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Problem-Specific Guides Series
No. 58



Theft of Scrap Metal

Brandon R. Kooi

www.cops.usdoj.gov



Center for
Problem-Oriented Policing

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The Internet references cited in this publication were valid as of January 2010. Given that URLs and web sites are in constant flux, neither the author(s) nor the COPS Office can vouch for their current validity.

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About the Problem-Specific Guide 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, and
- information about problem-oriented policing conferences and award programs.



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Debra Cohen, PhD 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. Suzanne Fregly edited this guide.



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The Problem of Scrap Metal Theft

What This Guide Does and Does Not Cover

This guide begins by describing the problem of scrap metal theft and reviewing factors that increase its risk. It then identifies a series of questions to help you analyze your local scrap-metal theft problem. Finally, it reviews responses to the problem, and what is known about these responses from evaluative research and police practice.

While stolen precious metals include gold and silver—commonly targeted in residential burglaries—for the purposes of this guide, scrap metal theft includes mainly stolen copper, aluminum, brass, zinc, nickel, platinum, and bronze. These metals have value only when sold to a scrap metal dealer who arranges for the metal to be melted and reshaped for other uses. By contrast, gold and silver commonly have intrinsic value, either to the thief or to someone else who values the metal in its original shape.

Scrap metal theft is but one of the larger set of theft and sale of stolen property problems. This guide is limited to addressing the particular harms scrap metal theft causes. Related problems not directly addressed in this guide, each of which requires separate analysis, include:

- bicycle theft,
- burglary,
- shoplifting,
- stolen goods markets,
- theft from construction sites,
- theft from cafés and bars,
- theft of and from vehicles, and
- theft of outdoor household items.

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.



General Description of the Problem

Throughout the industrialized world, stealing valuable metal has become a serious concern for the police, businesses, public utilities, railroad companies, and the community at large. Collaborative efforts to combat metal theft have occurred for several decades.¹ However, reports of dramatic increases in scrap metal theft are occurring throughout the world. While we cannot be sure about the exact amount of metal stolen in the United States, an examination of media reports in recent years showed increased scrap metal theft throughout the country, with some areas showing double and triple the amount of reported theft.² The following news accounts exemplify the growth of the scrap metal theft problem:

- The *Tucson Weekly* (November 2006) reported a one-year 150 percent increase in scrap metal theft.³
- The U.K.'s *Guardian* reported a fivefold rise in metal track theft, causing numerous delays and rising costs throughout the British railway network. Two months prior, the *Guardian* reported numerous Japanese playground slides' being stolen.⁴
- The *Associated Press* reported the beer keg industry is losing \$50 million a year as customers are forfeiting their cash deposits and taking their empty kegs to scrap dealers instead, or thieves are stealing unsecured empty kegs around taverns and restaurants.⁵
- *Reuters* reports Russian police detained a 45-year-old city employee for stealing a bridge east of Moscow. The employee ripped the bridge down with his work truck, chopped up the metal, and sold it to a scrap yard.⁶
- The *Dallas Morning News* reported a 227 percent increase in scrap metal theft from 2005 to 2007.⁷
- The *Associated Press* reported that thieves were stealing vases bolted to West Virginia cemetery headstones and bronze markers on veterans' graves. In addition, the article reported that thieves have stolen a half million dollars' worth of brass ornaments from Chicago cemeteries.⁸



- The *Boston Globe* reported that fire departments across the country were reporting brass nuts' missing from fire hydrants, raising concerns that hydrants wouldn't work when needed.⁹
- *Consumers Energy* reported their Michigan utility outlets had suffered a 104 percent increase in copper theft during the first half of 2008 compared with the same period in 2007, creating serious infrastructure problems. The article pointed out these offenses may fall under federal terrorism legislation.¹⁰
- The *Associated Press* reported multiple police raids on six scrap yards owned by OmniSource, the largest scrap dealer in Indianapolis, after a year-long investigation. The company also employed 51 Indianapolis Metropolitan Police officers.¹¹

Despite these dramatic headlines, a small percentage of scrap metal theft cases involve large amounts of metal. Instead, most involve small amounts taken in each incident, often with repeat victims. Utility companies are especially susceptible for repeat targeting, and when victimized pose critical threats to the country's infrastructure.

Harms Caused by Scrap Metal Theft

Economic consequences for scrap metal theft within utilities can be immense. According to perimeter security companies, the cost of repairing damaged transformers or substations can run anywhere from \$500,000 to \$11 million.¹² Costs include:

- replacing any metal components stolen,
- repairing equipment damaged during the theft,
- repairing operating systems damaged because of stolen wires,
- reimbursing customers inconvenienced or facing their own economic losses,
- covering revenue lost to the utility, and
- covering expenditure increases needed to cover loss and/or adding improved security surrounding the utility company.



Damaged power equipment resulting from scrap metal theft also poses significant risk to utility repair teams as well as offenders. Petty-metal thieves who are drug addicts do not assess risk effectively when deciding to steal metal/copper from high-voltage substations, transformers, or electric high wires, and many have been electrocuted while trying to cut live wires from abandoned buildings and electric substations.¹³

Factors Contributing to Scrap Metal Theft

No single factor accounts for the rise in scrap metal theft. Instead, a combination of high demand for metal on the international market, increased opportunities for offenders to target places and metal types not previously susceptible to theft, and weak regulation of the metals resale market have coincided to increase the scrap metal theft problem.

International Industrialization and the Metals Market

In early 2002, copper's price hit record lows, falling to 65 cents a pound on the London Metal Exchange. This changed as other Asian countries began to rapidly industrialize, with China receiving the most attention because of its 20 percent global copper consumption and Olympic preparation. Scrap materials became the second largest American export to China behind electronics.¹⁴ By mid-2006 copper was worth \$4 a pound. Demand in Europe and the United States increased in 2003, driven by new construction and impending wars in Iraq and Afghanistan. Since 2003, the four basic nonferrous or base metals—aluminum, copper, nickel and zinc—have been in high demand, and costs as well as demand have more or less continued to increase.

The rise in scrap metal theft is driven by offenders' recognition that ample metal supplies remain unguarded, and that the price of return remains historically high based on heavy international demand. The metal market conditions made unsecured metal susceptible to increased theft, while causing a boom in scrap metal exports that increased the scrap metal theft problem. According to the U.S.



International Trade Commission, the United States exported 6 million tons of scrap metal to developing nations in 2000, and over 18 million tons in 2007.¹⁵ According to the American Scrap Coalition,[§] scrap metal reached record levels of \$600 a ton in 2008.¹⁶ The international demand has exceeded the supply since 2003, causing new financial opportunities for scrap metal thieves. However, the end of 2008 saw world market metal prices drop significantly, with the Chinese Olympics a distant memory and subsequent evidence that scrap metal theft has decreased. While international price drops may have resulted in decreased theft,¹⁷ some people claim that changed state legislation with increased reporting of purchases has also impacted theft. However, not all states have instituted legislation aimed at scrap dealers, and federal legislation is still pending. Moreover, the United States continues to export large quantities of scrap metal internationally, and demand continues.

§The American Scrap Coalition is a Washington, D.C.-based nonprofit corporation that replaced the Emergency Steel Scrap Coalition in 2004. Founding members include the Steel Manufacturers Association, the American Foundry Society, and the National Precast Concrete Association. In all, more than 1,500 companies are members of these three associations.

§§Some foreclosed-property owners have resorted to posting signs on the property indicating there is no valuable metal piping in it, to at least try to discourage thieves from breaking in to find out.

Other countries have put their scrap metal dealers out of business by refusing to allow them to export their product. For example, some African countries (e.g., Uganda, Tanzania, Kenya) suspended the export of scrap metal as a means to combat electrical and water equipment thefts that were causing critical infrastructure problems.¹⁸ A group of U.S. steel scrap industries created the American Scrap Coalition in response to global scrap-metal trade barriers. While the price of metal rose dramatically, many countries restricted their exports, but U.S. exports continued at record levels. The scrap metal supply did not keep pace with the international demand, causing a crisis of scrap metal availability and increased pay from scrap metal dealers.

Property Foreclosures

The housing market crash began during the time metal prices remained high. Consequently, thieves found the copper piping coming from plumbing, telephone lines, and heating/air-conditioning systems in several foreclosed properties to be worth more than the property itself, creating an environment ripe for increased theft and gutting of properties for precious metals.^{§§}



Foreclosed homes as well as new construction sites become inviting targets to metal thieves by giving out environmental cues that the property is unprotected. Banks have denied loans to buyers of foreclosed properties if they know metal theft has occurred, since buyers are more likely to default with such properties, creating additional problems within the slumping housing market.¹⁹

The Problem Analysis Triangle

The problem analysis triangle is a useful framework for understanding scrap metal theft.

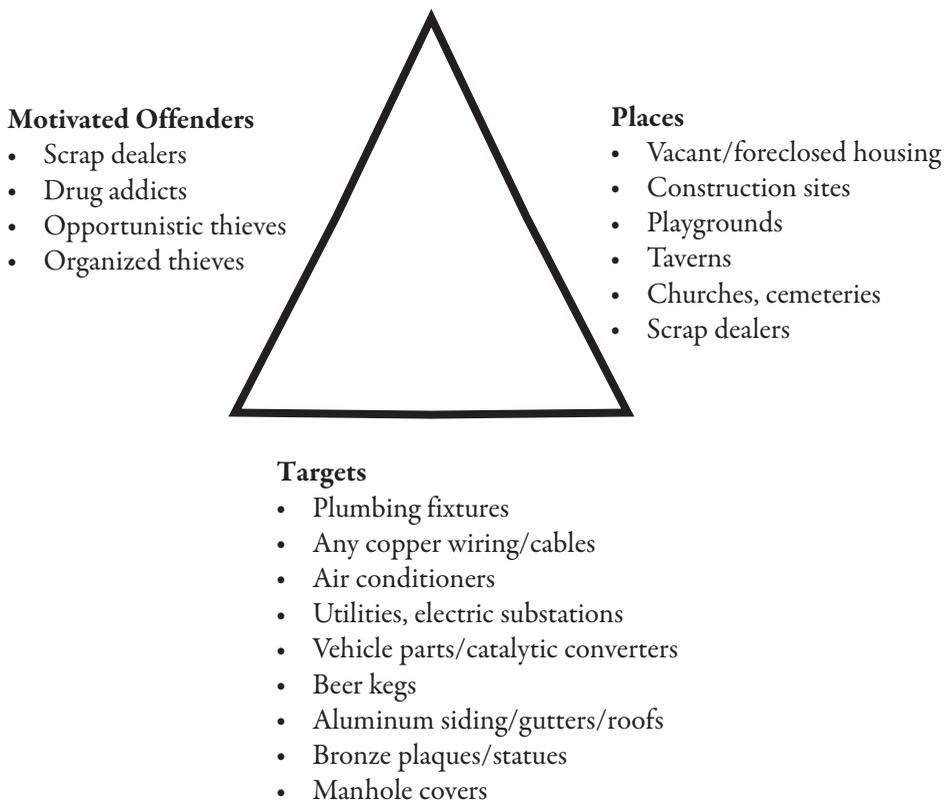


Figure 1. A problem analysis triangle depicting general and specific causes of increased scrap metal theft.



Motivated Offenders

Scrap metal buyers provide the necessary link for creating profit from scrap metal theft. The scrap metal theft problem is driven entirely by the ability to sell stolen goods to recyclers, and often these recyclers facilitate crime. While there is some recognition that thieves distribute other stolen goods to friends/family,²⁰ they are far more likely to sell stolen metal for cash at a scrap metal yard where they may or may not know the buyer. Communities struggling with metal theft may find it difficult to convince the public that the problem is serious. According to national crime survey data, receiving and selling stolen goods tends to be ranked as one of the least serious crimes,²¹ where buyers do not recognize the crime as much as “getting a good deal.”²² Communities confronting scrap metal theft problems should consider the different offenders working with scrap metal dealers for profit, and determine how these transactions can become more costly for both parties.

Scrap metal buyers may determine the types of metal needed, as well as point out susceptible targets.²³ Other dealers may be more passive, but nonetheless provide an outlet for stolen metal. When legitimate scrap metal dealers refuse to buy suspected stolen metal, thieves are likely to respond by seeking out a gray-market dealer who will pay considerably less cash. Larger scrap dealers often know and trust gray-market dealers, who profit after reselling the stolen metal that the larger dealers had originally turned down.²⁴

Thieves and sellers of scrap metal succeed when they find vulnerable targets at particular places during particular times when capable guardianship is lacking. These offenders may not necessarily be seeking out metal, but instead happen upon unsecured sites where valuable metal is left out in the open. Those who know local scrap metal dealers who will not question where the metal came from will foresee the opportunity to sell the unsecured metal, if it is easy to do so.



Drug addicts, particularly crystal methamphetamine users, appear to be linked with specific types of scrap metal theft. To support their drug habits, they require repeated and quick access to small amounts of cash, which they can easily obtain by selling small amounts of stolen metal to scrap metal dealers.²⁵ However, there is little doubt that other types of drug addicts also steal scrap metal to support their habits.

Organized thieves are more likely to steal large hauls of copper wire, while **opportunistic petty thieves** are more likely responsible for the more hazardous thefts occurring from electric substations and utility poles. However, you should note that opportunistic offenders with knowledge of how to process stolen metal into cash with local scrap metal dealers are more likely to target large quantities of unsecured yet valuable metal. These opportunistic offenders are likely to be contractors, construction workers, scrap metal dealer employees, or juvenile offenders who randomly observe unsecured construction sites or vacant properties and sell valuable metals.

Places

According to a 2007 report, copper theft is highest in Hawaii, Arizona, California and Oregon, and is increasing in the rural Midwest and South.²⁶ Urban and warmer locations appear particularly susceptible to numerous thefts of small amounts of scrap metal by transient populations who often do not own a car. Communities without nearby scrap metal dealers are probably more secure from scrap metal theft than those with a ready supply of them. Scrap metal theft affects every state, and particular places within local communities are especially susceptible to it, such as the following:

Vacant and foreclosed properties are especially susceptible to theft because they often lack effective guardianship and are easily identifiable.



Construction sites become susceptible to theft when contractors leave metal such as large spools of copper wire unsecured. While wire theft can occur almost anywhere, new construction sites and vacant housing are more-easily discernable targets.[§]

Playgrounds have been targeted by metal thieves for their metal slides and underground wiring that is difficult to secure.

Taverns that leave their empty beer kegs unsecured outside are theft targets and lose their deposits.

Churches/cemeteries have been targets of metal thieves because of the value that metal roofs or bronze statues and plaques have to scrap dealers.

Scrap/salvage metal dealers often become targets of metal thieves if their inventory is left unsecured. Scrap metal dealers are in a peculiar position of both contributing as *offenders* and being *victims* of scrap metal theft. Indeed, it becomes a challenge for the police and the wider community to determine which role each scrap metal dealer is playing, and it is likely that scrap metal dealers may be taking on both roles. Regardless, unregulated scrap metal dealers are likely to contribute to outlying community crime.

[§]See Problem-Specific Guide No. 43, *Burglary at Single-Family House Construction Sites*, for further information.



In 1999, the Lancashire Constabulary, Kirkham Section, England, was named a finalist for the Tilley Award related to their efforts that shut down a scrap metal dealer. An analysis of the Nook scrap yard at Staining found the recycler frequently accepted stolen vehicles, had numerous confrontations with customers, frequently allowed entry in the evening hours past stated closing times, and produced numerous noise complaints. Police stopped and arrested a number of offenders throughout surrounding neighborhoods and at the scrap yard. These offenders did not live in the community and were in the area to sell stolen metal. An officer working on the Nook scrap yard problem looked into environmental issues related to the recycler and partnered with area residents to write numerous complaint letters detailing the late-night noise and presence of suspected metal thieves, and they sent the letters to “anyone they thought might be able to help.” Unsafely stacked cars caused environmental damage to a surrounding marsh, resulting in the scrap yard’s being shut down. A follow-up assessment showed a 45 percent reduction in all crime throughout the surrounding community, and an 85 percent reduction in all crime at the scrap yard. The crime reduction occurred once the scrap metal yard was properly managed and no longer served as a crime facilitator.



Targets

Susceptible targets for scrap metal theft can include any unsecured metal. Certain types of metal prices will fluctuate, and dealers may specify what types of metal they are buying, thereby notifying sellers of what is in current demand. Some specific targets of scrap metal theft include the following:

Plumbing fixtures, especially in property that does not have capable guardianship, frequently get ripped out of bathrooms and kitchens and sold for scrap.

Copper wires/cables of all kinds, especially uninsulated wires/cables, are susceptible to theft. Thieves commonly target the copper wiring in electric transformers at utility substations.²⁷

Air conditioners are targeted for the copper tubing in the coils.[§]

Vehicle parts, and especially catalytic converters found in most vehicle undercarriages, are worth anywhere from \$50 to \$200 apiece from local scrap metal dealers due to the amounts of platinum, palladium, and radium^{§§} present in converters, in particular. Catalytic converters have been installed on vehicle undercarriages since 1975 and convert harmful pollutants into less-harmful emissions before they leave the vehicle's exhaust system. The National Insurance Crime Bureau reported a dramatic increase in insurance claims for catalytic converters during the first six months of 2008, greatly outnumbering the previous five-year total.²⁸ Replacing a catalytic converter can run anywhere from \$200 to over \$1,000. SUVs and jeeps provide the best opportunity for catalytic converter theft because the ground clearance is so high, and often the converter is held on by four bolts, easily detached with a socket wrench.

Beer kegs have become targets because many scrap metal dealers value them at \$15 to \$30 apiece, often more than the given liquor store deposit. Estimates in 2007 reported a loss of \$50 million to the beer keg industry due to theft.²⁹

[§]The Puyallup (Washington) Police Department reported that thieves have been known to mark air-conditioning units with the word "scrap" and dismantle them to obtain the copper coils and cooling cores. If anyone questions them about their activity, the thieves point to the marking to confirm that the equipment is to be scrapped. Thieves also use the anhydrous ammonia inside the unit to manufacture methamphetamine.

^{§§}Like other scrap metal theft, the rise in theft incidents can be traced to the price of platinum. In 2002 platinum traded for about \$608 per troy ounce. (A troy ounce is a metal measurement slightly larger than a common ounce.) In 2008, platinum sold for \$2,083 per troy ounce on the New York Mercantile Exchange.



§The Philadelphia (Pennsylvania) Public Works Department is chaining or internally locking manhole covers after thieves stole more than 2,500 in one year, up from an annual average of 100 (Bauers, 2008; Urbina, 2008). Costs are estimated at over \$300,000 to replace stolen manhole covers and sewer grates. Other large cities similarly report dramatic increases in stolen manhole covers and sewer grates.

Aluminum siding/gutters/roofs are targeted because they have copper flashing.

Bronze plaques and statues in cemeteries and museums are targets of metal thieves because they are nearly impossible to adequately secure.

Manhole cover and sewer grate theft has risen sharply throughout the industrialized world. Consequently, cities are finding innovative ways to secure the covers.§ Missing covers are not only costly, but also the thefts pose serious risks of injury and even death for motorists and pedestrians.



Understanding Your Local Problem

The information provided above is a generalized description of scrap metal theft. You must combine the basic facts with a more specific understanding of your local problem. Carefully analyzing the local problem will help you design a more effective response strategy and gain partners to determine the best solution.

Scrap metal theft problems became prominent in 2005, yet little systematic research has been done to determine generalizable causes. Tackling the problem of scrap metal theft requires understanding the organizational arrangements between sellers and buyers, in addition to understanding the features of specific theft locations and knowing about individual offenders. It is important to understand how local demand contributes to scrap metal theft and how it influences offenders' behavior.

Communities facing scrap metal theft problems might seek help from university researchers to analyze data about the problem. Indianapolis police partnered with the University of Indianapolis Community Research Center to collect data on scrap metal thefts. In this collaborative effort, known as the Indianapolis Metal Theft Project,³⁰ researchers gathered and analyzed a wide variety of data related to the costs and types of scrap metal theft so that police could apply improved strategies to the problem. In addition to listing cities with the most claims (Cleveland, Ohio; Detroit, Michigan; Chicago, Illinois) and most claims per population (Cleveland; Flint, Michigan; Birmingham, Alabama) the study also found that the greater the number of scrap yards in a city, the greater the number of metal thefts.³¹ However, the researchers noted several caveats to their findings and emphasized the value of collaborative efforts among various stakeholders.



§In the summer of 2008, AT&T worked with the San Diego County (California) Sheriff's Department, and the FBI, leading to a number of arrests of scrap metal dealers for buying stolen metal following a series of undercover operations.

Stakeholders

In addition to criminal justice agencies, you should consider the following groups for the contribution they can make in gathering information and formulating an adequate response to scrap metal theft:

- *Scrap metal dealers* can potentially maximize profits by paying reduced prices for stolen metal. With proper regulation, however, they can better maximize their profit and community reputation by avoiding the purchase of stolen metal and the consequent fines and confiscation of stolen merchandise. Scrap metal dealers also should have a good understanding of who is selling or trying to sell stolen metal, as well as the going market for particular metals. Moreover, scrap metal dealers should be familiar with local ordinances and/or state legislation that regulate how people buy and sell metal.
- *Regulatory agencies* engaged in environmental protection may play a role in ensuring scrap metal dealers are operating a responsible recycling business. Find out what agencies are involved with regulating your local metal recyclers, and how they may help to change business practices.
- *Trade associations* such as the Institute of Scrap Recycling Industries Inc. (ISRI) can offer a number of resources online under “metal theft” and have an interest in protecting scrap-dealing businesses. See www.isri.org.
- *Utility companies* have increasingly become proactive in response to copper theft by encouraging customers to report suspicious activity and working with police investigators.[§] Utility companies' security and risk management personnel are important advocates for addressing scrap metal theft problems.
- *Abandoned/vacant-property owners* have an interest in protecting their property from further devaluation, and the neighborhood has an interest in securing the property so it does not become a crime facilitator.



- *Metal product manufacturers* have an interest in making sure legitimate customers keep their purchased product. Beer manufacturers have an interest in customers' getting their keg deposits back. Manufacturers can prevent theft by coding their product in a way that makes it easily identifiable or allows police to find the rightful owner after the theft has occurred.
- *Property insurance companies* may be able to provide information on areas with the highest financial and quantity-of-metal loss. Since insurance companies need to pay out claims, they have a financial incentive to help determine the best responses for local scrap-metal theft problems.
- *Public works departments* suffer the loss when thieves steal a manhole cover or guardrail. Naturally, local property taxes in pending budgets absorb these costs. Nevertheless, these departments should become important allies with groups confronting local scrap-metal theft problems by determining how public-works items can be better secured and not stolen and sold to scrap metal dealers.



Asking the Right Questions

The following are some critical questions you should ask in analyzing your particular scrap-metal theft problem, 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.

Incidents

- How many scrap metal thefts have occurred in your community? How do you flag scrap metal theft data in your incident data reports? Most departments do not track “scrap metal theft” as a separate theft category, but they may need to do so to assess the problem’s severity.
- How many scrap metal thefts has your department recorded over the past year compared with the last few years? Do you have a systematic way to determine if your scrap metal theft problem is getting better or worse? Is there a way to determine where the greatest level of victimization is occurring, so you can allocate resources more efficiently?
- Is metal being stolen from abandoned and vacant properties, but not reported to police?
- Are there recent spikes in scrap metal theft? If so, what has caused those spikes?
- Who owns surrounding scrap yards, and has this ownership changed during the time of increased reported scrap-metal theft? Is a new scrap yard owner/manager influencing your scrap metal theft problem? Compare metal and/or copper thefts before and after a change in scrap yard owners.
- How do thieves steal the metal?
- How many and what type of injuries (such as electrocutions, falls, lacerations) have thieves incurred stealing metal?
- How much does scrap metal theft financially cost the community?



Targets/Locations/Times

- What types of metal are thieves stealing? Is copper the most sought-after precious metal, and if so, why?
- Where are scrap metal thefts occurring?
- When are scrap metal thefts occurring (time of day, day of week, month and season of year)?
- Do thieves repeatedly target certain businesses or locations?
- Which locations with high amounts of easily transportable metal have *not* been victimized, and how are these locations unique?
- Which are thieves targeting most: residential, commercial, or utility properties?
- Have thieves stolen from scrap metal yards?
- Are thieves targeting vacant buildings (e.g., for sale, foreclosed, abandoned) for scrap metal theft? You should be aware of vacant buildings in your community, and of how secure they are.

§Offenders will often reveal valuable information related to your local scrap-metal theft problem, such as which dealers are easy to sell to or which locations thieves are targeting, and you should thoroughly interview them to gain appropriate intelligence. For more information, see Problem-Solving Tools Guide No. 3, *Using Offender Interviews To Inform Police Problem-Solving*.

Offenders (Thieves and Sellers)[§]

- Who are the local metal thieves and sellers?
- What percentage of thieves and sellers are opportunistic, and what percentage are professional? What percentage are drug addicts?
- Where do thieves sell stolen metal, and at how many locations?
- At what other locations can thieves sell stolen metal, but don't? Why?
- How easy is it to sell stolen metal?
- How do thieves choose their targets?
- Are there any intermediate groups buying stolen metal from thieves and reselling it in bulk to dealers?



Offenders (Buyers)

- How many scrap metal dealers exist in your community?
- What types of metal products do they accept?
- Do they accept metal that they should reasonably suspect the seller does not lawfully own (e.g., railroad track, traffic signs, beer kegs, manhole covers, guardrails, metal with other owners' identifying marks, etc.)?
- How long have the scrap yards been in business?
- Are scrap metal dealerships independently owned, or part of a larger corporate chain?
- What do you know about scrap metal dealership owners and managers?
- Do scrap metal dealers require IDs or proof of ownership of metal before buying it?
- Do they keep copies of sellers' IDs?
- Do (or could) they take digital photos of sellers?
- How long do they save sellers' IDs?
- Do they immediately pay for the metal, or pay later? Often, delayed payments may deter addicts from stealing metal for quick cash.
- Are they required to report suspicious scrap metal sellers? Are there scrap dealers in your area who have never reported suspicious metal sales? Does your department have someone responsible for retrieving information on scrap-metal theft suspicion?
- How do scrap metal dealers process metal they have bought?
- How long do they hold the metal before moving it off their lots?
- What type of metal do they prefer, and why?
- What type of inventory controls do scrap yards maintain?
- What type of security exists throughout the scrap yards? Are there fencing, barbed wire, video surveillance, exterior lighting, motion sensors, locked vehicles and areas, and good inventory controls?



Current Responses to the Problem

- What local or state regulations apply to scrap metal transactions?
- How are scrap metal dealerships inspected, and how are regulations enforced?
- When someone reports a scrap metal theft, is there a way to inform surrounding scrap metal dealers to be on the lookout for specific property?
- What percentage of reported scrap metal theft cases do police solve?
- What penalties do judges impose on convicted metal thieves?

Measuring Your Effectiveness

Measurement allows you to determine how well your efforts have succeeded, and suggests how you might 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 them, to determine whether they have been effective. You should take all measures in both the target area and the surrounding area. For more-detailed guidance on measuring effectiveness, see the Problem-Solving Tools Guide titled *Assessing Responses to Problems: An Introductory Guide for Police Problem-Solvers*.

The following are potentially useful measures of the effectiveness of responses to scrap metal theft:

- reduced number of scrap metal thefts (reported and unreported),
- reduced financial loss from scrap metal theft,
- reduced cost to replace stolen metal,
- reduced number and/or severity of injuries resulting from scrap metal theft, and
- reduced number of repeat victims.



Responses to the Problem of Scrap Metal Theft

Analyzing your local problem should give you a better understanding of the factors contributing 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 the police can do: carefully consider whether others in your community share responsibility for the problem and can help the police better respond to it. In some cases, you may need to shift the responsibility of responding toward those who have the capacity to implement more-effective responses. (For more detailed information on shifting and sharing responsibility, see Response Guide No. 3, *Shifting and Sharing Responsibility for Public Safety Problems*).



§The British Metals Recycling Association has collaborated with the Association of Chief Police Officers and the British Transport Police to reduce scrap metal theft from its members and identify stolen metal showing up in scrap yards.

General Considerations for an Effective Response Strategy

Both local and international supply and demand strongly influence scrap metal theft, and you can broadly tie local scrap metal theft problems to international demand and higher prices resulting from limited supplies. Despite this broad connection between international demand and U.S. scrap metal supply, you can initiate effective local scrap theft response strategies through a market reduction approach.³² Making it difficult for offenders and scrap metal dealers to successfully do business interrupts the process of crime cooperation without relying on constant arrests.³³ Ultimately, these responses should attempt to mitigate the problem of scrap metal theft through collaborative efforts between the police, scrap metal dealers, utility companies, builders, contractors, legislatures, and state regulators.[§]

You should not focus solely on apprehending offenders, but rather should extend your responses to those that reduce scrap metal theft opportunities. Because most metal remains unsecured, public awareness and reporting of scrap metal theft is vital to improve guardianship and implement an effective response. Focusing solely on metal theft loss will not lead to long-term success. For example, burglary and property theft have some of the lowest clearance rates. If police clear a case and agencies can return stolen goods to the rightful owner, which seldom happens, the owner may not want the property back if it has been damaged. When you recover stolen metal from a scrap metal dealer and return it to the rightful owner, the metal is usually not in the same condition as before the theft. Consequently, the rightful owner may simply sell the metal back to a scrap metal dealer, and the dealer may end up paying for the metal twice. Therefore, focusing resources on reacting to scrap metal theft is not likely to impact the problem of victimization, and you should direct collaborative efforts toward prevention.



Depending on existing laws pertaining to scrap metal theft in your jurisdiction, you should consider additional legislative action. More than 30 states have recently enacted legislation to address scrap metal theft, and at the time of this writing, it is being considered at the federal level.[§] States have varied regarding legislation they have passed in terms of emphasis on preventing or punishing scrap metal thieves. Some legislation prohibits the sale or purchase of certain metal products such as beer kegs or guardrails. Other legislation mandates better sales-reporting means such as stipulating proper seller ID. State and local legislative changes continue to evolve, and reliable research about the new laws' effectiveness remains scarce.

Specific Responses To Reduce Scrap Metal Theft

Increasing the Effort Required To Steal Metal

1. **Hardening scrap metal theft targets.** Some commonly stolen metal products can be made harder to steal. You should educate government agencies, builders, utility companies, and scrap metal dealers as to how to do so (see examples below) and, more generally, on the principles of crime prevention through environmental design (CPTED),^{§§} physical security, and inventory control. The following are some specific measures you can take to deter thefts of common targets:
 - Securing *catalytic converters*, which are attractive theft targets and can be better secured for roughly the same price as replacing them.

[§]As of late 2008, the U.S. Senate was deliberating the federal Copper Theft Prevention Act. The bill does not preclude states from enacting their own laws but provides a baseline for what states must do. The proposed federal law would require scrap metal dealers to do the following: keep records of copper transactions, including the name and address of the seller, the date of the transaction, the amount and description of the copper, and the number from the seller's driver's license or other government-issued ID card; maintain these records for a minimum of one year and provide them to law enforcement agencies to help them track down and prosecute copper thieves; and conduct transactions of more than \$250 by check instead of cash. The law would impose civil penalties up to \$10,000 for failing to document a transaction or for engaging in cash transactions of more than \$250.

^{§§}See Problem-Solving Tools Guide No. 8, *Using Crime Prevention Through Environmental Design in Problem-Solving*, for further information.

Photo taken from www.catclamp.com.





- Chaining *manhole* covers.
- Caging air conditioners to prevent coil theft.

www.protectyourac.com



2. **Securing vulnerable places.** Certain places such as utility companies, construction sites, and empty buildings are vulnerable to scrap metal theft. Proprietary assets-protection personnel should collaborate with the police and any community members (e.g., business employees, politicians, property owners who have been victimized) who are working to address scrap metal theft problems. This collaboration could include sharing incident data, determining whether risk surveys may be useful in foreseeing vulnerabilities, and using countermeasures.



The U.S. Department of Energy's Office of Electricity Delivery and Energy Reliability recommends a number of countermeasures to protect utility companies from scrap metal theft through CPTED and defensible-space concepts.³⁴ Utility companies and the private security firms they hire can implement most of these measures, and the police should encourage them to do so. Among the recommendations are the following:

- Perform threat/risk analyses to identify utility substations' vulnerabilities.
- Ensure that utility customer service centers can conduct electronic surveillance of facilities in real time, remotely control alarm systems, and communicate with security personnel.
- Redesign substation grounding straps to reduce exposed copper.
- Use concrete (contact GS) or other protective covers for grounding wire.
- Develop new-style locking hardware to replace old chain locks.
- Ensure that perimeter fencing is cut-resistant.
- Improve lighting, intrusion alarms, security cameras, signs, and landscaping to promote surveillance.
- Secure equipment, materials, and vehicle keys at night and on weekends.



§The Office of Electricity Delivery and Energy Reliability (2007) reports the Appalachian Power Company sought to curb copper wire thefts by launching a media/radio campaign, teaching scrap metal dealers how to identify metal stolen from electrical facilities, sharing more information with law enforcement, increasing security around company substations, and educating employees on identifying risks from damaged equipment left after a metal theft offense had occurred.

§§ See Problem-Specific Guide No. 15, *Burglary of Retail Establishments*, and No. 18, *Burglary of Single-Family Houses*, for further information.

§§§ Some neighborhoods or area businesses have chosen to voluntarily provide upkeep for vacant houses or commercial property by maintaining the exterior in a way that protects their own property interests. These temporary guardians should, of course, not be permitted to make any major changes to the vacant property.

- Require gates to remain closed to unauthorized personnel where appropriate.
- Add roving security patrols at larger service centers after business hours.
- Install signs warning potential offenders about the risk they face when cutting wires.§

Brandon Kooi



Many of the measures one would take to prevent burglary to houses or businesses can also discourage scrap metal thefts from vacant houses and buildings.§§ Of special importance here, banks and real estate companies should try to avoid making it too obvious that a property is vacant or unprotected. Lenders might consider allowing tenants to stay in the property until a permanent owner can move in.§§§



Although construction sites can be more difficult to secure than finished buildings, among the measures that can be taken are the following:

- improving security lighting,
- installing video surveillance cameras,
- installing alarm systems,
- using secure portable storage units on-site, and
- installing proper fencing.[§]

Railroad yards, which commonly contain a lot of metal products, similarly require special protection.^{§§}

[§]See Problem-Specific Guide No. 43, *Burglary at Single-Family House Construction Sites*, for further details.

^{§§}The British Transport police initiated Operation Drum, collaborating with Network Rail to secure unguarded copper left alongside railway tracks (*Professional Security Magazine*, 2008). Network Rail now stores copper in secure (i.e., locked) depots. Other countermeasures surrounding the British railway include better fencing, warning signs, improved lighting, surveillance cameras, increased patrols, motion sensors, and wire devaluation.

^{§§§}The ISRI is a nonprofit lobbying group representing more than 1,350 scrap metal dealers. See www.isri.org. In September 2008, ISRI hired a manager for their theft prevention program to act as a liaison between the scrap recycling industry and law enforcement, with the goal of curbing scrap metal theft.

Increasing Offenders' Risks

3. **Identifying scrap metal thieves.** Throughout areas known to have incidents of metal theft, officers should look for suspicious activity. For example, offenders often cut stolen copper wire into 2- to 6-foot sections. Suspicion of scrap metal theft can arise when officers spot copper wire tied to the roof of a car headed to a scrap metal dealer or in the bed of a noncommercial vehicle that lacks a company insignia. In addition to transporting stolen metal, offenders often burn the insulation off copper wire, using large drums or open fire pits. Officers in search of methamphetamine labs may also happen upon areas where metal insulation is being burned off of copper, as scrap metal dealers prefer the bare metal.
4. **Identifying scrap metal sellers.** Scrap metal dealers should be required to record the IDs of sellers and verify that they are authorized to sell scrap metal. As the trade association for the scrap metal industry, the Institute for Scrap Recycling Industries (ISRI)^{§§§} collaborates with the National Crime Prevention Council and recommends that all dealers require sellers to provide a photo ID and collect license plate information for every transaction. Moreover, as a stakeholder with an interest in addressing the scrap metal theft problem, the ISRI recommends training employees to identify stolen metal and



§See Problem-Specific Guide No.57 *Stolen Goods Markets* for further information.

maintain records that could be used for prosecution purposes. In partnership with police agencies and scrap metal buyers, the ISRI developed a web-based theft alert system to notify scrap metal dealers about stolen metal reported to the police (see www.scraptheftalert.com). The ISRI encourages dealers to notify local agencies when they suspect thieves are selling them stolen metal.

5. **Recording and tracking scrap metal transactions.** Scrap metal dealers should be required to maintain a written record of all transactions, including the identity of the seller, a description of items bought, the amount of money paid, and the reported source of the scrap metal. Requiring further that dealers pay sellers by check rather than cash should deter sellers who prefer to remain anonymous. Accurate record-keeping has the potential both to deter thieves from trying to sell stolen metal and to help police link metal sellers to reported metal thefts.
6. **Putting ID marks on targeted metal products.** Although property-marking has never been proved to reduce theft largely because thieves will steal marked property and fences and citizens will buy it^{35,§}, conspicuous marking of metal products can give scrap metal buyers firmer grounds on which to challenge attempted sales of marked items. This is most likely to be effective where other measures are put in place that give buyers incentives to refuse buying marked metal.

Offering free etching of vehicle identification numbers (VIN) on auto parts that typically lack them, such as catalytic converters and third-row seats in SUVs and minivans, can discourage their theft. Ideally, automakers will someday stamp the VIN on all commonly stolen auto parts.



Etching deters thieves from stealing the parts (if the thieves know the metal is marked), deters scrap metal dealers from receiving stolen parts (if the scrap metal dealers know the metal is marked), and provides a tracking mechanism for catching thieves who try to sell etched property or scrap metal dealers who receive it. For deterrence purposes, offenders would need to be informed that the property has been tagged and that they face a greater risk of being questioned or caught. Moreover, for this response to be effective, scrap metal dealers must be willing to report sales of etched metals to police, which will be unlikely if dealers are complicit (i.e., not likely to challenge sellers) in the scrap metal theft trade.

§The Texas power company Oncor reported it lowered its recorded scrap metal theft in 2006 compared with 2005 using Identification Technologies' nanotechnology. However, Oncor also undertook other security precautions, such as installing security systems on perimeter fencing, clearing landscaping blockage away from perimeter fencing to increase natural surveillance, increasing security lighting, and replacing the stolen copper wire with copper weld. Despite these precautions, thieves are still stealing from the utility company, but at a lesser extent. See http://tdworld.com/test_monitor_control/highlights/oncor-copper-theft-prevention.

§§See Response Guide No. 6, *Sting Operations*, for further information.

In addition to etching auto parts, new wire-marking technologies have been developed such as the following:³⁶

- Electroplated coding of metal wires uniquely identifies them. A laser etches a company's name and telephone number throughout the length of the wire, which can be detected through ultraviolet light reflected in the adhesive.[§]
 - Wire can be dipped in or sprayed with a coded liquid that remains intact even if the wire insulation is burned.³⁷
7. **Conducting sting operations.**^{§§} Sting operations target scrap metal dealers who violate purchasing regulations. Intelligence or information gleaned from local offenders can help identify dealers reputed to buy stolen metal. Sometimes these operations are limited to verifying scrap yard employees' and contractors' credentials. Other times they involve undercover police officers' trying to sell obviously stolen metal to see if the scrap metal dealers follow state laws requiring proper seller ID and report suspicious activities to law enforcement. A word of caution: sting operations can have the unintended consequence of increasing scrap metal theft if they create a perceived new demand for stolen metal.³⁸ To ensure that sting operations are not just catching unwitting scrap metal dealers, you should consider appropriately educating dealers about any pertinent legislative changes dealing with scrap metal theft.



The Eau Claire (Wisconsin) Police Department devoted approximately 1,000 hours over seven months conducting undercover transactions with scrap/salvage yards. Officers collaborated with railroad companies, beer distributors, and a major power company to “test” local scrap metal dealers’ honesty. In the investigation, the department used covert recording devices, purchased and donated by the power company. The goal of the investigation was not to arrest scrap metal dealers, but rather to establish the need for legislative changes. Police administrators worked with state and local legislatures to enact new laws requiring seller IDs and descriptions of property sold to metal dealers, and granted authority for local government to mandate electronic reporting of metal sales to the police, lessening the burden of physically checking individual sales records. Officers met with scrap metal dealers and explained the new state law. However, undercover operations still found scrap metal dealers’ buying metal that should have raised suspicions. Police then executed search warrants and found stolen materials at various scrap yards. Instead of making arrests, a number of press releases followed, educating the general public about the problem of scrap metal theft and the scrap metal dealers about the serious criminal repercussions that would result from continued bad business practices. Scrap metal dealers were subsequently found to change a variety of business practices, including hiring more employees to properly document transactions; buying scrap vehicles only from licensed dealers; buying copiers and fax machines to send the police department transaction reports; and exchanging emails with scrap metal theft investigators. Consequently, undercover compliance checks of scrap metal dealers have verified that changes have occurred, and short-term results have shown Eau Claire has experienced significant reductions in scrap metal theft.³⁹



8. **Surveilling scrap metal yards.** Although time-consuming, surveilling scrap metal yards can temporarily deter metal thieves and buyers, particularly if officers conspicuously question suspects as they enter the scrap yards. Additional responses will likely be necessary to sustain any impact that surveillance might make on the local scrap metal theft problem.
9. **Offering reward money for tips on metal thieves.** Police, crime prevention organizations, or companies victimized by scrap metal theft can establish hotlines and offer reward money for tips about suspected scrap metal theft.

Reducing the Rewards for Selling Stolen Metal

10. **Removing attractive targets.** To discourage scrap metal theft from construction sites, you should encourage construction companies to use on-demand shipping of metal products to eliminate dormant stockpiles at the site.
11. **Replacing copper ground wire with copper weld.** Some utility companies have begun to replace all-copper grounds with copper wound around galvanized metal, known as copper weld. Copper weld is worth far less than all-copper grounds, and people consider the process of unwinding copper from a metal rod very tedious.⁴⁰ Initiatives targeting copper theft through this strategy will need to find ways to let potential offenders know that stealing copper weld is not financially rewarding.
12. **Prohibiting the purchase of restricted materials.** Scrap metal dealers should be legally prohibited from buying metal used primarily by government agencies, utilities, or builders and that is brought to the dealer by people unaffiliated with these entities. Clearly marking metal products that scrap metal dealers cannot or will not buy discourages thieves from stealing the metal in the first place.⁴¹ Encouraging scrap metal dealers to post signs indicating that they will not accept stolen or prohibited metal and will report sellers to the police can deter metal thieves.



Photo courtesy of Puyallup, Washington Police Department



www.BeerInstitute.org

We Do Not Purchase Used Or Damaged Kegs



All kegs should be returned to your local beer wholesaler or retailer.

BEER KEG THEFT IS AGAINST THE LAW



www.BeerInstitute.org



DO NOT BUY BEER KEGS FOR SCRAP

Beer kegs are the property of brewers and beer importers. No one else should buy or sell kegs for scrap. Accepting kegs is illegal.

Buying kegs for scrap drives up the price of beer. Damaged kegs can be reconditioned and reused when returned to their proper owners. The deposit paid on kegs by retailers and consumers is nowhere near the cost of keg replacement. Due to this discrepancy, the scrapping of beer kegs is costing large and small brewers and beer importers tens of millions of dollars each year.

**If you have any information on violators,
please contact your local police, beer distributor,
or the Beer Institute at 800.379.BREW.**

REFUSE TO PURCHASE ALL BEER KEGS



BEER INSTITUTE



Voice of the Recycling Industry

Institute of
Scrap Recycling
Industries, Inc.



Scrap metal dealers can post signs such as the ones above to deter metal thieves.



13. **Prohibiting cash payments.** Refusing cash payments may deter some metal sellers. For example, a drug addict who wants quick cash or those who cannot convert a check into cash easily might decide stealing metal is not worth their time. Moreover, requiring payments in check form may also deter thieves by increasing the risk that police can later identify them.
14. **Increasing the financial incentive to safeguard certain metal products.** Raising the deposit amount on beer kegs, for example, gives customers a greater incentive to return the empty kegs rather than abandon them, leaving them for people to sell as scrap. For example, Michigan tripled its keg deposit to \$30 for the average keg-user after getting pressure from brewers who were losing significant profits due to theft.

Removing Offenders' Excuses

15. **Conducting a public awareness campaign.** In some communities where scrap metal theft is prevalent, citizens and businesses may become tolerant of being victimized or more willing to buy metal they suspect has been stolen. A scrap-metal theft public-awareness campaign can educate citizens and businesses about the serious consequences of scrap metal theft, including the dangers of electrocution and missing manhole covers, the inconvenience caused by trains delayed by missing tracks, and the rising construction costs due to scrap metal theft. An awareness campaign can perhaps also encourage informal social pressure against stealing metal and trading in stolen metal. Publicly reporting how much metal is being stolen and where it is occurring apprises the public of the problem and of whether it is improving or worsening. Police agency web sites or the mass media can issue such reports.



16. Educating stakeholders about their responsibilities in preventing the sale of stolen scrap metal. New legislation alone will not suffice to change scrap metal dealers' management practices. Stakeholders must be educated on their legal obligations and the importance of fulfilling them. The Oregon Metal Theft Coalition discovered the challenge in educating stakeholders after they surveyed police and scrap metal recyclers.⁴² They discovered that among police survey respondents, half were unaware of important provisions in the law (such as mandatory identification of sellers and noncash payments); 60 percent had no way of tracking scrap metal theft as a unique theft category, thus preventing a true account of these property crimes; and 78 percent were not conducting compliance checks on scrap metal dealers. The coalition found that while the new law improved relationships between scrap metal dealers and the police, recyclers were increasingly buying scrap metal without employees' knowledge of the new regulations.

Scrap metal dealers should be required to train employees on how to identify potentially stolen metal and how to report suspected sellers. Police officers and recognized stakeholders should help scrap recyclers in changing their business practices to prevent cash exchanges for stolen metal. Logistical concerns include having adequate technology for scrap recyclers, such as proper computer software, cameras, and fax machines.



Responses with Limited Effectiveness

17. **Targeting individual offenders.** Although police should arrest metal thieves and prosecution should follow when possible, these tactics alone are unlikely to reduce overall scrap metal theft. Individual metal thieves are readily replaced so long as scrap metal prices are sufficiently high on the local and international metals markets.
18. **Enacting and enforcing “tag and hold” legislation.** Some local ordinances require scrap metal dealers to record and hold certain scrap materials for a certain number of days after buying them. State laws that authorize “tag and hold” restrictions have existed for decades, but police have seldom enforced them until recently. Some scrap metal dealers have challenged the legality of local “tag and hold” ordinances in state and federal courts. Scrap metal dealers argue that state databases should be developed for recording sellers’ IDs and the metal they have sold instead of requiring scrap metal dealers to hold metal for extended periods.



Appendix: Summary of Responses to Scrap Metal Theft

The table below summarizes the responses to scrap metal theft, how they are intended to work, under what conditions they should 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 implementing several different responses. 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 Effort Required To Steal Metal</i>					
1	23	Hardening scrap metal theft targets	Increases the effort required to steal metal	...government agencies, builders, utility companies, and scrap metal buyers are educated about crime prevention through environmental design and collaboratively increase physical security	Some initial costs may be incurred to secure targets
2	24	Securing vulnerable places	Increases the effort required to steal metal	...private security collaborates with police to perform risk assessments, followed by redesigning locations with enhanced security	Some costs may be incurred to secure places



Response No.	Page No.	Response	How It Works	Works Best If...	Considerations
<i>Increasing Offenders' Risks</i>					
3	27	Identifying scrap metal thieves	Increases offenders' risk of detection	...police officers are trained in signs of suspicious activity related to metal theft	May require some specialized training for police officers
4	27	Identifying scrap metal sellers	Deters thieves from trying to sell stolen metal to scrap metal dealers for fear of being identified	...state legislation requires all dealers to collect and record photo ID information from each seller	Police may need to persuade some scrap metal dealers to identify sellers; lax scrutiny of IDs may undermine effectiveness; dealers may lose some sales
5	28	Recording and tracking scrap metal transactions	Deters thieves from trying to sell stolen metal to scrap metal dealers for fear of being identified and linked to reported stolen metal	...state legislation requires scrap metal dealers to record relevant information related to their purchases, and pay sellers by check rather than cash	Scrap metal dealers may need help to set up logistics for keeping and sharing records with police
6	28	Putting ID marks on targeted metal products	Deters thieves from trying to sell and dealers from buying stolen metal for fear of being linked to reported stolen metal	...potential offenders and dealers know targeted metal is identifiable and it is likely police will challenge them for buying or selling it	May require legislation that requires manufacturers to mark some metal products, or advanced technology to mark them after production; property-marking schemes not generally proved effective
7	29	Conducting sting operations	Deters scrap metal dealers by increasing their risk of arrest for knowingly buying stolen metal	...dealers are given opportunities to improve business practices, and police appropriately educate them about legislation related to scrap metal theft	May have unintended consequences such as increasing the demand for stolen metal; dealers may be less likely to cooperate with the police after the police arrest their employees



Response No.	Page No.	Response	How It Works	Works Best If...	Considerations
8	31	Surveilling scrap metal yards	Deters thieves from trying to sell stolen metal to scrap metal dealers for fear of being identified	...police challenge suspects when they enter the premises	Risks alienating legitimate customers, which can undermine dealer cooperation; difficult to sustain surveillance for long periods
9	31	Offering reward money for tips on metal thieves	Increases risks of apprehension and arrest to offenders	...police market hotlines and rewards to the public	Requires funds; staff administers rewards program
<i>Reducing the Rewards for Selling Stolen Metal</i>					
10	31	Removing attractive targets	Reduces temptations for opportunistic thieves and increases the effort for professional thieves to find high-value targets	...the targets represent a significant portion of the local metal theft problem	Changing the business practices of suppliers and receivers may be necessary, and they may need to be persuaded to do so
11	31	Replacing copper ground wire with copper weld	Denies thieves the benefits of high-value targets	...offenders are aware that copper targets are copper weld and that copper weld is worth less in resale	Requires the cooperation of utility and construction companies; potential offenders must be informed about the reduced value of copper weld
12	31	Prohibiting the purchase of restricted materials	Denies thieves the benefits of high-value targets, which discourages thieves from stealing restricted materials	...scrap metal dealers post conspicuous notices that they will not buy restricted materials, and dealers notify police when attempted sales occur	Offenders may try to destroy markings on restricted materials, so dealers should also refuse to buy altered or damaged materials
13	34	Prohibiting cash payments	Denies offenders the immediate benefits of selling stolen metal and increases offenders' risk of being identified through cashed checks	...offenders know they will not receive cash payments before they steal any metal	May require changes in scrap metal dealer business practices to administer check payments



Response No.	Page No.	Response	How It Works	Works Best If...	Considerations
14	34	Increasing the financial incentive to safeguard certain metal products	Improves the guardianship of high-value targets	...the financial incentive exceeds the value of allowing metal to be sold for scrap	Beer distributors may oppose it out of concern that higher keg deposits will discourage sales
<i>Removing Offenders' Excuses</i>					
15	34	Conducting a public awareness campaign	Increases the guardianship of high-value targets and strengthens social disapproval of stealing metal	...the campaign is well designed and carefully targeted	Publicity campaigns can be expensive; it may not affect professional thieves' behavior; it is difficult to measure publicity campaigns' direct impact
16	35	Educating stakeholders about their responsibilities in preventing the sale of stolen scrap metal	Promotes greater compliance with regulations designed to reduce the theft and resale of stolen metal, and increases the risks to offenders of being denied sales of stolen metal or reported to the police	...it is targeted to stakeholders who are generally willing to comply with regulations, but just don't understand them	Can be time-consuming and could require enforcement if cooperation is lacking; may require logistical support to promote scrap recycler accountability and reporting mechanisms such as fax machines, cameras, and computer systems
<i>Responses with Limited Effectiveness</i>					
17	36	Targeting individual offenders			Unlikely, by itself, to reduce overall metal theft
18	36	Enacting and enforcing "tag and hold" legislation			Unpopular with scrap metal dealers; difficult to enforce



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