responding to it.

Gasoline retailers. These retailers have an interest in reducing gasoline drive-offs to maximize their profits. They possess financial data on their profits and losses, and larger companies may have information about security and station design. They may treat this as proprietary information they are reluctant to share; but, in some cases they may be prepared to share the costs of identified solutions.

Elected officials. People with the power to gauge public concern about the problem and enact legislation to address it.

The media. With their contacts within the community, the media can call attention to gasoline drive-offs and their impact on both the community and on police resources. They can also describe what retailers can do to avoid becoming victims.

Private security. These companies, which keep records on electronic devices in use (e.g., security cameras, license-plate readers, credit-card readers, and fuel dispensers equipped with a password-controlled remote) can supply evidence after violations.

Law-abiding customers. Most customers have an interest in avoiding price rises by retailers to cover losses from gasoline drive-offs. They also can offer insights into merchandising practices that would either encourage or discourage them from entering the stores to pay for non-gasoline goods.



Asking the Right Questions

The following are some critical questions you should ask in analyzing your local problem of gas drive-offs, even if the answers are not always readily available. Your answers to these and other questions will help you choose the most appropriate set of responses later on.

Incidents

- How many incidents of gasoline drive-offs are reported in your jurisdiction?
- Do gas drive-offs occur only at convenience stores or also at service stations?
- What proportion of reported incidents are actually employee theft?
- Do you believe gasoline drive-offs are well reported? If not, how many unreported incidents do you think there might be? (You would need to survey gasoline retailers, employees, and law-abiding consumers to get reliable estimates.)
- Who brings the incidents to police attention? Station clerks? Station managers? Customers?
- What proportion of incidents is directly observed by police, initiated by technology, reported by employees, or noticed by some combination of these methods?
- In what proportion of theft investigations are police able to substantiate that a crime was committed? What are the obstacles to doing so?
- How much gas is usually stolen in an incident?
- What is the financial impact of gasoline drive-offs on local stations?
- How concerned is the community about gas drive-offs?

Offenders

- Are there particular kinds of drivers (e.g., teenagers or adult males) who commit most of the offenses? (If the offenders' identity is unknown, what is known about the type of vehicles that offenders drive?)
- What seem to be the main motives for stealing gasoline in your jurisdiction?
- Do drive-off offenders employ distinctive methods of operation? What efforts, if any, do offenders make to conceal their identity or their vehicle license plate?
- What proportion of the thieves appears to be repeat or habitual offenders?



Locations/Times

- Are gas drive-offs widely distributed in your jurisdiction? Or are they concentrated among a small proportion of stores, which constitute “risky facilities”?[†]
- What environmental factors at these risky facilities contribute to the incidence of gasoline drive-offs (e.g., the site is in an isolated area or has back lanes or rear entrances that can be used as escape routes)?
- What other features of the locations contribute to the incidence of gasoline drive offs?
- On what types of roadways are the stores where most incidents occur (e.g., highways, freeways, or arterial roads)?
- When do most incidents occur (time of day, day of week, month, special occasions, and seasons)? Why do these times encourage gasoline theft?

Current Responses

- What are the reporting policies and practices concerning gas drive-offs of the various stations in your jurisdiction? How are those policies set?
- Do attendants respond efficiently to gasoline drive-offs?
- Are particular crime-prevention measures associated with lower gasoline drive-off rates (e.g., electronic surveillance, outside attendants, warning signs)?
- What are the policies and procedures among area police agencies for handling gasoline drive-off reports?
- How do police usually respond to gas drive-off reports in practice?
- Do police work effectively with gas retailers to prevent drive-offs?
- To what extent are police officers able to intervene in gasoline drive-offs?
- How many citations/arrests do police issue or make for these thefts in your jurisdiction?
- How do private security companies respond to the security needs of convenience stores/filling stations?
- What sentences are typically imposed on those convicted of gasoline drive-offs?

[†] “Risky facilities” are those few members of a particular group of facilities, in this case either service stations or convenience stores, which account for most of the crimes experienced. Analyzing the reasons for this concentration of crime can yield valuable preventive lessons (see Problem-Solving Tool Guide No. 6, *Understanding Risky Facilities*, for further information).



Measuring Your Effectiveness

Measurement allows you to determine how well your efforts have succeeded and may suggest how to modify your responses if they are not producing the intended results. You should take measures of your problem *before* you implement responses to determine how serious the problem is and *after* you implement your responses to determine whether they have been effective. You should take all measures in both the target area and the surrounding area. For more on measuring effectiveness, see the Problem-Solving Tools Guides No. 1, *Assessing Responses to Problems: An Introductory Guide for Police Problem-Solvers*, and No. 10, *Analyzing Crime Displacement and Diffusion*.

The following are potentially useful measures of the effectiveness of responses to gas drive-offs. Process measures show the extent to which responses were properly implemented. Outcome measures show the extent to which the responses reduced the level or severity of the problem.

Process Measures

- More well-secured gasoline pumps and improved surveillance and security at sites
- Increased calls for service (reflecting more witnesses to theft)
- Apprehension of more suspects

Outcome Measures

- Fewer gasoline drive-off reports recorded by convenience store/gas stations and reported to police
- Fewer gasoline drive-off reports to National Association of Convenience Stores (NACS) and to insurance companies
- Reduced average gasoline losses per store and increased profitability of stations from gasoline sales
- Greater perception of security among those using and staffing the facilities
- Reduced consumption of police resources spent handling gasoline drive-offs



Responses to the Problem of Gasoline Drive-Offs

Your analysis of your local problem should give you a better understanding of the factors that contribute to it. Once you have analyzed your local problem and established a baseline for measuring effectiveness, you should consider possible responses to address the problem.

The following response strategies provide a foundation of ideas for addressing your particular problem. These strategies are drawn from a variety of research studies and police reports. Several of these strategies may apply to your community's problem. It is critical that you tailor responses to local circumstances and that you can justify each response based on reliable analysis.

In most cases, an effective strategy will involve implementing several different responses. Law enforcement responses alone are seldom effective in reducing or solving the problem. Do not limit yourself to considering what police can do: carefully consider whether others in your community share responsibility for the problem and can help police better respond to it. In some cases, the responsibility to respond may need to be shifted toward those who have the capacity to introduce more effective responses.[†]

This section reviews what is known about the effectiveness of various practices in dealing with gas drive-offs. The information is limited, because few of the common preventive practices have been thoroughly evaluated. Retailers have been reluctant to undertake the necessary studies and to share the results of any studies they do complete. The government has funded little research in this field, which is regarded as the private sector's domain.

General Considerations for an Effective Response Strategy

Police can do little on their own to prevent gas drive-offs, and you may have to persuade the retailers themselves to act. You may have to explain why police cannot achieve much through more patrols and arrests and why heavier court sentences can have a limited impact. You may want to explain how the store's practices may be contributing to the problem. You may have to convince owners and managers that they cannot ignore the problem, in light of the costs to the community and, in the long run, to the stores themselves. Finally, you will have to offer them guidance on preventive measures they can take to reduce the problem.

[†] For more detailed information on shifting and sharing responsibility, see Response Guide No. 3, *Shifting and Sharing Responsibility for Public Safety Problems*. For further information on managing the implementation of response strategies, see Problem-Solving Tools Guide No. 7, *Implementing Responses to Problems*.



You will be helped in making your case if your state is among those which already have laws on the books regarding gasoline thefts. This will assist in dealing with the criticism that the courts are too lax in dealing with offenders. In most states it is a misdemeanor to drive off without paying for gasoline and will result in a fine and/or driver's license suspension.³⁹ In addition, habitual offenders run the risk of being incarcerated.⁴⁰ Even with such laws in place, however, a driver must first be found guilty of intentionally leaving the store without paying for the gasoline. To prove this requires a large investment in security cameras and equipment.⁴¹

In fact, few gasoline theft cases go to court. Most retailers are not interested in pursuing criminal prosecution because of the time, effort, and cost required. They prefer that police contact the vehicle owner to encourage payment. If this is unsuccessful, store managers can seek a settlement in a civil proceeding, which does not require police involvement. In reality, police agencies have to prioritize the deployment of their limited resources, and gas drive-offs are among the first offenses to be removed from the list of priorities in favor of addressing more serious crimes.⁴²

In framing advice, you must think carefully about the nature of the risk, which varies greatly with the layout and practices of the retail outlet. These factors determine the nature of the remedies. In all cases, you must appreciate stores' need to make a profit. This determines selling practices and how much money is available for preventing shoplifting. Even when retailers can afford more security, they are likely to resist this expenditure. In making your case, you may need to do the following:

- Help to calculate the likely cost of measures, such as installing CCTV or hiring security guards
- Convince owners/managers that they can recoup the cost of increased security by reducing losses associated with gas drive-offs
- Enlist the support of the chamber of commerce or other business organizations in persuading owners to improve security
- Dissuade owners/managers from relying on simplistic solutions, such as warnings about the consequences of gas theft
- Brief the local media on the problem and the proposed solutions

Effective prevention depends on well-rounded strategies tailored to the nature of the site. These can be grouped under two main headings: (1) increasing the *risks* of gas drive-offs by improving surveillance, and (2) increasing the *difficulties* of gas drive-offs through use of technology and other means. Increasing the risks of crime and increasing its difficulties are well-validated components of Situational Crime Prevention.⁴³



Specific Responses to Reduce Gas Drive-Offs

Increasing the Risks of Gasoline Drive-Offs by Improving Surveillance

Many ways exist to improve surveillance of the pumps and gas service area. Informal or natural surveillance can be improved to allow attendants to monitor customers more closely. Formal surveillance can be provided by security companies, which may offer trained personnel as store clerks or security guards. Mechanical surveillance can be provided through the use of closed circuit television (CCTV) cameras and other electronic devices.

- 1. Increasing staff levels at peak times.** More clerks might be needed during peak hours so they can adequately monitor the pumps. Fuel theft often occurs at the busiest times. Thieves may wait until their vehicle is hidden by a truck or position their vehicle in a way that hides the license plate.⁴⁴ Gas stations with more visible staff will have fewer incidents, since thieves want to remain anonymous.⁴⁵
- 2. Using an intercom to greet customers.** An intercom is one of the most effective safety and security devices and is a low-tech means of removing anonymity.⁴⁶ When customers are greeted through the intercom they know they have been seen, and a dialogue between the employee and the customer can start, even after the opening words as simple as: “Hi, how are you today?” During peak sales periods and single-staffed shifts, an intercom is often the only method of interacting with customers before they come into the store to pay for their gas.⁴⁷
- 3. Providing employees with professional training.** Companies should train their employees in the fine art of customer service as well as in noticing and properly reporting gasoline theft.⁴⁸ Local police might also hold training for companies in strategies to prevent gas theft. The South Australia Police State Crime Prevention Branch has developed the ALERT strategy (Awareness, Line of sight, Eye contact, Registration, Telephone) to train station staff in recognizing and reporting gasoline drive-offs. ALERT underscores the important role of store clerks in preventing gasoline theft.⁴⁹ Other ways to increase surveillance are: (1) to subtract, or threaten to subtract the cost of the stolen gasoline from staff’s pay on the assumption that the drive-off reports are a camouflage for embezzlement; (2) to pay staff small bonuses for detecting and reporting drive-offs.



A well-lit pump area may help reduce the risk of gas drive-offs.

4. **Ensuring that the pump area is well-lit.**[†] Proper lighting makes the site unattractive for thieves and makes customers feel safer. Metal halide light units are recommended; these provide better color rendition than other types of lighting and are compatible with CCTV systems.⁵⁰ Exterior lighting should be protected with weather- and vandal-resistant coverings and have a light source that is directed downwards to minimize glare and intrusiveness.⁵¹ Switches for external lights should be located in a secure area within the store's office.⁵²
5. **Making it easier for clerks to see the pumps.** Posters and advertisements should not be placed on the store windows, to avoid obstructing the clerks' view of the pumps. Shrubs and hedges should not be higher than 3 feet, and all trees should be trimmed to a maximum height of 6 feet to help maintain a clear view around the site.⁵³ This helps employees to note details of vehicles involved in drive-offs (make and model, color, marks on the vehicle—e.g., scratch on door, bumper dent), and the direction from which the vehicle arrived and departed.⁵⁴ Pumps furthest away from the clerk's view might be “coned off” at times of minimum use, especially after dark.

[†] For further information about enhanced lighting, see Response Guide No. 8, *Improving Street Lighting to Reduce Crime in Residential Areas*.



6. **Employing qualified security personnel.** Security personnel can undertake surveillance and cooperate with police in enforcing the law. Security staff can be effective in deterring incidents, especially if they are on staff when crime analysis data show an increased trend of gas thefts in certain locations and at certain times.
7. **Using closed circuit television (CCTV) cameras.** Video surveillance has generally been found to more effectively deter crime in smaller, more private settings, rather than in city centers or public streets.[†] In addition, when a crime has been committed, CCTV systems on the premises can provide police with vital clues that lead to an arrest. However, the resulting images are often of low quality and therefore of limited use to police. Simple steps can be taken to improve the effectiveness of CCTV systems including the following:
 - Position cameras at the gasoline pumps
 - Post conspicuous signs indicating the premises are monitored by CCTV
 - Train all staff on procedures to follow when a crime occurs and how to act when police expect to see the surveillance shots
 - Adjust lights to aid CCTV and leave them on at night
 - Move from analog to digital audio/video recording
 - Consider networking with police
 - Incorporate license plate recognition (LPR) software that enables computer systems to automatically read vehicle license tags from digital footage[‡]

Even so, surveillance cameras are not always able to capture in detail a license tag because of its small size and varied placement on vehicles. Even with an individual camera devoted to each fueling point (somewhat expensive even today), it would be difficult to catch every tag.

[†] For further information about CCTV, see Response Guide No. 4, *Video Surveillance of Public Places*.

[‡] The effectiveness of license plate recognition can be compromised when thieves stand in front of their (real) plates to obscure the numbers or use stolen license tags on their cars to thwart identification by watching clerks or video cameras (Adams 2008). To deter the use of stolen tags, police recommend that motorists replace the screws holding the plate in place with 'clutch-head' screws which cannot be easily undone (*Petrol Plaza News* 2009a). The South Australia Police force has promoted the 'Plate Safe' program (South Australia Police 2009).



8. **Deploying interactive video monitoring (IVM).** IVM is one of the newest security measures available to gasoline stations. It enables a control-room operator to monitor hundreds of cameras or a 24-hour central station to monitor thousands of sites in real-time.⁵⁵ There are three main advantages to this new technology:
 - IVM cameras can be accessed online via any web-enabled device. Managers can view the company's security cameras in real-time from a home computer, a personal digital assistant, or a cell phone.
 - Two-way communications capabilities enable owners/managers to take action rather than passively sit back and watch events unfold.
 - IVM technology virtually eliminates law enforcement fees for responding to false alarms.⁵⁶
9. **Using scan-data analysis.** Some retail chains and some individual stores now make use of proprietary programs that analyze a store's scan data to reduce the incidence of gasoline drive-offs. Many of these programs are web-based and are capable of gathering and recording details of every transaction at the pumps. They can provide data about the time of day and the specific pumps from which drive-offs occur. On the basis of scan-data analyses conducted by in-house staff or consultants, the company's district managers and supervisors can help individual stores determine how to tackle any apparent problems. Scan-data analysis is expensive, but it is a far more way accurate way to record drive-offs than relying on employee reporting. One retail chain, Flash Foods, successfully used scan-data analysis to reduce gas drive-offs by identifying the particular pumps at individual stores that were most at risk and the times that they were at risk. When the chain required pre-payment on those specific pumps at the high-risk times, gas drive-offs reportedly dropped by 50 percent in one year.⁵⁷

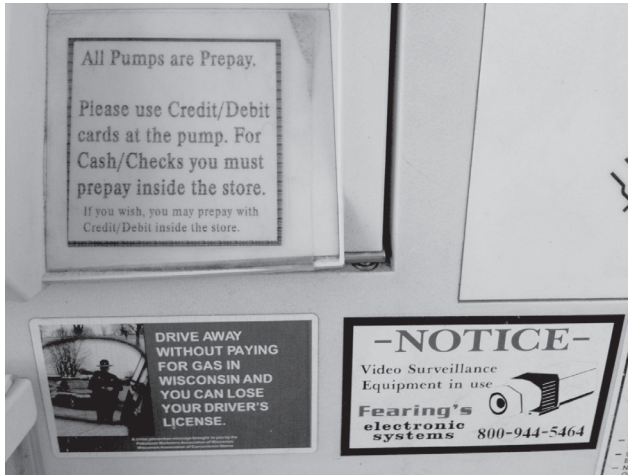
Increasing the Difficulty of Gasoline Drive-Offs

It was once easy to carry out gas drive-offs, but it is now much more difficult, because many service stations have pre-pay policies in place and use advanced technology that assists in identifying and convicting offenders.

10. **Introducing a post-pay system.** Many convenience store/gas station chains have adopted PumpStart, a pump-activation card that authorizes cash-paying customers to pump before they pay inside the store, thereby cutting minutes off the process of pumping and paying for gas. In addition, store owners feel that these customers are more likely to purchase food and other items if they come in to pay after they have pumped instead of before. These cards thus enhance the store's profitability.⁵⁸ PumpStart is not a credit card; in fact, it is not a payment card at all, but a method



Michael Scott. Used with permission.



A mandatory pre-pay system eliminates the need for the use of surveillance cameras or penalty warnings such as the ones pictured above.

of checking that the store has the customer's driver's license on file.⁵⁹ Customers can sign up for the PumpStart card by showing a valid driver's license to the clerk. The store simply records the customer's license number and expiration date and issues the free PumpStart card. If the customer uses the card to start the pump and then drives off without paying, the store can immediately deactivate the card and turn the driver's license number over to police.⁶⁰ This system has reportedly saved one chain \$6 to \$7 million in losses every year and reduced gas thefts by 95 percent.⁶¹

- 11. Imposing mandatory pre-pay.** The simplest way to prevent people from driving off without paying is to require them to pay before pumping.⁶² When fuel thefts reach high rates, local officials can intervene by enacting an ordinance for mandatory pre-pay at the pump.⁶³ Store owners may resist such ordinances, because pre-pay makes buying gas less convenient. Pre-pay customers might have to go inside the store to pay and they might have to go back inside to get money back if they do not have room in their tanks for all the gasoline they have purchased. Those who pay cash before pumping are less likely to purchase items inside the store, and having been inside once to pre-pay, they find it inconvenient to go back into the store to buy lottery tickets, beverages, food, or newspapers.⁶⁴ Pre-payment can also hurt sales, because customers may prefer to go to another nearby retailer that does not require pre-pay.⁶⁵ Consequently, retailers may require pre-pay only for certain pumps or during certain hours of business rather than require it all the time.



12. Installing pay-at-the-pump equipment. A reliable alternative to both pre-pay and post-pay policies is a 100 percent pay-at-the-pump system with cash acceptors in the gas pumps themselves. It is perhaps the most effective way to reduce gas drive-offs.⁶⁶ The system requires customers to feed cash, a credit card, or a debit card into the pump before it will activate. The pump dispenses gas until the designated total is reached or the customer stops pumping. If change is due, the customer obtains it by bringing the receipt into the store.⁶⁷ The system was designed to increase gas sales by offering more convenience to those customers who simply want to get gas and go, but it probably results in fewer in-store sales. However, it has the benefit of reducing stress on clerks, who no longer must watch the pumps while serving customers in the store.

13. Controlling access to fuel dispensers. As fuel dispenser and payment technology have advanced, offenders have refined their methods of stealing fuel. In response, some companies have adopted new pump security technologies that are designed to do the following:

- *Protect access to electronics.* Fuel dispensers can be equipped with a strong door that can only be opened by unfastening multiple tamper-resistant screws. This makes it easy to prevent an unauthorized person trying to open the door.
- *Program security.* Fuel dispensers can be provided with a password-controlled remote, which is typically stored away from the dispenser and available only to authorized technicians or site personnel.
- *Limit offline fueling access.* Fuel dispensers can add another layer of security with a printer circuit board (PCB) device that connects two pins on the circuit board to enable stand-alone or offline fueling. Thieves cannot dispense fuel without the PCB device, which makes it difficult to access the fuel dispenser components unobserved or to change the price-per-unit setting.⁶⁸

While principally directed to preventing new forms of gasoline theft, this technology also makes it more difficult for gas drive-offs to be accomplished.

14. Reducing escape points from the site. This can be done by minimizing the number of entrances and exits and reducing their width. In addition, perimeter fencing will reduce escape and entry points,⁶⁹ particularly when fences are made of expanded metal, welded mesh, or paladin (not palisade or chain link fencing), and are at least 6 feet high. A Quickthorn or Hawthorn hedging planted adjacent to the fence will increase security, but shrubs, hedges, and bushes should be trimmed where they inhibit surveillance.⁷⁰ Bollards and other obstacles can be used to ensure that drivers cannot “escape” by driving over sidewalks, grass verges, and the like.



Responses with Limited Effectiveness

- 15. Discouraging gas theft through warnings.** Warning signs placed on the pump stating: “Our car is faster than your car,” meaning that police cars generally can move faster than other vehicles, in theory increases the risk of apprehension.⁷¹ In 2008 all gas retailing stations in one West Yorkshire, England, district participated in a “Name, Shame and Claim” campaign in which posters invited people to report gas thieves. It turned out that many people were reluctant to call the police, and the posters did not achieve the intended results.⁷² Extensive research has shown that publicity campaigns of this kind are of limited effectiveness.[†]

[†] For further information, see Response Guide No. 5, *Crime Prevention Publicity Campaigns*.



Appendix: Summary of Responses to Gasoline Drive-Offs

The table below summarizes the responses to gas drive-offs, the mechanisms by which they are intended to work, the conditions under which they ought to work best, and some factors you should consider before implementing a particular response. It is critical that you tailor responses to local circumstances and that you can justify each response based on reliable analysis. In most cases, an effective strategy will involve taking several different measures. Law enforcement responses alone are seldom effective in reducing or solving the problem.

Response No.	Page No.	Response	How It Works	Works Best If...	Considerations
<i>Increasing the Risks of Gasoline Drive-Offs by Improving Surveillance</i>					
1	21	Increasing staff levels at peak times	Increases employee surveillance of the pumps	...the pump island is visible, so store employees can easily watch customers in peak theft hours	Expensive and may only be justified in large facilities
2	21	Using an intercom to greet customers	Reduces felt anonymity and deters gasoline thefts	...the employee and customers establish a dialogue by intercom or in person	Inexpensive; especially effective in peak periods and on single-staffed shifts
3	21	Providing employees with professional training	Employees are more likely to notice suspects and take preventive action	...training sessions are organized together with police; an 800 emergency number is provided to staff	Training is costly, but can improve relationships with local police
4	22	Ensuring that the pump area is well-lit	Improves natural surveillance, dissuades would-be gas thieves, and reduces customer fear	...lighting is protected with weather and vandal-resistant coverings; light sources minimize glare and intrusiveness	Effective lighting involves relatively high running costs, but all convenience stores should be well-lit



Response No.	Page No.	Response	How It Works	Works Best If...	Considerations
5	22	Making it easier for clerks to see the pumps	Increases employee surveillance of the pump island	...all store window coverings are removed and view of the pumps is not restricted by shrubs, trees, etc.	Store register need not be located in the center of the store as long as clerks have clear view of pumps
6	23	Employing qualified security personnel	Offenders are more likely to be apprehended	...security officers are positioned at strategic points in around the site at high-risk times	Very expensive; might only be justified in dealing with sharp rises in incidents
7	23	Using closed circuit television (CCTV) cameras	Increases the probability of arrest as well as serving as a deterrent	...the installed system is adequate to meeting law enforcement needs for identification and prosecution of offenders and is combined with license plate recognition	CCTV requires trained staff to monitor and maintain the cameras
8	24	Deploying interactive video monitoring (IVM)	Enables a remote control room operator to monitor hundreds of cameras at many different sites; allows managers to view cameras when not on-site	...primarily used to monitor and verify alarm activation signals and dispatch responders	Very expensive to install and to monitor effectively, but allows highly versatile monitoring



Response No.	Page No.	Response	How It Works	Works Best If...	Considerations
9	24	Using scan-data analysis	Proprietary programs gather information about all transactions at the pumps, including gas drive-offs: permits identification of high-risk pumps and high-risk times	...qualified analysts are employed to analyze the data and preventive action is taken on the basis of any patterns in drive-offs that are revealed	The programs are expensive for individual stores to use and might be of greatest value for retail chains
<i>Increasing the Difficulty of Gasoline Drive-Offs</i>					
10	24	Introducing a post-pay system	Customers register their names and addresses in advance and are issued a card: eliminates the inconvenience of pre-pay	...customers drive off without paying, the card is immediately deactivated and their names and address are given to the police	This is primarily a method of identification; it makes it easier to prosecute offenders; ensures that gas customers enter the store
11	25	Imposing mandatory pre-pay	Significantly reduces the opportunity for gas drive-offs and makes it easier to prosecute offenders	...pre-pay is instituted 24/7, but less impact on sales if used only for some pumps at certain times	Fewer customers may make purchases in-store; some customers might switch to nearby retailers without pre-pay
12	26	Installing pay-at-the-pump equipment	Prevents fuel thefts as fuel is not dispensed until cash, debit, or credit cards are inserted into the pump	...the store does not depend upon in-store sales for its profits; customers become comfortable using pumps like vending machines	Convenient for customers who simply want to get gas; reduces stress on clerks who no longer must watch the pumps while serving in-store customers



Response No.	Page No.	Response	How It Works	Works Best If...	Considerations
13	26	Controlling access to fuel dispensers	Prevents would- be offenders from filling up	...offenders are prevented from gaining access to the internal components of the fuel dispensers	An innovative technology that protects access to pump electronics and limits offline fueling access
14	26	Reducing escape points from the site	Drivers can be prevented from easily “escaping” by minimizing the entrances/exits, reducing their width, and using perimeter fencing and bollards	...fences are expanded metal, welded mesh or paladin; minimum height of 6 ft.; Quickthorn or Hawthorn hedging are planted next to the fence and kept trimmed to increase security	A one-time expense, but an essential component of a well-managed site
<i>Responses with Limited Effectiveness</i>					
15	27	Discouraging gasoline theft through warnings	Placing a sign on the pump which includes a simple message that gives possible offenders second thoughts	...placed directly by the pumps	Most research suggests that publicity campaigns of this kind are rarely effective



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