Legitimacy, Fear and Collective Efficacy in Crime Hot Spots: Assessing the Impacts of Broken Windows Policing Strategies on Citizen Attitudes

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Abstract

The aim of this study was to examine the impacts of broken windows policing at crime hot spots on fear of crime, ratings of police legitimacy and reports of collective efficacy among residents of targeted hot spots. A block randomized experimental design was employed to deliver a police intervention targeting disorder to 55 treatment street segments with an equal number of segments serving as controls. The main outcomes were measured using a panel telephone survey of 371 persons living or working in these street segments. Our results showed that the broken windows police intervention delivered to the crime hot spots in this study had no significant impacts on fear of crime, police legitimacy, collective efficacy, or perceptions of crime or social disorder. Perceptions of physical disorder, on the other hand, appear to have been modestly increased in the target areas. The study also did not find statistically significant changes in crime or disorder in official police data, though statistical power for these tests was low as the study was designed around the individual-level tests of the variables discussed above. As a whole, our findings suggest that recent criticisms of hot spots policing approaches which focus on possible negative "backfire" effects for residents of the targeted areas may be overstated. The study shows that residents are not aware of, or much affected by, a three hour per week dosage of aggressive order maintenance policing on their blocks (in addition to routine police responses in these areas). However, this lack of change also challenges the broken windows thesis as we did not find evidence of the reductions in fear of crime, or the increases in informal social control, that would be expected by advocates of broken windows based policing approaches. Future research needs to replicate these findings focusing on varied target populations and types of crime hot spots, while also examining different styles of hot spots policing.

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Executive Summary

In recent years there has been a growing consensus that the most effective police tactics are those that focus police resources on very small areas with a high level of crime problems. These areas are commonly termed hot spots, and a number of experimental and quasi-experimental studies from the mid-1990s on have shown that police can reduce crime and disorder by focusing attention on these areas as opposed to using broader tactics such as random preventive patrol (Braga, 2001; 2005; National Research Council, 2004; Weisburd & Eck, 2004). This body of evidence led a recent National Research Council review on police policy and practice to conclude that focusing "…police resources on crime hot spots provide the strongest collective evidence of police effectiveness that is now available" (p. 250).

Despite this growing consensus over the effectiveness of hot spots policing approaches in combating crime and disorder, the tactic is still not without its critics. Much of the criticism is not focused on the efficacy of the strategy in fighting crime, but rather on the potential for increased police presence and activity in small hot spots to have collateral consequences for residents living in these areas. For instance, some have expressed concern that hot spots tactics risk increasing fear of crime and eroding police-community relations, which may subsequently threaten police legitimacy (Rosenbaum, 2006; Weisburd, 2004; Weisburd & Braga, 2003). These concerns are especially relevant for hot spots policing approaches that aim to reduce disorder and are designed around the broken windows thesis (Wilson & Kelling, 1982). This is because the broken windows thesis suggests that the real benefit of cleaning up disorder in problem areas is that residents will over time feel safer and be empowered to exercise informal social controls and thus return to playing a role in regulating behavior in their neighborhoods.

In this study we present the first experimental data on the impacts of intensive hot spots policing programs employing broken windows policing tactics on citizen attitudes toward the police. Specifically, we examine whether the tactic has an impact on fear of crime, police legitimacy, collective efficacy and perceptions of crime and disorder. The current study was designed specifically to address these issues through a block randomized experimental evaluation of a hot spots policing crackdown on disorder.

The Study Sites and Unit of Analysis

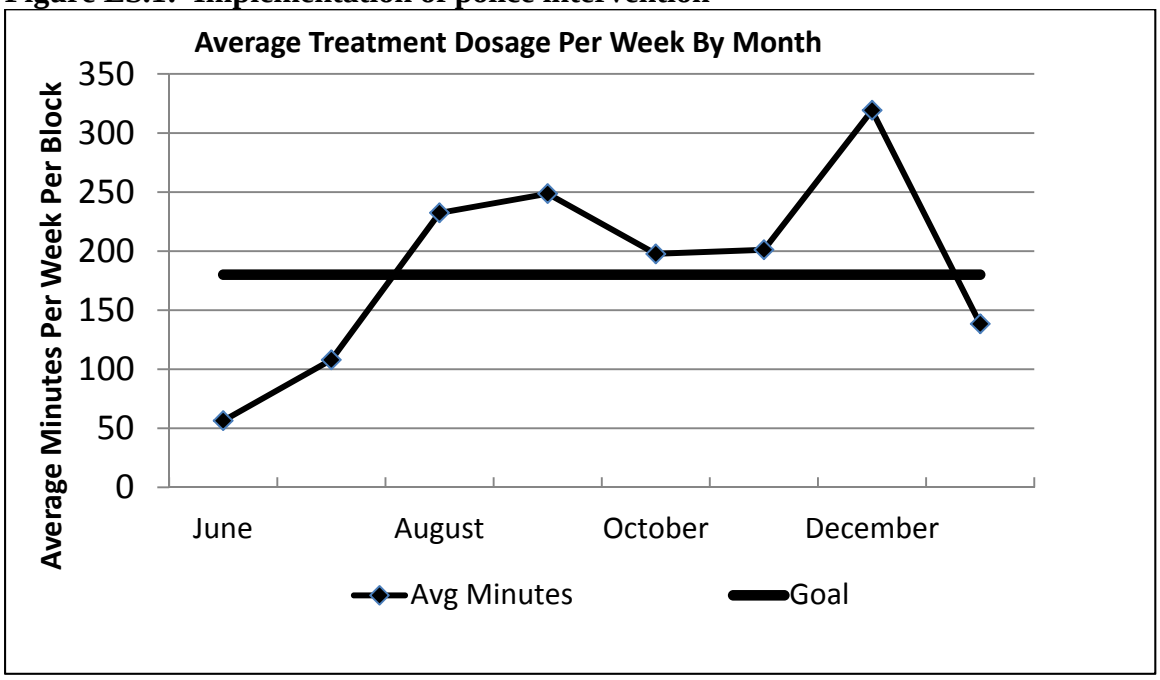
The study was conducted in three suburban cities outside of Los Angeles, CA—Redlands, Ontario and Colton. While the unit of analysis for many measures in this study is the individual, the overarching unit of analysis is the street segment. Questions on the survey bound residents responses to their street segment, and the police intervention was delivered to randomly assigned target street segments. Additionally, measures of crime and disorder from official police data were aggregated to the street-segment level. A street segment (sometimes referred to as a street block in other studies) is defined as the two block faces on both sides of a street. The current study includes 110 street segments (60 in Ontario, 30 in Redlands and 20 in Colton) that were randomized within each city to treatment or control groups. As such, a total of 55 street segments received the police intervention, while 55 others served as controls.

The Police Intervention

Our study examines the impact of a six-month broken windows style policing crackdown on disorder on residents of the targeted areas, in response to recent concerns that such increases in police presence and activity in hot spots may have negative consequences for the community. By design, the intervention did not involve any partnerships with the community as the aim of the study was to directly test the impact of heightened police presence and activity in microplace

hot spots on residents, and we thus did not want to bias these tests by including elements of community-oriented policing. As such, the intervention was designed as an intensive increase in police presence and activity in micro-place hot spots. Specifically, the dosage goal was to achieve an extra three hours of police presence per week in each of the 55 target street segments. While there were some hiccups, the figure below shows that this goal was met over the majority of the study period.

Figure ES.1: Implementation of police intervention



Before the start of the intervention police officers in all three departments attended a training session led by members of the research team which outlined the project and provided guidance on what officers were to focus on during their time on the target street segments. The intervention employed in the current study was designed to be consistent with Wilson and Kelling's (1982) suggestions. As such, officers were instructed that they were to not ignore any instances of physical or social disorder they encountered in target areas, but that they had broad discretion in deciding how to address disorder problems. We did not want to employ a zero

tolerance approach, as that is not consistent with the original broken windows model, or Kelling's later writings on the topic (e.g. Kelling and Coles, 1996). In an effort to be faithful to the original conception of broken windows policing, the intervention in the current study had three central principles. First, no discovered physical or social disorders should go ignored by the police in the target segments. Second, social disorder was to be dealt with in an escalating fashion with citations and arrests as the last resort options. Third, the key element of dealing with physical disorder was rapid repair. Police were to notify the relevant agencies for cleanup of graffiti, trash and other physical disorder issues, and then follow up with them if needed to make sure the problems were dealt with as quickly as possible.

In order to monitor the level of police activity in the target street segments, officers were given log sheets to complete after each visit to a target area. In total, these data show that police dealt with 2,025 social incidents and 1,293 physical disorder problems across the target sites over the study period. This was in addition to normal police response to such problems in the context of citizen calls to the police. As such, it is clear that the current study achieved its goal of a significant increase in police presence and activity at microplace hot spots and can thus offer a strong test of the impact of such efforts on residents living and working on street segments that are subject to focused police intervention.

Data and Methods

A key benefit of the current study is the utilization of a telephone survey with a panel design in which the same respondents were interviewed before and after the police intervention to gauge their perceptions of the levels of crime and disorder on their street segment, their levels of fear of crime/perceived safety, collective efficacy and a host of questions relating to residents' opinions of the police. This design allows for an examination of whether the police crackdown

on disorder and crime in the target areas led to changes in these variables at the individual level. In particular, interviewing the same respondents allows for a test of within-individual change in the outcomes of interest from pre- to post-intervention. This is crucial as it represents the first study directly designed to test for potential backfire effects of hot spots policing efforts on residents of the targeted areas.

The pre-intervention survey design called for interviewing both residential and commercial addresses. For residential addresses the first person over 18 in a household willing to participate in the survey was interviewed, while for businesses the interviewers asked to speak with the owner/manager. If the owner/manager was never around, the interviewers asked to speak with the person on site who was in charge of day-to-day operations. The initial sample for the telephone survey was pulled from the PowerFinder software provided by InfoUSA, with additional phone numbers in study segments in Redlands and Colton obtained from the city water departments. All cases on every segment were then exported into a database with one file for each of the 110 street segments. Again, this included both residential numbers and business numbers in our sample. This file was then randomly sorted and the interviewers worked their way down the list until they obtained the desired number of responses for each segment, or ran out of sample to contact. For the post-intervention surveys, the sample was the households and businesses that completed the first survey—more specifically, our design called for interviewing the same person again if possible.

The telephone surveys were collected by a team of undergraduate and graduate students at California State University, San Bernardino. These interviewers were trained by members of the research team, and were supervised by Dr. Christine Famega, who served as Project Field Supervisor for the experiment. Following the training, all of the interviewers worked two pilot

shifts calling residents and businesses in a city removed from the study area before being allowed to call any of the actual study sample cases. The pre-intervention telephone surveys began in early March 2008, and ran through early June 2008. The surveys were completed in early June and the police intervention began on June 16, 2008. Overall a total of 836 responses were obtained on the final 110 street segments. Of these 836 completed surveys, 489 (58.5 percent) were residential surveys and 347 (41.5 percent) were business surveys. The 836 surveys accounted for a response rate of 38.4 percent for the pre-intervention surveys. The cooperation rate, which represented the ratio of completed surveys in sampled households where a member of the interview team spoke directly to a person and were refused or unable to complete the survey, was 46.1 percent.

The post-intervention survey was collected immediately following the end of the police intervention in January 2009 and ran through April. In all 496 completed post-intervention surveys were collected from the 836 household/business addresses that completed the pre-intervention surveys, representing an overall response rate of 59.3%. A total of 496 post-intervention surveys were completed, and 389 were completed with the same person who took the pre-intervention survey. We decided to not include the surveys completed with different respondents as the main advantage of our research design is being able to examine within individual changes after the police intervention by surveying the same respondents at two time points. The final N for survey analyses in the current study is 371 individuals who completed both waves of the survey, as 18 cases were lost during the missing value imputation process as they had too many missing values for the expectation maximization (EM) imputation procedures to be valid.

Results

Our analysis strategy follows the block randomized design of the study, and is based on ANOVA models that include terms for the police intervention, city (the blocking term) and the interaction between the police intervention and city. The measures of fear of crime/perceived risk, police legitimacy, collective efficacy and perceived social and physical disorder are measured as the pre- to post-intervention changes in each of these dependent variables at the individual level. Two analyses examined change in police calls for service for crime and disorder measured at the street segment level.

Fear of Crime:

A key assumption of the broken windows model is that delivering the tactic to problem areas should reduce fear of crime, and in turn bolster informal social controls. However, this assumption has not been directly tested, and a key goal of our study was to assess whether aggressive order maintenance policing at hot spots would have impacts on fear of crime. Hinkle and Weisburd (2008) have suggested, based on a non-experimental set of analyses, that such tactics may increase fear of crime because citizens may infer from heightened police presence that crime is getting worse on their street. Others such as Dennis Rosenbaum have also suggested that hot spots tactics more generally may increase fear either through the increased presence or a simple labeling affect from having one's home area targeted as a hot spot by police.

Our results do not support either position, and suggest that broken windows policing at hot spots does not strongly influence levels of fear among people who live on affected streets—at least with dosage at the level we observed in the current study. The analysis shows a modest decline in fear in the target areas that was slightly larger than the decline observed in the control

areas, but the ANOVA analysis shows the impact of the police intervention is not statistically significant.

Table ES.1—Analysis of Fear of Crime: Perceived Risk Measure
Mean Change in Perceived Risk: Pre- to Post-intervention by Area

City	Mean Change	Std. Deviation
Target Segments (N=192)	-1.01	4.51
Control Segments (N=179)	-0.79	4.25

ANOVA Results

Source	Type 3 Sums of Squares	df	F	Sig.
Corrected Model	106.760	5	1.114	.352
Intercept	251.159	1	13.106	.000
Treatment	18.257	1	.953	.330
City	35.779	2	.934	.394
Treatment * City	57.650	2	1.504	.224
Error	6994.752	365		
Total	7405.385	371		
Corrected Total	7101.512	370		

R-Squared= .015 (Adjusted R Squared= .002)

Police Legitimacy:

Another key concern related to the impact of an aggressive police tactic like broken windows on residents of targeted hot spots is what impacts the approach has on residents' opinions of the police. As reviewed earlier, in recent years some scholars have begun to raise concerns that hot spots policing in general may lead to dissatisfaction with the police as law-abiding residents begin to feel like targets, rather than partners of the police (Rosenbaum, 2006). Others have noted that this risks subsequently undermining the legitimacy of the police in these areas (Weisburd, 2004; Weisburd & Braga, 2003). The results of our analyses, shown in Table ES.2, suggest little to no impact of the police intervention delivered in this study on ratings of police legitimacy. Legitimacy was slightly down in both the target and control areas and the impact of the police intervention on legitimacy was not significant in the ANOVA model. However, the

decrease was greater in the control areas, which nonetheless challenges any notion of a backfire effect on police legitimacy in the current study. While police attention aimed at disorder at small hot spots in the current study did not bolster opinions of the police, it at least did not appear to undermine them as critics of hot spots policing had hypothesized.

Table ES.2—Analysis of Police Legitimacy

Mean Change in Police Legitimacy Pre- to Post-intervention by Area

City	Mean Change	Std. Deviation
Target Segments (N=192)	-0.13	2.15
Control Segments (N=179)	-0.35	2.17

ANOVA Results

Source	Type 3 Sums of Squares	df	F	Sig.
Corrected Model	18.300	5	.783	.562
Intercept	24.642	1	5.273	.022
Treatment	3.957	1	.847	.358
City	3.666	2	.392	.676
Treatment * City	10.223	2	1.094	.336
Error	1705.719	365		
Total	1745.068	371		
Corrected Total	1724.020	370		

R-Squared= .011 (Adjusted R Squared= -.003)

Collective Efficacy:

The ultimate goal of broken windows policing is not to simply clean up disorder at problem areas, nor even to simply reduce fear of crime, but rather to empower residents to engage in informal social control and begin dealing with small problems on their own. As with the other outcomes above, our results (see Table ES.3) suggest the police tactics delivered during the current study had no impact on this outcome. As with the police legitimacy analysis, the results show that collective efficacy was slightly decreased in both areas, with a larger decrease in the control segments. The impact of the intervention on collective efficacy is not statistically

significant in the ANOVA model. This finding is not surprising given the lack of a clear reduction in fear of crime in the target areas in the above analyses—which is the mechanism that the broken windows thesis expects to bolster informal social controls.

Table ES.3—Analysis of Collective Efficacy
Mean Change in Collective Efficacy Pre- to Post-intervention by Area

City	Mean Change	Std. Deviation
Target Segments (N=192)	-0.23	3.39
Control Segments (N=179)	-0.45	3.25

ANOVA Results

Source	Type 3 Sums of Squares	df	F	Sig.
Corrected Model	34.898	5	.629	.678
Intercept	19.936	1	1.796	.181
Treatment	1.155	1	.104	.747
City	24.905	2	1.122	.327
Treatment * City	6.429	2	.290	.749
Error	4051.884	365		
Total	4127.901	371		
Corrected Total	4086.782	370		

R-Squared= .009 (Adjusted R Squared= -.005)

Crime and Disorder:

While the above outcomes were the main focus of our study, we also felt it important to examine the impact on crime and disorder. We examined this both by looking at resident perceptions of crime and disorder, as well as police call for service data. For space reasons, these results are not displayed in this executive summary. For the perceptual measures, we found no significant changes in perceptions of social disorder or crime, but did find evidence of an increase in perceptions of physical disorder in the target areas relative to the controls. Perhaps this is due to the police interacting with residents and businesses by asking them to clean up physical disorder, address code violations and so forth, which could have made people more aware of physical problems on their street segments. The analyses of official measures of crime

and disorder, showed no significant changes in calls for service. However, statistical power was very low in these segment-level analyses as the study was designed around the testing the individual-level outcomes.

Conclusions

Our findings provide the first experimental evidence on the effects of broken windows policing at hot spots on citizen perceptions. Our results do not support either the concerns of the critics of hot spots policing (Rosenbaum, 2006; Weisburd, 2004; Weisburd & Braga, 2003), or the hopes of the advocates of broken windows policing (e.g. Wilson and Kelling, 1982; Kelling and Coles, 1996). We do not find, on the one hand, that the level of aggressive order maintenance policing delivered in our study increased citizen fear or reduced perceptions of police legitimacy as hot spots critics have feared. On the other hand, our study also does not provide evidence of short-term effects on reducing fear or bolstering collective efficacy anticipated by the broken windows thesis. We do find a marginally significant impact on perceptions of physical disorder, with people on treatment segments perceiving a relative increase rather than decrease in physical disorder.

Our findings in the citizen survey suggest that ordinary people who live on a street segment are not very aware of the activities of the police. This is the simplest conclusion that can be reached from our data. An assumption that residents are not very much aware of police activities on an everyday basis provides an explanation for why the "negative externalities" of hot spots policing are not observed in our study. Legitimacy evaluations do not decline in this context, and fear does not increase because ordinary people do not have a good deal of interaction with the police. But an observation that ordinary people are not necessarily aware of increases in police activities on their block does not explain why fear of crime does not decline

or collective efficacy does not increase on blocks where the police have worked hard to ameliorate disorder problems.

Following the broken windows thesis, we would expect that police work directed at problem street segments would lead in the long run to improvements in disorder and then reductions in fear of crime. Our study did not have a powerful design to detect impacts on crime and disorder, but irrespective of those impacts, the reduction in fear in the broken windows model was seen to result from the presence of the police in the community and not in any specific reductions in crime. Such reductions were expected to come later in a developmental cycle. We do have measures of the activities of police, and those show that there was concentrated and consistent order maintenance policing carried out through the experimental period. One explanation for our results may simply be that we do not observe these segments long enough. Broken windows theorists argue that there is a developmental cycle (Kelling and Coles, 1996; Skogan, 1990; Wilson and Kelling, 1982), and that cycle may take a long period to reach the stage where citizen attitudes are affected. Accordingly, our study does not show that the broken windows approach "doesn't work," but only that the developmental cycle does not appear in the short follow-up period of our study.

Our findings regarding citizen attitudes lead to a series of straight forward policy implications of our work. First, and perhaps most important, this experiment suggests the benefits of hot spots policing are not offset by possible "negative externalities" in regard to ordinary people who live on a targeted street. It may be that we should be concerned with the impacts of hot spots policing on offenders or young people who have more contact with the police on an everyday basis, but increases in police activities at the levels implemented in our study do not lead to large decreases in perceptions of police legitimacy or increases in fear of

crime among residents in general. Hot spots policing programs should not be avoided out of fear of their negative impacts on ordinary citizens. At the same time, we did find marginal increases in evaluations of physical disorder, suggesting the importance of recognizing that citizens may equate more police with more crime and disorder. It may be important for police to deal directly with such perceptions when hot spots policing programs are developed. Perhaps, for example, by interacting with the community and noting the reasons for extra police presence and directly informing citizens when problems are addressed.

On the other hand, our findings regarding fear of crime and collective efficacy should give caution to scholars and police officials who expect that order maintenance policing will have direct and visceral impacts on people who live in affected areas. For broken windows policing to have the long-term effects that have been proposed, police practices would have to be observed and recognized by the vast majority of people who live in crime hot spots. This study suggests that that assumption is not borne out in crime hot spots of the types we have studied. Our work provides a strong challenge to the broken windows policing model. Given its wide adoption, we think it is time for the government and police to invest in critical studies that test assumptions about the impacts of police presence on citizens. We do not suggest that a single study "proves" that no investment should be made in broken windows policing. Indeed, some past studies suggest such approaches are often effective in reducing crime and disorder. However, our study is the first one we are aware of to specifically examine the underlying claims of long-term influences on crime through reduced fear and enhanced informal social control that was first proposed by Wilson and Kelling (1982). Our findings are not supportive of this model.

However, caution is needed as our results are of course based on a single study, using a specific set of strategies, in jurisdictions with only moderate levels of crime. A great deal of

further research is needed to examine whether these findings hold up in other studies that vary strategies and crime levels of jurisdictions examined. This is particularly important as the hot spots of crime in this study have much lower levels of criminal activity than crime hot spots in many other studies conducted in larger, more densely populated urban areas. Additionally, other approaches to order maintenance need tested, as it is possible that more heavy handed crackdowns on disorder may produce different results in terms of impact on crime and disorder as well as any backfire effects.

Chapter 1-Introduction

In recent years there has been a growing consensus that the most effective police tactics are those which focus police resources on very small areas with a high level of crime problems. These areas are commonly termed hot spots, and a number of experimental and quasi-experimental studies from the mid-1990s on have shown that police can reduce crime and disorder by focusing attention on these areas as opposed to using broader tactics such as random preventive patrol (Braga, 2001; 2005; National Research Council, 2004; Weisburd & Eck, 2004). These studies will be reviewed below, but as a whole this body of evidence led a recent National Research Council review on police policy and practice to conclude that focusing "…police resources on crime hot spots provide the strongest collective evidence of police effectiveness that is now available" (p. 250).

Despite this growing consensus over the effectiveness of hot spots policing approaches in combating crime and disorder, the tactic is still not without its critics. Much of the criticism is not focused on the efficacy of the strategy in fighting crime, but rather on the potential for increased police presence and activity in small hot spots to have collateral consequences for residents living in these areas. For instance, some have expressed concern that hot spots tactics risk increasing fear of crime and eroding police-community relations, which may subsequently threaten police legitimacy (Rosenbaum, 2006; Weisburd, 2004; Weisburd & Braga, 2003). Thus it is argued that it is important for studies of hot spots policing to not focus only on reductions in crime and disorder, but to also examine the potential for backfire effects on other outcomes, which may create difficulties for the police or reduce citizen perceptions of legitimacy.

These concerns are especially relevant for hot spots policing approaches that aim to reduce disorder and are designed around the broken windows thesis (Wilson & Kelling, 1982).

This is because the broken windows thesis suggests that the real benefit of cleaning up disorder in problem areas is that residents will over time feel safer and be empowered to exercise informal social controls and thus return to playing a role in regulating behavior in their neighborhoods. However, if the critics of hot spots policing are correct in their hypotheses, a hot spots focused disorder crackdown (meaning an intense increase in police presence and enforcement aimed at ameliorating disorder as envisioned in broken windows policing) may increase fear of crime, rather than decrease it as the broken windows advocates would expect. As such, a central issue for any study of broken windows policing at small target locations is examining the impact the tactic itself has on residents. Indeed, one earlier study of a disorder crackdown at hot spots using non-experimental data found increased fear of crime among residents of the targeted areas, even though disorder was significantly reduced by the intervention (Hinkle & Weisburd, 2008).

In this study we present the first experimental data on the impacts of intensive hot spots policing programs employing broken windows policing tactics on citizen attitudes toward the police. Do broken windows policing tactics at hot spots increase or decrease citizen fear of crime? Do they increase or decrease legitimacy of the police in the eyes of the public? Our study answers these questions using a multisite randomized experiment. The key unit of analysis in our study is crime and disorder hot spots defined as street segments meeting specific thresholds of crime and disorder activity. A total of 110 such hot spots in three California cities, Redlands, Ontario, and Colton were randomized to a treatment condition employing broken windows policing tactics, and to a control condition receiving normal police response. Though we collect data on crime outcomes, as we detail below, our study was designed to provide a powerful test not of the crime control effectiveness of hot spots policing (which has been documented in prior studies) but rather of impacts of broken windows hot spots policing on

citizens who live in target areas. Accordingly, our main outcome measures are citizen attitudes drawn from a two-wave survey conducted on the treatment and control street segments in our study.

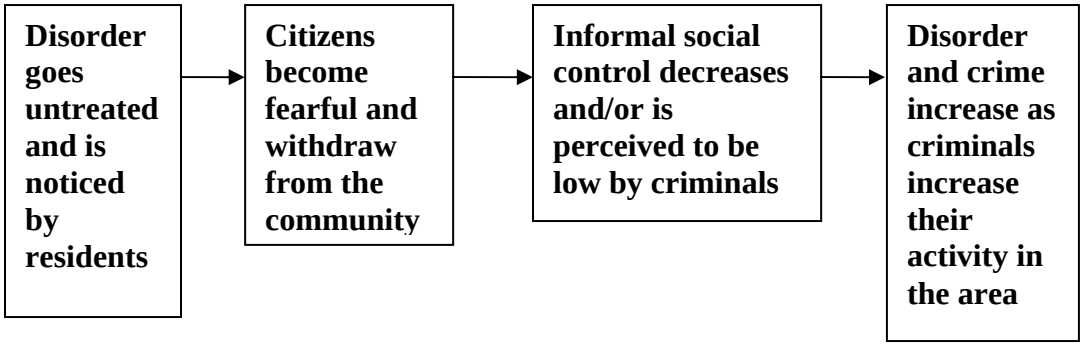
The Broken Windows Thesis

In their seminal article published in *The Atlantic Monthly* James Q. Wilson and George Kelling (1982) argued that police could more effectively fight crime by focusing on more minor annoyances which plague communities. This encapsulated both rundown physical conditions in the form of litter, dilapidated buildings, graffiti, etc. as well as social nuisances such as panhandling, loitering and public drinking. Their idea that crime could be prevented through targeting these issues was based on the thesis that such social ills eventually lead to community decline if left untended. If these nuisances, hereafter referred to as disorder, are left untended they eventually begin to accumulate and start a process of community erosion which may eventually lead to crime.

This process begins with disorder not being dealt with in a timely manner. Trash is not picked up; loiterers are not asked to move on. In time this invites more trash being thrown in the vacant lot, more loiterers to gather, and more people to start drinking in public. As this disorder accumulates it sends a message to residents that things are getting out of control and that social controls have failed in their neighborhood. The key here is that residents *perceive* untended disorder. It will likely have little impact if residents are not aware of the disorder in the community. In turn, Wilson and Kelling (1982) suggested that residents who perceive worsening disorder problems eventually become fearful and begin to withdraw from the community. They spend less time outside, become less likely to intervene and ward off

disorderly people, and, in the extreme, "good" residents may move away. The net effect is a lowering of informal social controls, which leads to more and more disorder and minor crimes occurring as people perceive that they can get away with such behavior in these areas where they routinely see disorderly behavior going unpunished. In time, criminals also take these signs of untended disorder as a cue that such a neighborhood is a good place for them to work with relative impunity. In Wilson and Kelling's terms such neighborhoods are vulnerable to criminal invasion. It is not inevitable, but such places are much more likely, in their view, to see an increase in crime than neighborhoods which exert control in regulating the occurrence of disorder. Once crime occurs, residents also notice this and the cycle of fear and withdrawal is likely to worsen (see also Skogan, 1990). The broken windows thesis, as outlined above, can be visualized as shown in Figure 1.1.

Figure 1.1- The Broken Windows Thesis



As such, a main thrust of Wilson and Kelling's argument was that police could fight crime more effectively by dealing with disorder. If they stop disorder from accumulating and prevent neighborhoods from reaching the tipping point where they become vulnerable for criminal invasion, they can have an impact on serious crime. Wilson and Kelling do not discuss what police may do in neighborhoods already past the tipping point and fully invaded by criminal behavior, but one could infer that cleaning up disorder would still play a role in

restoring informal social control in such neighborhoods and helping residents take back the streets. In any case, their suggestion has had a wide impact on policing over the past 25 years. However, before going into the impact of the broken windows thesis on policing it is important to first examine the theoretical underpinnings of Wilson and Kelling's work.

Theoretical Development of the Broken Windows Thesis

While Wilson and Kelling are credited with developing the broken windows thesis, they were not the first to examine the role disorder played in communities. In criminology, concern over disorder can partly be traced to early research on fear of crime. One issue that drove interest in the topic was a body of research that consistently found that fear of crime had seemingly little to do with crime. For instance, most studies found that females and the elderly reported the highest levels of fear of crime[1] (see Ferraro, 1995 chapters six and seven for a review of studies on these topics), yet the National Crime Surveys conducted by the Bureau of Justice Statistics consistently showed young males to have the highest rates of victimization. Thus fear of crime did not appear to be driven by actual victimization risk. This notion was furthered by studies finding that fear of crime was not clearly correlated with neighborhood crime rates (Lewis & Salem, 1986) and that while fear increased with increases in crime it did not fall as rapidly when crime declined (Taylor & Hale, 1986). These findings naturally led criminologists to question what was driving fear of crime if it was not crime itself.

A number of studies subsequently turned to disorder to explain fear of crime. For example, James Q. Wilson first noted in 1975 that people were troubled not only by crime but also by "(t)he daily hassles they are confronted with on the street—street people, panhandlers,

[1] However, Ferraro (1995) notes later that the effects of age on fear disappear when controlling for other factors (p. 70-71).

rowdy youths, or 'hey honey' hassles—and the deteriorated conditions that surround them—trash strewn alleys and vacant lots, graffiti, and deteriorated or abandoned housing—inspire concern" (p. 66). Similarly, Garofalo and Laub (1978) stated that "…what has been measured in research as the 'fear of crime' is not simply fear of crime" (p. 245) and tied fear to quality of life and concern for the community. Ideas closely related to the broken windows thesis are most clearly seen in work by Hunter (1978) presented at the Annual Conference of the American Society of Criminology. Hunter's work suggested that disorder affected both fear of crime and actual crime through a process in which disorder signaled to residents that local controls had failed and caused them to become personally at risk of victimization. He suggested that this would increase crime and further increase fear. His work can easily be seen as an early version of the broken windows thesis.

Finally, Wilson and Kelling's ideas were greatly influenced by a social-psychological study conducted by Stanford psychologist Philip Zimbardo in 1969, as indicated by the detailed discussion of the study in their broken windows article. Zimbardo abandoned a car with its hood up in two places—the Bronx in New York City and on the Stanford Campus in Palo Alto, California. The car in the Bronx was vandalized within 10 minutes, and within 24 hours everything of value was removed. The car in Palo Alto, however, was not touched for more than a week. Zimbardo then smashed the windshield with a sledgehammer, and from that point on people passing by saw the activity and the damaged car and joined in the destruction. This is where the broken windows metaphor came from for Wilson and Kelling and, along with the above work on fear of crime and disorder, formed the basis for their idea that untended disorder is what eventually leads to a neighborhood becoming crime plagued. Just like the broken

window on the car in Palo Alto invited more vandalism, untended disorder is a visual cue in a community which invites more disorder and eventually more serious crime.

While the theoretical underpinnings of the broken windows thesis can clearly be seen in this early work on fear of crime and the Zimbardo study, the law enforcement portion of Wilson and Kelling's ideas were directly influenced by earlier work they had done on policing. Most notably, this is seen in the work of Wilson and Boland (1978) who noted that aggressive policing can reduce crime. Their main point was that police officers may reduce crime not by how many are on patrol, but rather by *what* they do while on patrol. They suggest that if police are aggressive in arresting criminals they can have more of an impact on crime. This idea can be seen as a response to the Kansas City Preventive Patrol Experiment, which found that routine patrol had no effect on crime (Kelling, Pate, Dieckman, & Brown, 1974). They used traffic citations as a proxy for aggressive policing[2] and found a negative relationship between police aggressiveness and crime rates.

George Kelling was also greatly influenced by his own earlier work on policing. In particular, the broken windows article (Wilson & Kelling, 1982) repeatedly makes reference to his experience working on an evaluation of foot patrol in Newark, New Jersey (Kelling, Pate, Ferrara, Utne & Brown, 1981). Kelling elaborates on how his experiences on that study showed him that by being active in the community the police could maintain order and make residents feel safer, which could have positive impacts even if the police strategy was not directly reducing crime.

The above discussion lays out the theoretical foundation for Wilson and Kelling's broken windows thesis. It is clear how work both on causes of fear of crime, the Zimbardo study, and

[2] It is important to note that this method and other parts of their study were critiqued by Jacob and Rich (1980; 1981; see Wilson and Boland, 1981 for response).

studies of specific police practices laid the groundwork for their ideas that police could fight crime by tackling smaller problems—the disorder in a community that made residents fearful and uneasy.

Broken Windows Policing-What do we know?

While the broken windows idea certainly is relevant to the development of communities irrespective of policing approaches (see Skogan, 1990), from the outset Wilson and Kelling (1982) saw the police as a central part of community efforts to prevent the cycle of fear and crime by targeting disorder. For example, they stated that "(t)hough citizens can do a great deal, the police are clearly the key to order maintenance (p. 36)" and that "we must return to our long abandoned view that the police ought to protect communities as well as individuals (p. 38)."

In the two plus decades since its inception, the broken windows perspective has had a significant impact on police strategies. Police agencies throughout the world have adopted the underlying premise of broken windows policing, and it has had a strong impact upon popular police innovations like community policing and Compstat (Committee to Review Research, 2004). A large part of this impact is due to the highly publicized use of broken windows policing in New York City in the 1990s. Broken windows-based policing was a central focus of the efforts of police commissioner William Bratton and Mayor Rudolph Giuliani to clean up the city. Crime decreased dramatically during this period and as such broken windows policing was widely touted as an effective way for police to fight crime (Bratton & Knobler, 1998; DiIulio, 1995; Giuliani & Kurson, 2002; Karmon, 2000; Kelling & Sousa, 2001; Maple & Mitchell, 1999; Silverman, 1999). Nonetheless, more careful reviews of the crime statistics in New York have questioned the assumption of a strong crime control impact. Eck and Maguire (2000), for

example, show that the crime decline in New York started before innovations were introduced by Bratton and Giuliani and that other urban areas experienced similar crime declines. Weisburd, Mastrofski, Willis and Greenspan (2006) show that declines before the implementation of Compstat were found in other cities as well. Bowling (1999) suggested that the decline of the crack cocaine epidemic likely played more of a role in reducing the murder rate in New York than any specific police tactics introduced in the mid 1990s such as zero tolerance policing.

Empirical studies of the New York experience are rare, and the methodological quality is often weak. For example, there is not a single carefully designed field study of order maintenance policing in New York. In this context, studies are generally forced to use existing data and proxy measures for broken windows policing. For example, Kelling and Sousa (2001) found a relationship between misdemeanor arrests and crime in 76 precincts in New York between 1989-1998. They use a multivariate multi-level modeling approach in which the precincts are nested in city boroughs. Based on their findings, they estimated that for every 28 disorder arrests in New York City, one violent crime was prevented. This would account for 60,000 violent crimes prevented in New York City from 1989-1998. These findings have been challenged in a series of papers which have raised questions about the data and statistical approaches used (e.g. Harcourt; 2001; Harcourt & Ludwig, 2006; Taylor, 2006). For example, Harcourt and Ludwig (2006) re-analyzed data from NYC and showed that the reduction in crime was likely due to simple mean reversion—what goes up must come down. However, a study of arrestees in New York found that they were aware of the crackdown on disorder and reported having scaled back their activity as a result, suggesting a deterrent impact of the broken windows policing program (Golub, Johnson, Taylor, & Eterno, 2003).

Other studies have found that broken windows policing tactics likely had an effect on crime in NYC, but that its reach may be more limited than suggested by Kelling and Sousa (2001). Rosenfeld, Fornango and Rengifo (2007), for example, found that broken windows policing was significantly related to declines in homicide and robbery rates, but the magnitude of the impact was relatively modest. Another study found impacts for homicides involving firearms, but not for non-gun homicides (Messner, Galea, Tardiff, Tracy, Bucciarelli, Piper, Frye, & Vlahov, 2007). Finally, Corman and Mocan (2005) found that misdemeanor arrests in NYC from 1974-1999 were significantly, negatively related to robbery, motor vehicle theft and grand larceny after controlling for economic conditions and deterrence, but were not significantly related to the other four index crimes.

Studies outside New York City that examined broken windows policing as a general strategy have produced similarly mixed results. Sherman (1990) found that stepped up enforcement of public drinking laws and parking regulations had no impact on serious crimes, while another study found that increased patrols for disorderly behavior did not reduce robbery or burglary rates (Novak, Hartman, Holsinger, & Turner, 1999). Katz, Webb and Shaefer (2001) found that broken windows policing reduced disorder and public morals offenses such as prostitution but had no impact on serious crimes. Worrall (2002), on the other hand, found misdemeanor arrests and filings to be significantly and negatively related to property crime rates in California.

In one area, the application of disorder policing at crime hot spots, studies give indications of larger and more consistent crime control effects. Below we begin by reviewing the hot spots policing literature more generally, and then focus specifically on disorder policing in hot spots.

Hot Spots Policing

The notion that police can have a larger impact on crime by focusing on small locations that have a large amount of crime problems is a relatively recent idea. While police and scholars have always known that certain areas had more problems than others, it was not until the emergence of theoretical innovations that focused on situational and contextual responses to crime (Brantingham & Brantingham, 1984; Cohen & Felson, 1979; Clarke & Cornish, 1985) and technological advances in the form of computerized crime mapping (Weisburd & Lum, 2005; Weisburd & McEwen, 1997) that scholars began to focus on the concentration of crime in very small geographic areas called "crime hot spots" (e.g. see Brantingham & Brantingham, 1999; Crow & Bull, 1975; Pierce, Spaar, & Briggs, 1986; Roncek, 2000; Sherman et al., 1989; Weisburd, Bushway, Lum, & Yang, 2004; Weisburd & Green, 1994; Weisburd, Maher, & Sherman, 1992, Weisburd, Morris, & Groff, 2009). One influential early study, for example, found that only 3 percent of the addresses in Minneapolis, Minnesota accounted for 50 percent of the crime calls for service (Sherman et al., 1989). Weisburd et al. (2004) found not only that there were similar levels of crime concentrations at hot spots in Seattle, Washington (defined as high crime street segments), but also that such hot spots were relatively stable across time.

Sherman and Weisburd (1995) developed the first hot spots patrol experiment in Minneapolis, Minnesota, arguing that focusing police on crime hot spots provided strong potential for developing more effective police practices. The Minneapolis Hot Spots Experiment found that crime and disorder were significantly reduced in 55 target hot spots (generally street segments including adjoining intersections) randomly assigned to receive extra patrols, relative to 55 control areas which received their normal level of police presence (Sherman & Weisburd, 1995). Such a finding was good news for police who had suffered through two decades of belief

that nothing they could do worked in preventing crime after a number of studies found that key police tactics such as random patrol (Kelling et al., 1974), expanding the size of the police force (Levine, 1975), rapid response to calls for service (Spelman & Brown, 1984) and police investigations (Greenwood & Petersilia, 1975) had little to no impact on preventing or solving crimes.

Hot spots policing, and the early studies showing it could reduce crime, were thus welcome news in policing circles, and tactics based on the idea diffused rapidly through the field (see Weisburd & Lum, 2005). Importantly, as the tactic spread it quickly advanced to using more tactics beyond simple directed patrol to fight crime in hot spots. For instance, several studies examined the impact of problem-oriented policing at crime hot spots (see for example, Braga, Weisburd, Waring, Green Mazerolle, Spelman, & Gajewski, 1999; Hope, 1994; Sherman, Buerger & Gartin, 1989; Weisburd & Green, 1995). Others focused on cracking down on particular types of crime in hot spots such as crack houses (Sherman & Rogan, 1995a) and gun crimes (Sherman & Rogan, 1995b).

A systematic review of hot spots policing by Anthony Braga (2001; 2005) indentified five randomized experimental and four quasi-experimental studies testing the strategy. Braga found noteworthy reductions of crime and/or disorder in seven of these nine studies, which suggests the efficacy of focusing police resources on small hot spots of crime and disorder. Recent reviews of police effectiveness more generally have also emphasized the promise of hot spots policing, concluding that the most effective strategies are those that focus on small areas with a large number of problems, and employ a wide array of tactics beyond simple law enforcement to combat these problems (see Committee to Review Research, 2004; Weisburd & Eck, 2004).

Broken Windows Policing at Crime Hot Spots

Perhaps not surprisingly given the evidence for the effectiveness of hot spots policing more generally, broken windows policing at crime hot spots has yielded similarly strong results. While the earlier evidence on broken windows policing was very mixed, the small body of research that has examined the impacts of disorder focused policing at crime hot spots has produced promising results. A number of these studies have focused on drug-related crime and related disorder issues. For instance, in the Jersey City Drug Market Experiment Weisburd and Green (1995) examined the impact of a police crackdown on drug activity and related disorder and crime across 56 hot spots. Their results showed significant reductions in disorder calls for service. Drug-related calls were also down, while no significant impacts were found for crime calls (which were not a focus of the intervention).

A study of the SMART program in Oakland, California produced similar results (Green, 1995; 1996). This study involved a police intervention heavily focused on disorder abatement using such tactics as enforcing housing code violations, dealing with abandoned cars, evicting squatters and dealing with various other disorder issues to help fight drug-related crime. Green's study found significant reductions of disorder as well as drug-related problems in the targeted areas. Similarly, the Police Foundation Displacement and Diffusion Study involved intensive crackdowns on prostitution and drugs in two hot spots, paired with a strong crackdown on social and physical disorder. Loiterers were dealt with to keep potential clients away from prostitutes and drug dealers, and physical disorder was eradicated in many cases. For instance abandoned lots were turned into basketball courts and neighborhood gardens in the targeted areas. The results of this study showed significant reductions in not only disorder, but also drug-related crime and prostitution.

Other studies sought to examine the impact of problem-oriented policing (POP) at crime hot spots on disorder and crime. For instance, an experimental study by Braga and colleagues (1999) examined the impact of POP at violent crime hot spots in Jersey City, New Jersey. While reducing violent crime was the goal of the project, many of the problems tackled by police in the hot spots were disorder related issues. Specifically the authors noted that throughout the intervention period officers working in the 28 target hot spots "…generally attempted to control their places by cleaning up the environment through aggressive order maintenance and making physical improvements, such as securing vacant lots or removing trash from the street" (Braga et al., 1999, p. 553). The study found that not only were these efforts successful in reducing disorder, but also in reducing incidents of serious crimes such as robbery.

Finally, another recent randomized experimental sought specifically to examine the impact of disorder-focused POP policing at hot spots of disorder and crime in Lowell, Massachusetts (Braga & Bond, 2008). Specifically, the study examined the impact of three different types of police tactics aimed at disorder in the target hot spots—misdemeanor arrests, situational prevention strategies aimed at physical disorder issues and social service efforts. The main analysis found that as a whole the disorder crackdown significantly reduced disorder calls for service in the target areas and, more importantly, reduced serious crime calls—including robbery, assault and burglary calls for service.

Moreover, Braga and Bond (2008) noted that the strongest crime reduction benefits were produced by the situational crime prevention efforts delivered in the targeted areas. These efforts focused on reducing physical disorder problems which generate opportunities for crime. This strategy very clearly fits with the suggestions of Wilson and Kelling (1982) in their original proposal of broken windows policing that the police can best fight crime by helping clean up

communities. Braga and Bond also found that misdemeanor arrests were associated with declines in crime calls, though the effect was not as great as that seen for the situational prevention efforts targeted at physical disorder problems. As such, they suggest that a pure zero tolerance approach is not the ideal form of broken windows policing.

Potential Negative Impacts of Broken Windows Policing at Hot Spots for Residents of Affected Areas

As the review above makes clear, the application of broken windows strategies to crime hot spots has been found to have strong crime prevention outcomes. Nonetheless, the application of intensive police interventions at crime hot spots raises a series of questions regarding potential citizen responses. Such responses are particularly important for broken windows approaches at hot spots because a key element of the long-term impacts of this approach revolves around its effects on the people who live in targeted places. Wilson and Kelling (1982) did not suggest that police should clean up disorder simply for the sake of having some direct impact on more serious crime. Their hypothesis clearly stated that police efforts in cleaning up disorder should reduce fear of crime among residents. Subsequently, residents who feel safer should be more empowered to exert informal social controls in their communities, and thus play an active role in maintaining order. As such, the key for broken windows policing is not to merely see reductions in disorder, nor even reductions in more serious crime—though that is the ultimate goal. If the broken windows thesis is correct, the real key is that by cleaning up disorder, police will enhance feelings of safety among residents and empower them to exert informal social controls on their own.

The evidence of the impacts of broken windows approaches more generally on citizen fear of crime is mixed. Following the logic proposed by Wilson and Kelling, some studies have

examined the impact of broken windows policing on disorder and fear of crime, and do not look directly at the impact of the strategies on serious crime. A good example is the evaluation of disorder reduction strategies in community policing programs in Houston and Newark (Skogan, 1990). In those studies, Skogan found that some of the community policing strategies used in Houston and Newark reduced fear of crime, while one strategy involving a more traditional crackdown on disorder used in Newark had no effect on fear of crime. On the other hand, an evaluation of a program aiming to reduce the "signs of crime" in Newark, New Jersey found that targeting social and physical disorder did not achieve any of its primary goals (Pate, Wycoff, Skogan & Sherman, 1986). In fact, the evidence showed that the program may have actually backfired as it appeared to have led to higher levels of perceived personal crime problems and lower levels of satisfaction with the area among residents of the program areas.

In the broader hot spots literature, many policing scholars have noted the importance of examining the impact of hot spots policing on residents of targeted areas (Rosenbaum, 2006; Weisburd, 2004; Weisburd & Braga, 2003). Importantly, these critiques have been concerned not only with the effects of intensive police interventions on fear of crime, but also on legitimacy and attitudes toward the police more generally. Rosenbaum (2006) for example, noted that police tactics focusing on hot spots could have negative impacts in various ways. For instance, he noted that simply being labeled a hot spot could increase fear of crime among residents of the area—which would clearly be a threat to broken windows policing's goal of enhancing feelings of safety. Additionally, Rosenbaum noted that the tactics risk souring police-community relations as residents begin to feel like targets rather than partners of the police (see also, Weisburd & Braga, 2003; Weisburd, 2004).

In terms of this threat to police legitimacy, broken windows-based hot spots approaches would appear to have a relatively higher risk of souring community relationships as compared to hot spots approaches based on simple directed patrol or other approaches such as problem-oriented policing. This is due to the aggressive nature of the broken windows policing approach. With its focus on minor crimes and disorders, broken windows-based tactics will likely generate more negative contacts between citizens and police as officers are required to confront loiterers, ask people to clean trash out of their yards and so forth. In this regard, a study by Greene (1999) found that broken windows policing in New York increased complaints against the police.

Despite these critiques, there is little empirical evidence on the impacts of hot spots policing on citizens who live in targeted areas on either fear of crime or attitudes toward the police more generally. A recent study by Hinkle and Weisburd (2008) examined the effects of a hot spots policing effort that targeted disorder and crime on citizen fear of crime as part of a more general study of displacement and diffusion of crime control benefits (see Weisburd et al., 2006). Hinkle and Weisburd suggest that police crackdowns on disorder at hot spots may in fact lead people living in the areas targeted to become more fearful of crime. While the focus of their study was a hot spots policing program not limited solely to disorder reduction approaches, this outcome still raises important questions about possible "backfire" effects of broken windows policing targeted at small hot spots. If fear increases with police efforts to reduce disorder, then broken windows policing may not have the crime reduction effects that have been posited.

However, on the other hand, there is some evidence that residents in crime hot spots that are subject to focused police attention welcome the concentration of police efforts in problem places (e.g. Chermak, McGarrell, & Weiss, 2001; McGarrell, Chermak, & Weis, 1999). A study linked to the Kansas City Gun Project (Sherman & Rogan 1995b) found that the community

strongly supported the intensive patrols and perceived an improvement in the quality of life in the treatment neighborhood (Shaw, 1995).

Aim of the Current Study

As our review suggests, despite evidence of the effectiveness of disorder policing at hot spots and hot spots policing tactics more generally in reducing crime, there is growing concern over the potential for "backfire" effects to emerge when bringing a significant increase in police presence and activity to small hot spots of crime and disorder. While it has long been assumed that police action in cleaning up problem areas would have positive impacts for targeted communities, the actual impact of these tactics on outcomes other than crime and disorder has seldom been examined in the hot spots policing literature. While it makes intuitive sense that police becoming more active in reducing crime and disorder would make residents feel safer, and improve opinions of the police, these are merely assumptions that have largely gone untested.

Thus a growing chorus of concerns has arisen in recent years speaking to the need to test these assumptions. Does hot spots policing improve opinions of the police as residents see them as being more active in keeping their communities safe? Or are Rosenbaum (2006) and others correct in their concerns that increased police focus on small areas could backfire and undermine the legitimacy of the police as residents begin to feel like targets rather than partners of the police in crime prevention efforts? Similarly, does the tactic make residents feel safer as they see the police around more often and see crime and disorder declining? Or is fear increased due to the stigma of the "hot spot" label (Rosenbaum, 2006) or because the increased police presence sends a signal to residents that crime must be increasing, as in their minds there must be some reason for the cops to be around so often all of a sudden (Hinkle & Weisburd, 2008)? This latter

issue is a particularly key concern for hot spots strategies based on the broken windows logic, given the centrality of reducing fear of crime among residents in the crime prevention mechanisms of the broken windows thesis (Wilson & Kelling, 1982).

The current study was designed specifically to address these issues through a block randomized experimental evaluation of a hot spots policing crackdown on disorder in three cities in the San Bernardino Valley area of California. Specifically, the project tests the impact of a broken windows policing approach upon 110 street segments (divided equally into treatment and control locations) that evidenced relatively high levels of crime and disorder for these cities. The study examines the impact of a six-month broken windows style policing crackdown on disorder on residents of the targeted areas, in response to recent concerns that such increases in police presence and activity in hot spots may have negative consequences for the community. By design, the police intervention did not involve any partnerships with the community as the aim of the study was to directly test the impact of heightened police presence and activity in microplace hot spots on residents, and we thus did not want to bias these tests by including elements of community-oriented policing. Specifically, we examine the impact of the police intervention on residents' reports of police legitimacy, levels of fear of crime, collective efficacy, and perceptions of crime and disorder problems. These items were measured though a panel survey of residents and businesses in the study street segments, in which the same respondents were interviewed both before and after the police intervention. This allows for a powerful test of within-individual change in these outcomes of interest. The impact of the intervention on crime and disorder as measured through official police data is also examined. However, as this was not the main concern of our study, the statistical power of these tests is rather low (as we will discuss

in Chapter 2). The study was designed specifically to provide a powerful test of the individual-level outcomes of interest rather than aggregate-level crime and disorder counts.

The main concern of the current study is the impacts of broken windows style policing strategies on residents living in the targeted hot spots. The broken windows model is based on an assumption that policing efforts will reduce citizen fear and increase their engagement in informal social control activities in the community. However, as noted above, a number of scholars have raised the question of whether geographically targeted policing efforts will heighten citizen fear of crime or otherwise impact negatively on areas that are targeted (Braga, 2001; Hinkle & Weisburd, 2008; Rosenbaum, 2006; Weisburd, 2004; Weisburd & Braga, 2003). Importantly, even if broken windows policing actually reduces disorder, it would be unlikely to lead to the expected long-term benefits that broken windows policing theorists have predicted if the critics are correct in their hypotheses about backfire effects from focused policing efforts. For instance, it does little good to attempt to reduce fear by cleaning up disorder if the methods used to fight incivilities somehow increase fear itself. Additionally, problems can arise if intensive crackdowns undermine police legitimacy in the target areas. The broken windows thesis suggests that police must work with citizens to clean up disorder and establish norms of behavior. This is a challenge in itself, and will only be that much more difficult if the disorder clean-up efforts of the police are eroding their relationships with the communities in targeted hot spots. As such, the present study also examines the impact of broken windows policing on opinions of the police in the study areas.

In sum, the current study aims to answer the following questions about broken windows policing at hot spots:

1. What is the impact of broken windows policing on fear of crime among residents of the targeted hot spots?

2. What is the impact of broken windows policing on police legitimacy in the targeted hot spots?

3. What is the impact of broken windows policing on reports of collective efficacy in the targeted hot spots?

4. Is broken windows policing at hot spots effective in reducing both actual and perceived levels of disorder and crime in the targeted hot spots?

The design of the current study provides a unique opportunity to test these questions that are central to the efficacy of broken windows policing in particular, and hot spots policing more generally. In particular, two elements of the research design add to the study's power to answer these research questions. First, the study utilizes a micro-place research design featuring the street segment as the unit of analysis. Research has increasing argued in recent years that such micro-place units of analysis are most appropriate for studies of crime (Appleyard, 1981; Eck & Weisburd, 1995; Jacobs, 1961; Smith, Frazee, & Davidson, 2000; Taylor, 1997; Weisburd et al., 2004). The street segment is a particularly useful unit of analysis for the current study, as the relationships hypothesized by Wilson and Kelling (1982) seem most likely to operate at the micro-place level. For instance, it seems reasonable that people will be more likely to be aware of disorder and crime occurring on the street segment on which they live compared to other areas of the neighborhood or city. In turn, these micro-level perceptions of disorder should have the strongest impact on residents' levels of fear. The same holds true for any positive or negative impacts of heightened police activity on outcomes such as fear or police legitimacy as residents are more likely to notice changes in police tactics in the area where they live, versus a larger, more ambiguous geographic unit.

This micro-place design is also important as studies have found that even in high crime and disorder areas not all street segments are plagued by such problems (Groff, Weisburd &

Morris, 2009; St. Jean, 2007; Weisburd & Green, 1994; Weisburd & Morris, 2009; Weisburd, Morris & Groff, 2009; Weisburd et al., 2004). Thus a study using a larger unit of analysis such as neighborhoods would likely have the problem of some residents in a high disorder neighborhood perceiving little or no disorder. While this may seem illogical as they live in a high crime neighborhood, such a finding may simply be reflective of the fact that the person lives on a relatively low crime street segment nested within a high crime neighborhood. The unit of analysis is also advantageous for measures of fear of crime and collective efficacy as the street segment where a person lives is likely to have the largest impact on shaping residents' rating of these phenomena as well. For instance, it seems that an individual would have a firmer opinion on how likely neighbors on their street (who they have more regular personal contact with) are to intervene for the common good than people in a larger and more ambiguous unit of analysis such a neighborhood or community or census tract.

A second key benefit to the current study is the utilization of a telephone survey with a panel design in which the same respondents were interviewed before and after the police intervention to gauge their perceptions of the levels of crime and disorder on their street segment, their levels of fear of crime/perceived safety, collective efficacy and a host of questions relating to residents' opinions of the police. This design allows for an examination of whether the police crackdown on disorder and crime in the target areas led to changes in these variables at the individual level. In particular, interviewing the same respondents allows for a test of within-individual change in the outcomes of interest from pre- to post-intervention. This is crucial as it represents the first study directly designed to test for potential backfire effects of hot spots policing efforts on residents of the targeted areas.

In sum, the current study uses a micro-place unit of analysis and panel survey data to shed some light on our understanding of a police strategy which has had a tremendous impact on policing tactics around the globe, but has unfortunately not received the same level of empirical research attention. Directly examining the impact of broken windows policing tactics at hot spots on residents' fear of crime, collective efficacy and reports of police legitimacy, will answer key questions about whether the tactic can achieve its goals of reducing disorder, making residents feel safer and empowering them to take back the streets and exert informal social control.

The remainder of this report is organized as follows. Chapter 2 outlines the selection of study sites in the current study, and also presents the demographics of the study sites. Chapter 3 details the data collection methodology, and provides details on variable construction as well as presenting descriptive statistics for the variables of interest. Chapter 4 describes the design of the broken windows policing intervention and examines its implementation over the study period. Chapter 5 presents the quantitative findings of the current study. Finally, Chapter 6 provides a discussion of the findings and what they mean for broken windows policing, outlines the limitations of the current study, and makes suggestions for future research on the topics of hot spots and broken windows policing and focuses on the remaining need for more study of how police tactics may impact law-abiding residents of affected areas.

Chapter 2- Description of the Study Cities and Street Segment Selection Process

This chapter outlines how the study sites, and study street segments within them, were selected for inclusion in the current study. The first step of the process was to find city police departments who were willing to participate in the experiment. One of the keys to a successful policing experiment is partnering with police agencies that understand and are committed to the importance of research in shaping police activities. If the agencies, and particularly the police chiefs, do not understand the value of randomized experimental evaluations and the importance of sticking to the designed protocols such studies are doomed to fail. As such, the choice of cities in which to conduct a randomized experimental evaluation of broken windows policing led us to Redlands, California. Chief James Bueermann of the Redlands Police department has a history of interest in and commitment to randomized experiments in policing.

One drawback encountered during the initial development of the original project was the realization that Redlands was too small a city to produce enough sites with crime and disorder problems that were not right on top of each other[3] to allow for the design of a statistically powerful (Cohen, 1988) test of broken windows policing. In our efforts to solve this problem, it was decided to attempt add other cities in the neighboring San Bernardino Valley area to the study. Through Chief Bueermann's efforts, two additional cities—Ontario and Colton—were added to the study. This both solved the sample size issue, and also added to the generalizability of the study by providing sites that represent three mid-sized cities located in the Los Angeles metropolitan area that vary in size and other characteristics as outlined in the descriptions below.

[3] As will be covered in more detail below, it was deemed crucial that street segments in the study be isolated from each other by at least one block in every direction in order to prevent treatment contamination in the control sites.

Study Sites

Redlands: Located on the San Bernardino County border with Los Angeles County, Redlands is a suburb 63 miles east of Los Angeles and 110 miles to the north of San Diego. Redlands has a predominantly white (approximately 74 percent--Census, 2000) population of approximately 70,145 people (Uniform Crime Report, 2005) that sprawls across approximately 36 square miles. As of the 2000 Census, the median income for a household in the city was $48,155, and 10.5 percent of the population was below the poverty line. The 2005 Uniform Crime Report (UCR) showed that Redlands experienced 310 Part I violent offenses and 2,799 Part I property offenses during the 2005 calendar year. The Redlands Police Department has a strength of approximately 78 sworn officers, 77 civilian employees, 102 volunteers, and a 50 member Civilian Volunteers group with 25 patrol cars, 15 unmarked cars, numerous other vehicles, and four community policing substations. As noted above, the police chief in Redlands, James Bueermann, is an important national leader in innovation in policing, and Redlands has been the site of a number of Department of Justice studies.

Colton: Situated 56 miles east of Los Angeles, and approximately 9 miles west of Redlands, Colton is the site of Colton Crossing, one of the busiest at-grade railroad crossings in the United States. According to the 2005 UCR report, there were 51,723 people residing in the city of approximately 16 square miles. From the 2000 Census, 61 percent of the population was Hispanic or Latino of any race. In 2000, the median household income was $35,777, and 19.6 percent of the population was below the poverty line. The 2005 UCR report shows that Colton experienced 267 Part I violent offenses and 1,941 Part I property offenses during the 2005 calendar year. Under the leadership of Chief Bob Miller, the Colton police department employs 74 sworn officers including five county funded positions (ARMC) and one school resource

officer funded by the school system. The Colton Police Department also employs over 40 civilians and well over 200 adult and teen volunteers.

Ontario: Ontario is one of California's first planned communities (http://www.ci.ontario.ca.us/) and is located 36 miles east of Los Angeles and 28 miles northeast of Anaheim. The city spans an area of 50 square miles and is the home of the LA/Ontario International Airport and Ontario Mills shopping mall, the largest mall in Southern California and one of the largest in North America. Sixty percent of Ontario's 171,186 residents (UCR, 2005) are Hispanic or Latino of any race. Demographically Ontario is a very young city with a median age of 27.6 years; less than 12 percent of the population is over age 55 (Census, 2000). As of the Census of 2000, the median household income was $42,452, and 15.5 percent of the population was below the poverty line. Ontario is one of Southern California's fastest growing cities and with the substantial residential development, it is anticipated that the population will grow by 100,000 by 2020. The 2005 UCR report showed that Ontario experienced 866 Part I violent offenses and 6,744 Part I property offenses during the 2005 calendar year. Police Chief Jim Doyle is a career officer with the Ontario Police Department; he began as a police cadet in 1973, and was promoted to Chief of Police in 2004.[4] The Ontario Police Department employs 218 sworn officers and approximately 100 civilians (UCR, 2005).

Unit of Analysis

While the unit of analysis for many measures in this study is the individual, the questions regarding perceptions of disorder and crime, fear and collective efficacy on the survey ask the respondents to bound their responses to the street segment they live on (see Chapter 4 for details on data collection and measurement of variables of interest). For example, questions regarding

[4] Chief Doyle retired in July 2009. Eric Hopley became Ontario's new chief of police on July 5, 2009.

perceptions of disorder asked respondents how often they thought various types of disorder occurred on their street segment. Additionally, measures of crime and disorder from official police data were aggregated to the street-segment level.

The street segment (sometimes referred to as a street block in other studies) is defined as the two block faces on both sides of a street (excluding both of the intersections that are connected to the street block). As Weisburd et al. (2004) note, the street segment has long been seen as a key organizing unit within cities (Appleyard, 1981; Jacobs, 1961; Smith et al., 2000; Taylor, 1997). Taylor (1997) pointed out a number of characteristics of street blocks that make them a useful unit of analysis for social research (see also Hunter & Baumer, 1982; Taylor, Gottfredson, & Brower, 1984; Weisburd et al., 2004). He argued that street blocks are unique compared to larger units of analysis for the following reasons. First, residents see and get to know each other on the blocks on which they live. Second, residents of a block have interrelated role obligations. Third, norms about acceptable and unacceptable behavior are generally shared on blocks. Fourth, blocks have regularly recurring rhythms of activity. Fifth, blocks are isolated from impacts of events on neighboring blocks due to physical boundaries; thus events on a block have the strongest impacts on residents of that specific block. Finally, blocks have unique histories (i.e. as residential or commercial blocks or a change from one to the other and so forth) which impact events within their borders.

All of these factors outlined by Taylor (1997) make the street segment the appropriate unit of analysis for the current study's examination of the impact of a broken windows style police crackdown on disorder on resident fear of crime, perceptions of crime and disorder, collective efficacy and police legitimacy. From the above discussion, residents' experiences on the street segments where they reside, versus some larger geographic unit of analysis such as

neighborhood, should have the largest and most relevant impact on their levels of fear of crime and the other variables of interest. In turn, the street segment represents a target area that is easy for the police to identify and is a natural unit for focusing police activities.

Selection of Study Street Segments within the Three Cities

Selection Criteria

Having the study cities selected and on board for the experiment, the next step was to develop protocols for selecting specific street segments for inclusion in the study. Based on the size of the cities, and agreements from the three police chiefs on how many sites they could consistently deliver a broken windows policing program to over a six-month period, we came to the following goals for maximum numbers of street segments to be included in the study in each city: 80 in Ontario, 60 in Redlands and 40 in Colton for a maximum of 180 street segments. However, various limitations to be discussed below resulted in a final sample of 110 segments across the three cities.

The first step in choosing study sites was to develop selection criteria to generate a pool of potential study street segments. After discussions with the police chiefs, the following selection criteria were decided upon. First, that the street segment evidence enough emergency calls for service for disorder[5] to identify the site as needing intervention; second, that the street segment also show some degree of serious crime as illustrated by reports of Part I offenses; [6] and

[5] For the selection process, disorder was defined to include all calls for service for prostitution, drug possession, disturbing the peace, vandalism, public drinking, misdemeanor DUI, noise complaints, fights, and thefts from automobiles. We use a different measure of disorder in our analyses in this study, as we decided that DUI, fights and automobile burglaries didn't fit with Wilson and Kelling's (1982) concept of disorder. However, for selecting the study sites, they were considered as good proxies as places with such problems were deemed likely to also have issues with other types of social disorder (loitering, panhandling, vagrancy etc.) that do not tend to generate many police calls for service.

[6] Part I crime included the FBI defined Part I offenses, excluding thefts from autos which were included as disorder. In talking with the representatives of the Redlands Police Department we learned that they considered such offenses

third, that the study sites be distant enough one from another to reduce the risk of possible contamination of treatment into control sites.

In discussions with the police agencies, they suggested that a threshold of 10 or more disorder calls and three or more UCR Part I crime calls in a year would be reasonable for the purposes of the experiment. This number is based on the assumption that calls to the police only represent a small part of the crime and disorder problems in the areas affected We felt these levels of emergency calls for service for disorder and crime at the street-segment level in normal operations in these small cities would indicate places deserving of special police attention.

The third criterion is a result of the fact that many street segments with disorder problems are likely to cluster in the same areas. This creates a significant possibility for contamination of treatment and control sites within each department. Contamination may come from the overlap of treatment to a nearby control site, or from displacement of disorder, or diffusion of crime control benefits (Clarke & Weisburd, 1994; Weisburd et al., 2006). To deal with this limitation, we made a rule that required final study segments to be separated by at least one full street segment in all directions. This meant that our sampling frame had to start with a large number of sites that met a minimal threshold for disorder and crime (criteria 1 and 2), which could then be examined to identify an optimal geographic distribution of sites to minimize possible contamination.

A fourth criterion was added during the initial site selection process. As much of this study is dependent on having quality survey data, it was crucial to have a large sample of phone numbers to call so that all segments in the study had enough phone numbers in the sample to ensure that we obtained completed surveys from every street segment in the study. Initial

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to be disorder/minor crime as they generally just anger residents and largely go unsolved and do not get much police attention. When it came time for analysis, we decided this was a mistake and that vehicle burglaries were better classified as crime.

analyses of the PowerFinder reverse telephone directory program from InfoUSA revealed that many street segments had very few phone numbers present.[7] As such we added an additional selection criteria that a segment must have at least seven phone numbers present in the PowerFinder database to be eligible for inclusion as a study site. Finally, a handful of segments were excluded for having problems such as extending beyond city limits, changing names before an intersection, having different names on each side of the street and so forth as these created issues with police jurisdiction and getting accurate crime data for these street segments.

Selection Process

After lists of eligible segments meeting the criteria above were compiled in each city the eligible sites were mapped in ArcView. These maps were used to manually select the "best" sites possible while enforcing the rule that all sites in the final sample must be isolated from each other by at least one full segment in every direction. Many segments were clustered together, as expected due to the well known fact of crime and disorder clustering in "hot spots" (Sherman & Weisburd, 1995) within certain areas within cities. In such cases, every effort was made to retain the street segments with the highest number of crime and disorder calls for service, as these places would be the best candidates for a broken windows policing intervention. In the cases of two or more clustered street segments having similar levels of crime and disorder problems the number of phones present in the PowerFinder data was used as a tie breaker, due to the importance of being able to obtain survey responses from each segment.

Once a final list of eligible segments in a city that met the one segment buffer criterion was generated, members of the research team conducted site visits with a city police officer.

[7] In Redlands and Colton we were able to obtain an additional source of phone numbers from the cities' water departments. This will be detailed further in the discussion of the data in Chapter 3.

These visits served two purposes. Firstly, they allowed sites that met the selection criteria but in actuality were not good sites for a broken windows style intervention or were not ideal for our survey to be weeded out. The former were sites where the officers did not feel there were enough problems to warrant the intervention and suggested that the crime and disorder counts may have been inflated due to miscoding of events. In other words, in some cases the line officers' experiences led them to advise that some street segments were not problematic enough to warrant receiving a police crackdown on disorder. The latter issue involved street segments that only contained large chain businesses such as Target. These are problematic as piloting of the survey among businesses in a city removed from the study area revealed that these chain franchises largely have policies of not participating in any surveys. As such, street segments that only contain such businesses would likely be dropped from analyses anyway due to having no survey data (or very few responses). In such cases attempts were made to find replacement segments for the sites that were excluded for these reasons.

Secondly, the site visits allowed us to record the physical address ranges on each street segment, which proved invaluable in identifying our survey sample (see Chapter 3). Having outlined the selection criteria and process, the following section describes the specifics of the selection process in each of the three cities. The section will also present basic descriptive statistics on the level of crime and disorder problems among the final sample of street segments in each city. The crime and disorder data presented below covers the period of July 1, 2006 through June 30, 2007.

Selection of Redlands' Study Sites

In Redlands there were 78 segments which met the initial eligibility criterion of having 10 or more disorder calls for service and three or more UCR part 1 crime calls in the prior year,

as well as having seven or more phone numbers present in the PowerFinder data. These segments were mapped in ArcView, and enforcing the one segment buffer criterion as outlined above left 50 segments eligible for inclusion in the study. Site visits and further analysis led to the exclusion of 10 of these segments for reasons such as being flagged by the police as not being a problematic street segment, containing all or mostly chain stores, segments that changed street names, geocoding errors which led to one segment being right on top of another site with higher crime problems, and segments containing only/mostly medical offices and/or hospitals.

The next step was to see if there were any replacements for these excluded segments among other eligible sites that were previously dropped during the enforcement of the one segment buffer rule. Two replacements were gained, putting the sample at 42 segments. However, during further site visits we realized that 14 of these 42 segments contained less than 100 addresses. This was problematic as the initial phone number estimates in Redlands were obtained by counting all phone numbers in the PowerFinder database within 100 blocks as we were informed that most of the city was on the 100 block scheme (i.e. 100 E State Street should contain addresses ranging from 100-199). This caused problems as it was found that 14 of the included segments did not follow the 100 block scheme, and when using the actual address ranges obtained during the site visits to recount the number of phones it was found that seven of these 14 sites no longer met the threshold of having seven or more phone numbers present in the data. This dropped the sample from 42 to 35.

One replacement street segment dropped during the buffer phase of site selection was available with the removal of these seven sites, bringing the sample for the pre-intervention survey collection to 36 street segments in Redlands. Finally, after collecting the pre-intervention survey five sites were dropped for having fewer than three surveys collected (see next chapter for

more on the survey collection process) and one segment with only three completed interviews was dropped to give a balanced design, leaving a final sample of 30 street segments in Redlands. This is well short of our initial goal of obtaining 60 segments in Redlands. This is because we were overly optimistic of how many segments would remain after the one segment buffer criterion was enforced, and we did not anticipate needing the minimum phone number threshold, which cut the initial pool of eligible segments down. As will be seen later in this chapter, the same occurred in the other cities but we were still able to obtain a large enough sample to have sufficient statistical power for the tests of the main hypotheses of the experiment.

It is important to note that Redlands was the first city where site selection was conducted. As such, our experience there led us to base the initial phone counts used to select segments which met the criteria of having seven or more numbers present in the PowerFinder data in the other two cities on the address ranges in the ArcView street layer files provided by the city police departments. While these were still not completely accurate, they were much more precise than assuming a 100 block scheme on every street segment, and using these address ranges lessened the problem of overestimating phone number counts in Ontario and Colton. Table 2.1 below presents descriptive statistics on the levels of crime and disorder among the 30 Redlands' street segments in the final sample.

Table 2.1: Descriptive statistics for Redlands Sample (N=30)

	Mean	Standard Deviation	Median	Minimum	Maximum
Disorder	25.87	17.20	19.00	10.00	80.00
Part I Crime	8.87	7.98	5.50	3.00	36.00

Selection of Ontario Study Sites

In Ontario, the largest of the three cities in the study, there were 197 street segments which met the initial selection criterion. Enforcing the one segment buffers and removing a few

problem segments (segments that changed street names, street segments that split in multiple directions and so forth) left 82 potentially eligible segments which received site visits. Seven sites were removed after the visits due to officer input and/or being places that only contained chain businesses. One segment was removed as the east side of the street was in the city of Chino, California. Finally three additional segments were removed as the actual address ranges were narrower than the ones in ArcView used to make the estimates of phone numbers present in the PowerFinder data. Using the actual, physical address ranges for these three segments dropped them below the minimum threshold of having seven or more phone numbers in the database. During this portion of the site selection process a total of 10 segments were lost and there were no eligible replacements available in Ontario.

Next, as with Redlands, we dropped sites with fewer than three completed pre-intervention telephone surveys, which removed an additional nine segments from the study. At this stage of the selection process an additional three street segments were also dropped as further discussion with the police revealed that these street segments did not appear to be ideal sites for a broken windows policing intervention. These three segments were not busy areas and police suspected that miscoding of calls may have led to their inclusion in the study. Thus the final sample in Ontario consists of 60 street segments, again falling short of the initial goal of 80 street segments. Table 2.2 below presents descriptive statistics on crime and disorder problems on these 60 street segments.

Table 2.2: Descriptive statistics for Ontario Sample (N=60)

	Mean	Standard Deviation	Median	Minimum	Maximum
Disorder	35.80	25.54	24.00	10.00	109.00
Part I Crime	17.23	14.83	12.00	3.00	72.00

Selection of Colton Study Sites

In Colton, the smallest of the three cities in the study, there were 32 street segments that met the initial eligibility criteria. Enforcing the one segment buffers and excluding the types of problem segments outlined above left 24 potentially eligible segments which then received site visits. Four segments were dropped after site visits for reasons such as having a different name on each side of the street or not having enough problems to warrant the intervention in the view of the police. There were no eligible replacements for any of these four segments, which left a sample of 20 segments in Colton, well short of the initial goal of 40. There were no segments with fewer than three completed interviews in the pre-intervention survey in Colton; thus these 20 segments comprised the final sample. Table 2.3 below shows the descriptive stats for the final sample in Colton.

Table 2.3: Descriptive statistics for Colton Sample (N=20)

	Mean	Standard Deviation	Median	Minimum	Maximum
Disorder	47.85	56.99	30.5	1	266
Part I Crime	12.75	16.68	6.5	3	78

Statistical Power

The site selection process left us with a total of 110 street segments in the final sample across all three cities. These data provided a unique chance to test the impacts of broken windows policing on citizens who live on targeted street segments. At the same time, the smaller size of the sample of street segments than anticipated and the overall large standard deviations in crime and disorder found, (see Tables 2.1-2.3) limited our ability to draw inferences concerning the impacts of the intervention on crime and disorder. For example, using the six month pre-intervention period of our study as a guide, the statistical power of the current study on crime and disorder outcomes is quite low.

As outlined above, our selection of study sites was based on one year of official crime data and required that sites have a minimum of three crime calls and 10 disorder calls. Overall, the sites had a mean of 14.1 crime calls and 35.3 disorder calls during the year of data used for site selection. For the cities we studied, these sites would be defined as "problem areas." Nonetheless, in larger, more densely populated metropolitan areas where many prior hot spots studies have been carried out these numbers are very modest.[8] The number of crime calls is even more modest taking into account the fact that our study is based on comparing six-month pre- and post-intervention periods. Using data from the six-month pre-intervention period shows that the overall observed mean number of crime calls for all sites during that period was 8.05 with a standard deviation of 6.62.[9] The mean number of disorder calls across all sites over this period was 14.48, with a standard deviation of 11.60.

Table 2.4 gives the post hoc statistical power of our study assuming specific reductions in disorder and crime in the target areas and no change in the control areas, using the observed pre-intervention means and standard deviations for each area. We assumed here traditional significance levels of .05 and two-tailed tests of significance. In general, scholars argue that a power level of .80 is required for a statistically powerful study (see Cohen, 1988).

[8] For example, in the Minneapolis Hot Spots experiment (Sherman and Weisburd, 1995), the mean number of crimes per hot spot was 355 during the baseline year.

[9] Two of the 110 blocks were excluded from all analyses of crime and disorder due to being extreme outliers—this is discussed in detail in Chapter 3. As such the means and standard deviations presented here reflect the exclusion of these two sites, as do the power analyses in Table 2.4.

Table 2.4—Statistical Power for Tests of Changes in Crime and Disorder Calls for Service

Control Areas: Pre crime mean:=7.83; Pre crime SD =6.06
Pre disorder mean=15.33; Pre disorder SD = 13.63

Target Areas: Pre crime mean = 8.36; Pre crime SD =7.18
Pre disorder mean=13.67; Pre-disorder SD =9.19

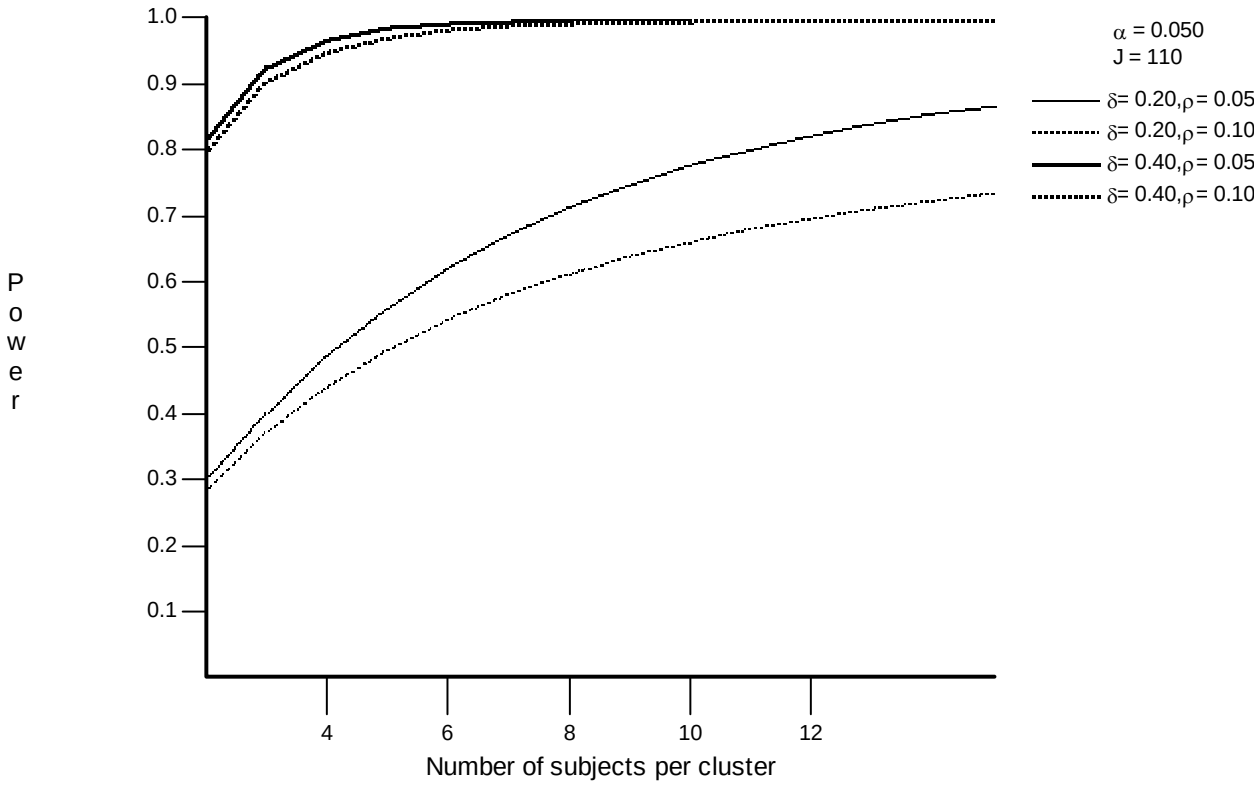
Assumed Crime Change in Treatment Areas	Statistical Power	Assumed Disorder Change in Treatment Areas	Statistical Power
-1	.07	-1	.22
-2	.23	-2	.37
-3	.52	-3	.54
-4	.80	-4	.71
-5	.95	-5	.84

As can be seen, relatively large absolute declines in crime or disorder calls are required to reach the .80 statistical power threshold. For example, assuming no change in the control area, a decline of four crime calls per site on average would be required—this would be a decline of 47.8% from the pre-intervention mean. For disorder a decline of five disorder calls per site on average is require to reach the 80 power level—a decline of 36.6% from the pre-intervention mean. As we will discuss in more detail in later chapters, the relatively low power levels for these comparisons do not allow us to draw strong conclusions regarding the effectiveness of the interventions in reducing crime and disorder at the street-segment level.

Importantly, however, as detailed in Chapter 1, our main interest is in the effects of intensive disorder interventions at hot spots on citizen attitudes. Because of the nature of our design which includes multiple subjects on each street segment, the power levels of our study are relatively high in the case of the survey responses which represent our main outcomes. Figure 2.1 illustrates the statistical power by number of respondents per street segment. As is apparent,

for what Cohen (1988) defines as moderate effect sizes (d=.50), with just four respondents per street segment the citizen attitudes study would have a power of greater than .90.

Figure 2.1: Statistical Power for Survey Variable Outcomes



Demographics of the Three Cities

In regards to city-level demographics, the three cities in this study offer a good deal of difference in terms of size, demographics and their levels of crime and disorder. Table 2.5 compares the three cities side by side. As the information in Table 2.5 indicates, the three cities in this study differ on several elements—especially when comparing Redlands to the other two cities. While Redlands is the second largest city in terms of square miles, it is much less densely

populated than the other two. Additionally, Redlands has a majority white population, while the other two cities are majority Hispanics of any race.

Also notable is that residents in Redlands differ in socio-economic status compared to those in the other two cities with a median income nearly $3,000 greater than that in Ontario and over $7,000 greater than the median income in Colton, which is the poorest of the study sites with 19.5 percent of its population living below the poverty line. In terms of crime rates, the cities are fairly comparable. Redlands has a slightly lower violent crime rate than the other two cities, while Colton's property crime rate is slightly lower. Finally, in terms of the actual street segments in the study we see that Redlands has lower disorder and crime counts (based on median) compared to the other two cities. The Colton sites have the highest median amount of disorder, while the Ontario study sites have the highest median amount of Part I crime.

Table 2.5: Comparing the Three Cities[10]

	Redlands	Ontario	Colton
Population	70,145	171,186	51,723
Square Miles	36	50	16
Population Density[11]	1,948.47	3,423.72	3,232.68
Median Income	$48,155	$42,452	$35,777
Percent Below Poverty Line	10.5%	15.5%	19.6%
Percent White	73.7%	47.8%	42.7%
Percent Hispanic (any race)	24.1%	59.9%	60.7%
Percent Black	4.3%	7.5%	11.0%
2005 UCR Part I Violent Crime Rate (per 100,000)	441.94	505.88	516.21
2005 UCR Part I Property Crime Rate (per 100,000)	3990.31	3939.57	3752.68
Median Crime per Study Segment	5.5	12	6.5
Median Disorder per Study Segment	19	24	30.5

[10] Population and 2005 Part I offenses are from the 2005 Uniform Crime Report. Median Income, Percent below Poverty Line and the Race variables are from the 2000 Census. The Crime and Disorder means are from the street-segment level data provided by the Redlands, Ontario and Colton Police Departments.
[11] Population Density is simply the city's population divided by its square mileage.

The Overall Sample and External Validity

As outlined above, the sampling process led to a final sample of 110 street segments across the three cities that vary greatly in levels of crime and disorder. It is important to note that this is not a random sample, but rather a systematic sample designed to gain the largest possible number of sites in these three cities which contained sufficient crime and disorder problems to warrant receiving the broken windows policing intervention during the original study. The pool of eligible segments were selected on the thresholds listed above (10+ disorders, 3+ Part I crimes and 7+ total phones) and the final sample was selected by systematically selecting the highest disorder and crime segments when enforcing the one segment buffer rule to prevent treatment contamination.

As such, this sample cannot be viewed as representative of all areas in these cities. Rather it can be viewed as representative of all areas with relatively high disorder and crime problems in these cities. While having a more representative sample is desirable, this is not a major weakness for the current study. For instance, testing the impacts of perceived disorder on fear of crime and collective efficacy requires having a sample of people who live in areas in which there is disorder present. As noted, all street segments in this sample have a minimum of 10 disorder calls for service in the year of data examined and a maximum of 266. Thus the sample of segments selected largely on their level of disorder may be viewed as an appropriate sample for testing the impacts of perceptions of disorder on other key variables in the broken windows thesis.

Another issue with the sampling important to consider is whether enforcing the buffer rule left a sample representative of the initial pool of segments which met the selection criteria. It is possible, for instance, that selecting based on disorder and crime levels when enforcing the

one segment buffer rule may have resulted in getting just the "worst of the worst" from the initial pool. However, this should be limited by the fact that many of the lower disorder segments in the initial pool were more isolated and thus were likely to stay in the sample simply because there were no other eligible segments within a few segments of them. High disorder segments tended to be more clustered and thus were more likely to be left out of the final sample. Thus while the final sample is likely to exhibit higher levels of crime and disorder compared to sites excluded while enforcing the buffer rule, the differences should not be of great concern. Table 2.6 below compares the crime and disorder levels in the final sample to those in the segments from the initial pool that were excluded from the final sample.

Table 2.6: Comparing the Final Sample (N=110) to the Excluded Eligible Street Segments (N=197)

	Final Sample Mean	Excluded Segments Mean	Mean Difference	T-Statistic (p-value)
Disorder	35.28	27.60	7.68	2.51 (.013)*
Part I Crime	14.14	11.77	2.37	1.40 (.162)

* = significant at the .05 level
** = significant at the .01 level

The descriptive statistics presented in Table 2.6 fit the expectations outlined above. Overall, the sites in the final sample have higher levels of disorder and crime problems due to the nature of the selection process which favored street segments with higher levels of these problems. The difference in disorder is statistically significant, while the difference in crime is not. However, the differences are not enormous, especially when looking at the median rather than the means. The final sample's median disorder is 4.00 incidents higher than the eligible segments that were left out, while its median for Part I crimes is 1.50 incidents higher. As such, the final sample can be viewed as fairly representative of the population of street segments with crime and disorder problems in these three cities. However, when interpreting the findings of this study, it is nevertheless important to keep in mind that it is a sample of high disorder and

crime street segments in three cities, and thus the findings are not generalizable to all street segments in these cities.

The Randomization Process

After the final study street segments were selected for the experiment, the final step was to randomly assign the street segments into treatment and control groups. Segments in the treatment group were to receive a six-month broken windows policing intervention, while the control groups were simply to receive their normal level of police services over this period. A block-randomized design was used, in which street segments within each city were randomized separately, with half of their study street segments being placed in the treatment groups and the other half as controls.

The randomization was done in SPSS in a separate file for each city. Each case was assigned a random number, and the file was then sorted by this random number. Finally, the random selection feature in SPSS was used to select 50 percent of the cases, which were designated as the treatment group. The 50 percent of cases which were not selected were designated as the control group. Table 2.7 below compares the overall treatment sites to the overall study sites on crime and disorder. The results show that the control sites have slightly higher levels of disorder and crime than the treatment sites, but the differences are not statistically significant.

Table2.7: Comparing the Treatment Sites (N=55) to the Control Sites (N=55)

	Treatment Mean	**Control Mean**	**Mean Difference**	**T-Statistic (P-value)**
Disorder	33.00	37.56	-4.56	-.737 (.463)
Part I Crime	13.78	14.49	-0.71	0.263 (.793)

* = significant at the .05 level ** = significant at the .01 level

Summary

In sum, the sample selection process led to final sample of 110 segments with disorder and crime problems across three cities that vary a good deal in size and demographics. This variation, along with the micro-level unit of analysis allows for a unique opportunity to test the impacts of broken windows policing on citizen attitudes. The only caveat of the sample is that the study design required a sampling of high crime and disorder street segments, rather than a random sample of segments in the three cities. As such, the findings of this study should only be generalized to areas with sufficient levels of disorder and crime. This is not a major drawback as broken windows policing can be viewed as most applicable in areas with at least some minimal level of disorder and crime.

Chapter 3- Data Collection Methodology and Variable Creation

A wealth of data on disorder, crime, fear of crime, collective efficacy, police legitimacy, and individual demographics were collected during the current study. The main data source used in this study is a survey administered to residents and business owners/managers/supervisors who lived or worked on the study street segments. The survey was given both before and after the police intervention in the target street segments, and a panel design was used which attempted to interview the same respondents at both time points to allow for an examination of change in variables of interest at the individual level. Official crime data were also collected from the participating police agencies, though as noted in Chapter 2 we can only draw very limited inferences from these data. This chapter outlines the data collection methodology for the survey, and details how these data, as well as the police crime data, were used in this study. Descriptive statistics for the data are also presented.

Resident and Business Survey Data Collection Methodology

The primary data analyzed in this study come from telephone surveys. The surveys were administered in two waves, one immediately before the police intervention and one immediately afterward. The first wave was collected from early March through early June 2008.[12] The second wave began immediately after the end of the police intervention in mid-January 2009 and ran through April. Businesses and residences on the study street segments were surveyed, and those respondents who completed the pre-intervention survey formed the sample for the post-intervention survey. The methodologies for selecting the survey sample and collecting the telephone surveys are outlined in detail below.

[12] The survey was first piloted in a city removed from the study. All interviewers were required to satisfactorily complete pilot shifts before calling respondents in the study sample.

Pre-Intervention Survey Sampling Methodology

The pre-intervention survey design called for interviewing both residential and commercial addresses. For residential addresses the first person over 18 in a household willing to participate in the survey was interviewed, while for businesses the interviewers asked to speak with the owner/manager. If the owner/manager was never around, the interviewers asked to speak with the person on site who was in charge of day-to-day operations. The experiment used the street segment as the unit of analysis, and it was important to have a sufficient sample within each street segment. The initial goal of the experiment was to obtain 10 completed surveys per street segment in the study. As will be detailed below, it proved impossible to obtain 10 responses on every segment, and the study ended up settling on a criterion of three or more responses per segment for it to remain in the study as outlined in the site selection chapter. The section below details how the survey sample was selected and how the surveys were collected.

The initial sample for the telephone survey was pulled from the PowerFinder software provided by InfoUSA. This software is an extensive reverse telephone directory, and it allowed us to pull out all the phone numbers present in the data for our study street segments by selecting all addresses that were within the address ranges for these segments. All cases on every segment were then exported into a database with one file for each of the 110 street segments. Again, this included both residential numbers and business numbers in our sample. This file was then randomly sorted in SPSS and the first 30 cases were to be the initial, released sample for the survey on each segment. However, we discovered that on many segments we had far fewer than 10 phone numbers present in the data, which would obviously make it impossible to reach our initial goal of 10 completed surveys per street segment. This led us to seek out an additional source of phone numbers to sample, in the hopes that we could obtain phone numbers for some

additional households on these street segments which were not listed in the PowerFinder database.

One of the police chiefs recommended getting a list of phone numbers between our address ranges from the city water departments. We chose to pursue this route, and did obtain data from the water departments in Redlands and Colton. However, obtaining this data took longer than expected, and we were forced to start collecting surveys in Redlands before acquiring the water data, to avoid further delaying the start date of the broken windows policing program. This complicated our sampling strategy in Redlands as we could no longer just randomly take the first 30 cases on each street segment—ideally we would have first merged the water data and the PowerFinder data to create a database containing all the unique phone numbers from each source. Then we could have simply randomly sorted the file and released the first 30 cases on each street segment into the initial sample. As this was not an option, we used the following strategy in Redlands to approximate a random sample from both data sources.

1. We released the first 12 cases on each segment in Redlands from the randomly sorted PowerFinder files for each segment to allow the survey to get started in order to avoid having to delay the start of the police intervention.

2. Once we obtained the water data, we used the following strategy to attempt to approximate a random sample from both sources. The goal was to get the final sample to closely resemble what we would have randomly obtained if we had been able to combine the two data sources together at the outset and pull 30 cases at random from the full database.

    a. The first step was to pull an equal percentage of cases from the water data by randomly selecting the same percentage we had pulled from the PowerFinder data in step 1. For instance, if a street segment had 24 numbers present in the PowerFinder data, taking 12 of them in step 1 meant we took 50 percent of that data for the initial sample. As such, we would then take 50 percent of the unique numbers from the water data on that sample, and add it to the 12 cases already released into the sample from the PowerFinder data. For example, if there were 10 cases in the water data for this street segment, we randomly selected five cases and added them to the released sample, putting the released sample for that street segment up to 17 cases total.

b. The next step was to fill out the initial sample to the maximum of 30 per street segment. In the above example, the sample would be composed of 17 cases—12 from the PowerFinder data, and the five from the water data. To get the additional 13 cases needed to fill out the sample for this segment, we combined the remaining PowerFinder and water data into one database, randomly sorted it and released the first 13 cases. If fewer than 13 cases had been available, randomization would not have been required as all cases would be released into the sample.

c. Finally, any remaining sample was saved in a reserve file, and these cases were to be released into the sample if the full 10 responses were not obtained from the 30 cases initially released.

While this is a complicated sampling strategy, we felt it was the best way to get as close as possible to a random sample from the PowerFinder and water databases in Redlands where we could not afford to wait until both data sources were in hand before beginning the survey. In Colton, we were able to wait on obtaining the water data and thus were able to merge the two data sources and simply randomly sort them and take the first 30 cases for each segment (or all cases for segments that had less than 30 cases total). In Ontario, we never obtained data from the water department, so we simply randomly sorted the PowerFinder data to take up to the first 30 cases, with the rest going in reserve files. This was not a major limitation as Ontario is much larger and more densely populated (see Chapter 2) than the other two cities, so we had many fewer problems with lack of phone numbers in the PowerFinder data compared to the other two cites.

Collecting the Surveys

The telephone surveys were collected by a team of undergraduate and graduate students at California State University, San Bernardino. These interviewers were trained by members of the research team, and were supervised by Dr. Christine Famega, who served as Project Field Supervisor for the experiment. Following the training, all of the interviewers worked two pilot

shifts calling residents and businesses in a city removed from the study area before being allowed to call any of the actual study sample cases.

When calling the study sample, eligible respondents were defined as the first person in a household over the age of 18 to agree to participate in the survey. For businesses the interviewers asked to speak to the owner or manager who was most often on the premises and responsible for supervising the day-to-day operations of the establishment. The pre-intervention telephone surveys began in early March 2008, and ran through early June 2008. As noted in the last chapter, at this point all segments with fewer than three completed surveys were dropped from the study. There were only two street segments with three completed surveys; all the other segments in the final sample had at least five responses to the pre-intervention survey. The surveys were completed in early June and the police intervention began on June 16, 2008. Overall a total of 836 responses were obtained on the final 110 street segments. Of these 836 completed surveys, 489 (58.5 percent) were residential surveys and 347 (41.5 percent) were business surveys. The 836 surveys accounted for a response rate of 38.4 percent for the pre-intervention surveys. The cooperation rate, which represented the ratio of completed surveys in sampled households where a member of the interview team spoke directly to a person and were refused or unable to complete the survey, was 46.1 percent.[13]

This cooperation rate, while lower than optimal, falls in the middle of the range for response/cooperation rates for recent telephone surveys in research on fear of crime (a key outcome in the current study). Specifically, a study using random digit dialing in the state of Kentucky had a response rate of 27.5% (Rader, May & Goodrum, 2007), a study of fear in Dallas neighborhoods had a response rate of 33.4% (Ferguson & Mindel, 2007), the study by Xu

[13] The cooperation rate excludes cases that were coded as chronic no answer/busy/answering machine (n= 307) and cases where there was a language (not an English or Spanish speaker) or cognitive barrier (N=59) from the denominator.

et al. (2005) had a rate of 60%, and a study in Philadelphia had a response rate of 77% (Wyant, 2008). It is worth noting that the Xu et al. data were collected by a police department (and respondents may be less likely to refuse a survey collected directly by the police) and the Wyant study involved a $10 monetary reward for respondents to encourage participation. In sum, the cooperation rate of 46.1% is relatively typical for recent phone surveys in the age of telemarketing, people screening their calls and people switching to only having unlisted cell phones and not having landlines.

The Post-Intervention Survey

As outlined above, a second wave of the survey was collected immediately following the end of the police intervention in January 2009 and ran through April. A new team of student interviewers were hired to conduct this wave of telephone surveys and were again trained by members of the research team and required to complete two pilot shifts before beginning work on the study sample. A panel design is used for this study, and as such the 836 respondents who completed the pre-intervention survey formed the sample for the post-intervention survey. All of the substantive questions in the post-intervention survey were identical in wording and question ordering to the pre-intervention survey. The final question on the pre-intervention survey asked for the first name of the person who had just completed the survey. For the post intervention surveys, interviewers began each telephone call requesting to speak to that person by name. If that person was temporarily unavailable, the interviewers explained they would call back at a later time and ended the call. If the pre-survey respondent no longer resided or worked at that address, interviewers ended their attempt to get a response from that household for calls made prior to February 25, 2009. Beginning on this date, for these cases interviewers asked if the

person who answered the phone was willing to take the survey. If the individual was willing, interviewers administered the survey, provided the individual had lived or worked at the address for 6 months. We adopted this strategy as a backup plan to collect the maximum number of surveys in case the overall responses from time one respondents ended up being extremely low. This strategy gave the option of going to a unit of analysis of households rather than individuals; however, in the end this did not prove necessary and only the data from the time 1 respondents are used in the current analyses.

In cases where the pre-survey respondent did not give a name and there was no one to ask for by name, interviewers asked the person who answered the phone if they remembered completing a survey about crime and disorder on their street segment six months earlier. If they did not recall taking the survey after February 25th the interviewer then asked if there was someone else at that number who may have completed the survey. Every attempt was made to try and complete the post survey with the same respondent as the pre survey. If no one at the address remembered completing the survey, but there was a willing respondent, interviewers administered the survey provided the individual had lived or worked at the address for 6 months. Interviewers noted on the survey whether the post survey respondent was the same person as the pre survey respondent and it was also noted in the data entry.

In all 496 completed post-intervention surveys were collected from the 836 household/business addresses which completed the pre-intervention surveys, representing an overall response rate of 59.3%. As noted we decided to not include the surveys completed with different respondents as the main advantage of our research design is being able to examine within individual changes after the police intervention by surveying the same respondents at two time points. Of the 496 post-intervention surveys, 389 were completed with the same person

who took the pre-intervention survey. The final N for survey analyses in the current study is 371 individuals who completed both waves of the survey, as 18 cases were lost during the missing value imputation process as they had too many missing values for the expectation maximization (EM) imputation procedures to be valid. This is discussed in detail below.

Imputation of Missing Values

Imputation of absent data was necessary as the analyses of survey data in the current study rely on scale measures which combine several items together. As such, a missing value on one survey question which is included in the scale leads to excluding that case from the analysis. As such, simply using listwise deletion would drastically cut our sample size. Thus it was decided to use EM imputation in SPSS to impute missing values. The vast majority of the absent data were from "I don't know" responses to questions, and a very small amount were refusals to answer certain questions. Although these types of responses are not in the true sense missing values, from an analytical standpoint these types of responses cannot be analyzed. As such they are treated as missing values in this study and for simplicity's sake all will be referred to as missing values in this discussion.

The first step of the imputation process, especially given that most of the missing values were "I don't know" responses, was to make sure the missing value patterns were not correlated with factors such as age, race and gender. An inspection of t-tests in the SPSS missing value pattern output showed that no item's missing responses was related to any of those demographic categories. Another possibility was that "I don't know" responses were more prevalent among those who had not lived on the street segments very long. This would be of concern as it would indicate that responses of "I don't know" could reflect a true lack of knowledge of the street. However, an inspection of the data revealed that this was not the case. "I don't know" responses

were distributed across people who had been there a relatively short time (the minimum for inclusion in the study was 6 months living or working on the segment) and people who had lived there a very long time.

Given that the "I don't know" responses are not related to demographics and do not appear to be tied to knowledge of the street (using time at residence as a proxy), it was deemed justifiable to treat them as missing values for the purposes of the analyses in this study. The following imputation process was carried out on the full database with all 484 cases with both pre- and post-intervention surveys completed by the household or business. The first step was to not include any survey questions missing more than 10% of cases in any of the scales to be analyzed in the study. This led to dropping questions Q3E and Q4C (both collective efficacy items) and Q14B (a police legitimacy question) from being used in the current scales and analyses. The next step was to drop any cases which were missing more than 20% of data points for either the pre or post intervention survey. This led to 17 of the total 484 cases being dropped. Finally, EM imputation was conducted in SPSS to impute missing values for the remaining 467 cases.

The imputed data very closely resembles the means and standard deviations obtained using listwise deletion (means only varied beyond the 3rd decimal place), giving confidence that the imputation process did not lead to any significant bias.[14] The benefit can be seen in sample size. For instance, for the pre survey only 230 cases had full data for all the questions of interest, and in the post only 240 had full data. With the imputation procedure we had a sample size of 467 in total, and 371 for the current analyses involving only cases where the same individual completed both the pre- and post-intervention surveys which is our final sample. Of these 205

[14] Tables with the means and standard deviations for survey items used in the current study for the imputed and non-imputed datasets are available in Appendix B.

(55.3%) were residential respondents, and 166 (44.7%) were business respondents. Table 3.1 below shows the demographics of the sample.

Table 3.1-Demographics of the Final Sample (N=371)

Variable	Mean
Age	44.4 (S.D.=12.83)
White	.37
Black	.05
Hispanic	.47
Asian	.05
Other Race	.06
Has Children	.57

From these demographics we see that our sample has a mean age of 44, is 47% Hispanic, 37% white, 5% black and 5% Asian. Fifty-seven percent of respondents have children under 18 living at home. As our breakdown of the study cities in Chapter 3 showed, our sample is unique in that it is predominantly Hispanic. This offers a unique look at broken windows policing as most prominent studies have tended to be conducted in large cities in the US Northeast, rather than smaller, predominantly Hispanic cities in the southwest.

Creation of Survey Variables

This section details how the scale variables were created, and presents descriptive statistics for these variables. As noted in earlier chapters, the primary concern of the current study is the impact of broken windows policing at hot spots on residents living in the targeted street segments. Did the intervention reduce perceptions of crime and disorder? Did the police action reduce fear of crime? What where the impacts on collective efficacy and police legitimacy? These are the questions of primary concern to the current study, and this section outlines the variables used to address these issues. All descriptive statistics, reliability coefficients etc. are from the dataset are based on the 371 cases where the same individual

completed both the pre- and post-intervention surveys with missing values imputed as described above.

Perceptions of Disorder

Lacking funding to do systematic social observations of disorder, the current study relies on resident's perceptions of social and physical disorder (along with police crime data detailed later in this chapter) to measure any changes in disorder after the police crackdown. Additionally, perceptions of disorder are key to the broken windows idea, as Wilson and Kelling (1982) suggested that untended disorder bothers residents, eventually making them fearful and can lead them to withdraw from the community. Thus the key is that residents are aware of disorder in their community, otherwise they cannot be troubled by it.

The survey (see Appendix A) included a series of questions related to perceptions of social and physical disorder on the respondent's street segments. The questions relating to perceptions of disorder and crime (questions 10 and 11) were patterned after those used in the Jersey City Displacement and Diffusion Study (Weisburd et al., 2006). The scales were created as follows.

Perceived Social Disorder included:

- -Fist fights
- -People loitering or being disorderly
- -Public drinking
- -People drunk or high in public
- -Panhandlers
- -Vandalism
- -People making too much noise late at night/early morning
- -Gambling in the street
- -Drug sales
- -Prostitution

Perceived Physical Disorder included:

-Homes or buildings with broken windows
-Homes or buildings with graffiti
-Abandoned or boarded up buildings
-Vacant lots
-Abandoned cars on the street
-Areas where litter is a problem
-Street or sidewalks in need of repairs
-Areas in need of better lighting

The perceived social disorder variable contains a series of items on the survey which asked residents to report how often the various types of social disorder outlined above occurred on their street segment (see question 10 in Appendix A). The question was asked as an ordinal variable with response options of: "once month or less," "a few times a month," "a few times a week," "everyday," or "not at all." The values were recoded from those shown in the survey so that the values ranged from zero for "not at all" responses to four for "everyday" responses.

The perceived physical disorder variable was created in a similar manner by including responses to the items in question 11 in Appendix A, which asked respondents to indicate the prevalence of various physical conditions on their street segment. They were given response options of "none," "a few" or "many" to indicate the prevalence of these physical disorder problems. Similar to the social disorder measure, the items were recoded to range from zero for "none" to two for "many." Both scales showed good reliability. For perceptions of social disorder the Cronbach's Alpha is .857 in the pre-survey and .872 in the post-survey. Perceptions of physical disorder showed reliability coefficients of .712 and .729 in the pre- and post-surveys respectively.

Perceived Crime

In addition to perceptions of disorder, part of question 10 on the survey also asked about perceptions of more serious crime on the residents' street segments. We used this data to create a scale which included:

-Cars being broken into
-Burglary
-Robbery
-Shooting guns in public
-Stabbings
-Sexual Assaults

Response options were identical to the perceived social disorder measure (as both were created from responses to questions 10a-p in the survey) and were recoded in the same manner. The scale showed good reliability with Alphas of .701 and .815 in the pre-and post-intervention survey data respectively.

Fear of Crime/Perceived Risk

Fear of crime is arguably the key intermediary variable in the broken windows thesis. Wilson and Kelling (1982) argued that untended disorder created fear of crime among residents, which could then lead to withdrawal leaving communities more vulnerable to criminal invasion. As such, fear of crime is a key outcome of the current study, as an underlying assumption of broken windows policing is that the tactic will make residents feel safer and empower them to exert informal social controls again. Measurement of fear of crime has been a hot topic (see Farrall, 2004; Farrall & Gadd, 2004; Ferraro, 1995), with much of this debate centered on whether certain questions tap into emotional fear or perceived risk. For the current study, the two measures of fear examined fall into the perceived risk category according to this debate.

This is viewed as consistent with the broken window's logic as any resident withdrawal is likely to be caused by perceptions that it has became too risky to exert social control in the community.

The first fear/perceived risk measure is a scale created from a series of questions asking respondents how likely they felt they would become victims of the following crimes (see question 9 in the survey in Appendix A; this measure is patterned after that used by Warr, 1984):

-Robbery
-Assault (attacked by stranger)
-Murder
-Sexual assault
-Burglary
-Car stolen
-Vandalism

For each of these crime types, respondents were asked to rate how likely they thought they would become a victim of these crimes in the next six months, with response options of "very unlikely," "unlikely," "likely," and "very likely." These were coded as ordinal variables ranging from 1-4. The scales showed good reliability with a Cronbach's Alphas of .901 and .875 for the pre- and post-intervention surveys respectively.

As an additional measure of fear/risk, the survey also asked a variation of the standard NCVS fear question (see question 6 in Appendix A) which asked respondents how safe they felt walking alone at night on their street segments with response options of "very safe," "somewhat safe," "somewhat unsafe," and "very unsafe." This was simply measured as an ordinal variable with a range of 1-4 with "very unsafe" as the high point on the scale.

Collective Efficacy

Collective efficacy/informal social control is also a key intermediary variable in the broken windows thesis. While we felt it unlikely that a 6-month police intervention would have much impact on levels of collective efficacy, we nevertheless thought it important to empirically

examine this. The collective efficacy measures were modeled directly after those used in Sampson and Raudenbush's (1999) groundbreaking study, with the wording altered to refer to the respondent's street segment (segments are referred to as the respondents' "block" in all relevant questions in the survey instrument as that term is more used in everyday language) rather than their neighborhood given the unit of analysis in the current study. The questions used represent adequate measures of the two main components of collective efficacy as outlined by Sampson and colleagues (1997)--social cohesion and willingness to intervene for the common good.

The items used to make up the collective efficacy factor are represented in questions 3 and 4 in the survey (see Appendix A). Question 3 measures social cohesion/trust, while question 4 is a measure of shared expectations for informal social control, which asks respondents how likely it was that their neighbors would intervene in various situations. Questions 3a, 3b and 3c were recoded so that "1" corresponded to a response of "strongly disagree" and "4" to a response of "strongly agree" so that higher numbers corresponded to higher levels of trust/cohesion. As noted above, questions 3e and 4c (which were included in Sampson and Raudenbush's, 1999 scale) had large problems with missing values in the form of "I don't know" responses and were thus dropped from the analysis. Questions 4a, 4b and 4d were reverse coded so that higher numbers indicated higher expectations for informal social control. The scale showed good reliability with Alphas of .779 and .741 for the pre-and post-intervention survey data respectively.

Police Legitimacy

The impact of broken windows policing on public opinions of the police is another key concern that has not received much research attention. Some studies have found increased

complaints against the police after undertaking broken windows-based policing (see Greene, 1999). Others have suggested that any type of police tactics focused on small "hot spots" may risk tarnishing relationships with the community as residents begin to feel like targets rather than partners of the police in crime prevention efforts (see Rosenbaum, 2006). As such, we included measures of police legitimacy in our survey (see questions 14a-e in the survey in Appendix A). These questions were adapted from surveys used in the Jersey City Displacement and Diffusion Study (Weisburd et al., 2006) and the Jersey City Problem-Oriented Policing in Public Housing Study (Mazerolle, Ready, Terrill, & Waring, 2000). As noted earlier, Question 14b was not used due to missing values. Respondents were asked whether they "Strongly Agree," "Agree", "Disagree," or "Strongly Disagree" with the following statements about their city police:

-I have a lot of respect for the (city) police
-I feel proud of the (city) police
-I am very supportive of the (city) police
-The (city) police treat people fairly

The scale produced good reliability with Alphas of .925 and .904 for the pre- and post-intervention surveys respectively.

Descriptive Statistics for Survey Variables

The above section outlined the data collection and creation of the scale variables, Tables 3.2a and 3.2b below presents the descriptive statistics for these scale variables for the target and control segments respectively. The tables list the pre- and post-intervention means and standard deviations, as well as the pre-to-post mean differences and their standard deviations. The main concern of this study is examining the within individual change from the pre- to post-intervention period on these variables of interest. As such, the change scores are the variables analyzed in the ANOVAs in this study.

Table 3.2a: Descriptive Statistics for Survey Variables in the 55 Target Street Segments

Variable	Pre Mean	SD	Post Mean	SD	Mean Change	SD
Perceived Social Disorder	7.00	7.49	7.92	7.83	0.92	6.33
Perceived Physical Disorder	2.46	2.56	3.03	2.77	0.57	2.60
Perceived Crime	1.21	1.78	1.38	2.33	0.17	2.60
Perceived Risk	17.15	4.08	16.14	4.16	-1.01	4.51
Fear of Crime	1.96	0.96	1.99	0.89	0.04	0.86
Collective Efficacy	20.27	3.33	20.04	3.19	-0.23	3.39
Police Legitimacy	12.42	2.28	12.29	2.08	-0.13	2.15

Table 3.2b: Descriptive Statistics for Survey Variables in the 55 Control Street Segments

Variable	Pre Mean	SD	Post Mean	SD	Mean Change	SD
Perceived Social Disorder	7.56	7.72	8.36	7.96	0.80	6.12
Perceived Physical Disorder	2.63	2.43	2.86	2.47	0.23	2.13
Perceived Crime	1.54	2.35	1.99	2.62	0.45	2.85
Perceived Risk	17.05	4.36	16.25	4.42	-0.79	4.25
Fear of Crime	2.02	0.91	1.99	0.89	-0.03	0.94
Collective Efficacy	20.47	3.14	20.02	3.11	-0.45	3.25
Police Legitimacy	12.92	2.20	12.56	2.23	-0.35	2.17

Official Police Data

We also collected official crime data from all three police agencies in the study. Specifically, calls for service, crime incident and arrest data were collected. The current study primarily examines calls for service (CFS) data and incident data to measure crime and disorder. Data were collected from six months prior to the start of the police intervention through six months after the end of the police effort. The intervention period was seven months (the intervention was extended due to slow implementation in the first month), and thus data for this period were weighted down to the six-month length of the pre- and post-intervention waves to account for the extra month. After obtaining the data from the police, members of the research

team cleaned and geocoded all of the datasets. The final geocoding[15] match rates for all the datasets are presented in Table 3.3 below.

Table 3.3: Geocoding Match Rates for Official Police Data

City	Geocoding Match Rates		
	CFS Data	***Incident Data***	***Arrest Data***
Redlands[16]	95.99%	95.99%	95.99%
Ontario	97.24%	94.61%	94.99%
Colton	94.77%	95.20%	93.00%

The section below details the crime and disorder measures from the CFS, incident and arrest data for the treatment and control areas. For analyses, data were aggregated to the street-segment level for the pre-intervention, during-intervention and post-intervention periods—with the variables being the total number of each crime type that occurred on the study street segments during these time periods. As such, all the descriptive statistics are based on the aggregated dataset. Reliability was not relevant since these are simply sums of total crime and disorders occurring on the street segments in the police data, and not scales meant as measures of some underlying construct.

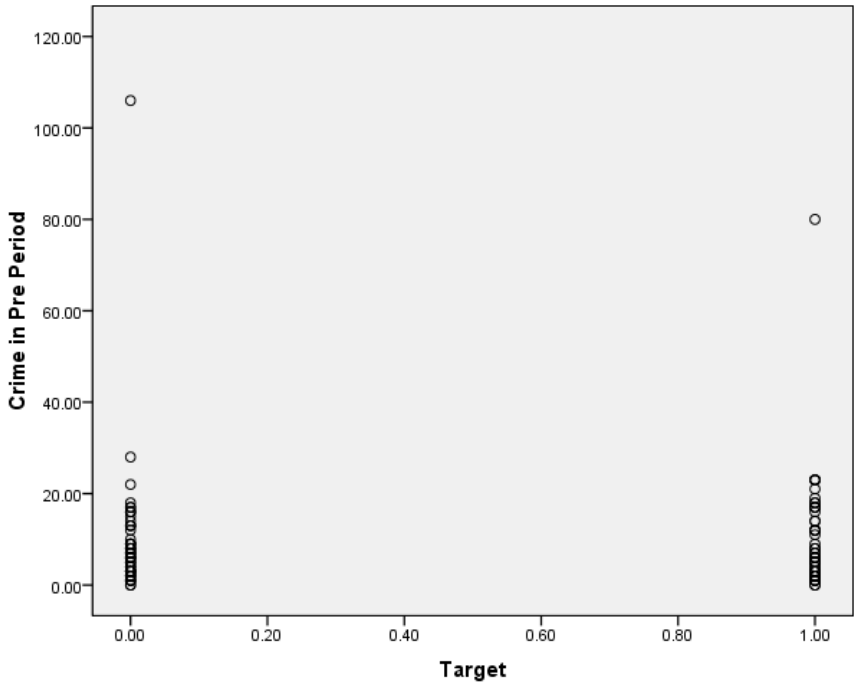
Outliers

During the analysis phase, it became clear that there was an issue with two street segments which were extreme outliers in their levels of crime as measured by official crime data. One control segment from Colton and one target segment from Ontario were thus dropped from analyses using the CFS, incident and arrest data. These two segments had much higher levels of crime and disorder activity in the police data in all three periods. For example, during the pre-intervention period, one outlier had 106 calls for service for the crime types outlined below,

[15] The following geocoding criteria used were: spelling senstitivity-80; minimum candidate score-30; minimum match score-35; side offset-0; end offset-3%; match if candidates tie—no.
[16] Redlands maintains one database that combines CFS, Incident and Arrest data rather than having separate data sets for each.

while the other had 80. The next highest total among the other 108 segments in the study was 28 crime calls for service. This is illustrated in the scatter plots below in Figure 3.1 which shows the values in the treatment and control segments. Additionally, the Colton control segment saw large declines in crime over the study period. Furthermore, police leaders in Colton informed us that this area received a large number of complaints from residents, which led them to do aggressive enforcement on this control segment. The descriptive statistics presented below for the official police data do not include these outliers, and thus summarize the data in the remaining 108 street segments.

Figure 3.1: Scatter plot of pre-intervention crime levels to illustrate outliers



Call for Service Data

Police call for service data were used to create two scale variables, one measuring more serious crime, and the other measuring disorder. The crime scale included all reports of the following completed or attempted offenses:

-Arson
-Assault/Battery (simple and aggravated)
-Auto Theft
-Burglary
-Car Jacking
-Grand Theft
-Petty Theft
-Rape
-Robbery

Tables 3.4a and 3.4b show the descriptive stats for these crime types in the three time periods.

Table 3.4a: Target Street Segments- Descriptive Statistics for Crime CFS (N=54)

Variable	Pre Mean	SD	During Mean[a]	SD	Post Mean	SD
Arson	0.04	0.19	0.02	0.12	0.00	0.00
Assault/Battery	1.11	1.27	1.20	1.47	1.10	1.29
Motor Vehicle Theft	2.00	2.19	1.56	1.87	1.09	1.62
Burglary	1.85	2.36	1.80	2.34	1.67	1.93
Car Jacking	0.00	0.00	0.02	0.12	0.00	0.00
Grand Theft	0.52	0.80	0.47	0.73	0.28	0.60
Petty Theft	2.30	3.96	2.50	5.66	2.85	7.78
Rape	0.02	0.14	0.05	0.20	0.06	0.30
Robbery	0.43	0.88	0.30	0.59	0.28	0.63
Total Crime CFS	8.26	7.18	7.90	7.90	7.32	9.50

a. During means weighted down to the length of the pre and post waves

Table 3.4b: Control Street Segments- Descriptive Statistics for Crime CFS (N=54)

Variable	Pre Mean	SD	During Mean[a]	SD	Post Mean	SD
Arson	0.06	0.23	0.05	0.20	0.02	0.14
Assault/Battery	1.20	1.46	1.45	2.57	1.32	1.71
Motor Vehicle Theft	1.69	1.74	1.42	1.65	1.02	1.58
Burglary	2.15	2.10	2.30	2.71	2.19	2.22
Car Jacking	0.00	0.00	0.00	0.00	0.04	0.19
Grand Theft	0.48	0.86	0.53	0.87	0.41	0.77
Petty Theft	1.72	2.87	1.70	2.92	1.41	2.02
Rape	0.15	0.36	0.03	0.16	0.02	0.14
Robbery	0.39	0.92	0.30	0.59	0.20	0.56
Total Crime CFS	7.83	6.07	7.78	7.40	6.61	5.06

a. During means weighted down to the length of the pre and post waves

These descriptive statistics show that levels of crime and disorder were relatively low, and both the target and control areas saw small decreases from pre- to post-intervention. The small number of calls was to be expected given the small unit of analysis and the fact that our study sites are mid-sized cities as outlined in Chapter 2. As such, beyond the relatively smaller sample size for our crime and disorder analyses, our power to detect significant changes in our analyses of crime is also reduced because of the low base rate of crime on the street segments studies.

Tables 3.5a and 3.5b show the descriptive statistics for disorder measured by police calls for service. The disorder measure includes all calls for the following disorder issues:

-Abandoned Cars
-Drugs (sales or use/possession)
-Disturbing the Peace/Disturbance/Disorderly Conduct
- Drunk or high in public/public drinking
-Illegal Dumping/litter
-Prostitution
-Vandalism

Table 3.5a: Target Street Segments- Descriptive Statistics for Disorder CFS (N=54)

Variable	Pre Mean	SD	During Mean[a]	SD	Post Mean	SD
Drugs	0.74	0.98	0.91	1.40	0.72	1.09
Disturbance/Disorderly Conduct	9.48	7.32	9.76	6.40	9.15	7.19
Abandoned Vehicles	0.57	1.04	0.39	0.78	0.39	0.71
Drunk/High in Public and Public Drinking	0.70	0.94	0.73	1.16	0.52	0.82
Illegal Dumpling	0.07	0.33	0.02	0.12	0.02	0.14
Prostitution	0.10	0.56	0.08	0.38	0.07	0.26
Vandalism	2.00	1.98	1.86	1.86	1.30	1.46
Total Disorder CFS	13.67	9.19	13.52	9.23	12.07	9.26

a. During-intervention means weighted down to the length of the pre- and post-intervention waves

Table 3.5b: Control Street Segments- Descriptive Statistics for Disorder CFS (N=54)

Variable	Pre Mean	SD	During Mean[a]	SD	Post Mean	SD
Drugs	0.93	1.60	1.02	1.31	0.82	1.29
Disturbance/Disorderly Conduct	10.96	10.29	10.51	10.62	10.52	9.50
Abandoned Vehicles	0.63	1.02	0.50	0.83	0.54	1.26
Drunk/High in Public and Public Drinking	0.80	1.16	0.61	0.89	0.65	1.07
Illegal Dumpling	0.04	.19	0.03	0.16	0.04	0.27
Prostitution	0.04	0.19	0.05	0.20	0.04	0.19
Vandalism	1.91	2.26	1.47	1.91	1.24	1.50
Total Disorder CFS	15.30	13.63	14.07	13.20	13.76	12.01

a. During-intervention means weighted down to the length of the pre- and post-intervention waves

From these descriptive statistics we see the disorder calls for service were around twice as prevalent as what we saw for crime—largely driven by calls for disturbances and disorderly conduct. As such our power for examining impacts on disorder as measured by police CFS data will be a bit higher than it was for crime. However, power levels are still low because of the restricted sample size as outlined in Chapter 2.

Crime Incident Data

Crime incident data were also collected to form another measure of crime and disorder. Crime incident data are sometimes viewed as more reliable measures of crime in the sense that they only includes cases which were verified by police. The downside for the current study is the already low baselines of crime and disorder in the CFS data above are even lower. The number of street segments remains 108, as the two outliers discussed above where dropped from all the official police data analyses. Tables 3.6a and 3.6b below show the descriptive statistics for crime measured by police incident data for the target and control segments respectively. The crime/disorder types included also vary due to some codes in the incident data not being present

in the CFS data for all three cities or vice versa. The crime scale includes all completed and attempted incident reports for the following offenses:

-Arson
-Assault
- Burglary,
-Car Jacking
-Theft (grand and petty)[17]
-MVT
-Homicide
- Robbery
- Rape

As Table 3.6 illustrates, these incident data show slightly smaller numbers of cases than we saw for calls, while the direction of change match those of the CFS data with both the target and control areas evidencing small declines pre-to-post intervention. Tables 3.7a and 3.7b show the descriptive statistics for disorder incidents.

Table 3.6a: Target Street Segments- Descriptive Statistics for Crime Incidents (N=54)

Variable	Pre Mean	SD	During Mean[a]	SD	Post Mean	SD
Arson	0.02	0.14	0.03	0.16	0.00	0.00
Assault	0.78	0.95	0.83	1.02	0.83	1.18
Burglary	1.93	2.34	2.23	2.78	2.24	2.94
Theft	2.06	2.65	2.06	3.59	2.11	5.15
Motor Vehicle Theft	1.48	1.76	1.03	1.19	0.83	1.06
Homicide	0.02	0.14	0.02	0.12	0.02	0.14
Robbery	0.41	0.86	0.44	0.73	0.32	0.72
Car Jacking	0.00	0.00	0.02	0.12	0.04	0.19
Rape	0.04	0.19	0.05	0.20	0.07	0.43
Total Crime Incidents	6.70	5.89	6.68	6.38	6.39	8.17

a. During-intervention means weighted down to the length of the pre- and post-intervention waves

[17] In the incident data, it was not possible to distinguish between grand and petty theft from the incident codes for all three cities. Thus the two types of theft were combined in the incident data.

Table 3.6b: Control Street Segments- Descriptive Statistics for Crime Incidents (N=54)

Variable	Pre Mean	SD	During Mean[a]	SD	Post Mean	SD
Arson	0.02	0.14	0.05	0.20	0.02	0.14
Assault	1.56	2.30	1.48	1.78	0.94	1.41
Burglary	1.83	2.39	2.50	3.18	2.22	2.70
Theft	1.65	2.01	1.73	2.26	1.39	2.10
Motor Vehicle Theft	1.48	2.05	1.12	1.47	0.93	2.02
Homicide	0.02	0.14	0.03	0.16	0.06	0.41
Robbery	0.33	0.75	0.39	0.69	0.24	0.64
Car Jacking	0.02	0.14	0.02	0.12	0.00	0.00
Rape	0.11	0.32	0.05	0.20	0.04	0.19
Total Crime Incidents	6.93	6.28	7.32	6.88	5.80	6.10

a. During-intervention means weighted down to the length of the pre- and post-intervention waves

The disorder incident measure is summarized below in Tables 3.7a and 3.7b and includes the following:

-Drugs (sales or use/possession
-Disturbing the Peace/Disturbance/Disorderly Conduct
-Drunk or high in public/public drinking
-Panhandling/vagrancy
-Vandalism/Graffiti
-Prostitution

Table 3.7a: Target Street Segments- Descriptive Statistics for Disorder Incidents (N=54)

Variable	Pre Mean	SD	During Mean[a]	SD	Post Mean	SD
Drugs	0.87	2.44	0.66	1.42	0.67	1.63
Drunk/High in Public and Public Drinking	1.07	1.61	0.64	1.13	0.69	1.21
Disturbance/Disorderly Conduct	0.09	0.29	0.09	0.39	0.22	0.54
Vandalism	1.24	1.29	1.08	1.20	0.74	0.98
Prostitution	0.02	0.14	0.09	0.42	0.06	0.41
Panhandling/Vagrancy	0.00	0.00	0.00	0.00	0.00	0.00
Total Disorder Incidents	3.28	3.92	2.47	2.76	2.32	2.52

a. During-intervention means weighted down to the length of the pre- and post-intervention waves

Table 3.7b: Control Street Segments- Descriptive Statistics for Disorder Incidents (N=54)

Variable	Pre Mean	SD	During Mean[a]	SD	Post Mean	SD
Drugs	0.69	1.39	0.55	0.99	0.74	1.15
Drunk/High in Public and Public Drinking	0.83	1.72	0.89	1.63	0.80	1.45
Disturbance/Disorderly Conduct	0.02	0.14	.0047	0.20	0.15	0.45
Vandalism	1.19	1.80	0.88	1.29	0.93	1.16
Prostitution	0.00	0.00	0.02	0.12	0.02	0.14
Panhandling/Vagrancy	0.00	0.00	0.02	0.12	0.02	0.14
Total Disorder Incidents	2.72	3.41	2.37	2.85	2.63	3.10

a. During-intervention means weighted down to the length of the pre- and post-intervention waves

The number of disorder incidents is a good deal smaller than what was seen for crime incidents. This is not surprising as such minor problems do not often lead to official crime incident reports being filed by police compared to the more serious crimes outlined above. As with the crime incidents and CFS data outlined above, both the target and control areas saw small declines in disorder incidents pre to post intervention.

Arrest Data

Finally, we also collected arrest data from the three police agencies participating in the current study. These data provide some indication of the level of police activity in the target and control areas over the study area. At the outset, it should be noted that we did not expect an increase in arrests in the targeted areas. In fact, arrest was defined as the last resort for dealing with disorder, with warnings and other actions being the preferred method for dealing with disorderly people. This is discussed in more detail in Chapter 4's outline of the police intervention. Tables 3.8a and 3.8b below present the descriptive statistics for crime-related arrests over the study period. The crime arrest measure included all arrests for the crime incidents outlined above.

Table 3.8a: Target Street Segments- Descriptive Statistics for Crime Arrests (N=54)

Variable	Pre Mean	SD	During Mean[a]	SD	Post Mean	SD
Arson	0.00	0.00	0.03	0.23	0.00	0.00
Assault	0.11	0.42	0.14	0.36	0.13	0.48
Burglary	0.37	0.88	0.45	1.52	0.67	2.18
Theft	0.52	1.40	0.66	2.50	1.04	4.26
Motor Vehicle Theft	0.04	0.19	0.03	0.23	0.06	0.23
Homicide	0.00	0.00	0.03	0.16	0.04	0.27
Robbery	0.09	0.35	0.14	0.39	0.06	0.30
Car Jacking	0.00	0.00	0.00	0.00	0.02	0.14
Rape	0.00	0.00	0.00	0.00	0.00	0.00
Total Crime Arrests	1.13	2.17	1.52	4.03	2.00	6.48

a. During-intervention means weighted down to the length of the pre- and post-intervention waves

Table 3.8b: Control Street Segments- Descriptive Statistics for Crime Arrests (N=54)

Variable	Pre Mean	SD	During Mean[a]	SD	Post Mean	SD
Arson	0.00	0.00	0.00	0.00	0.00	0.00
Assault	0.37	1.05	0.19	0.51	0.15	0.41
Burglary	0.13	0.44	0.17	0.55	0.33	0.95
Theft	0.11	0.37	0.06	0.28	0.11	0.50
Motor Vehicle Theft	0.06	0.23	0.00	0.00	0.00	0.00
Homicide	0.06	0.41	0.02	0.12	0.04	0.19
Robbery	0.04	0.19	0.09	0.35	0.02	0.14
Car Jacking	0.00	0.00	0.00	0.00	0.00	0.00
Rape	0.02	0.14	0.02	0.12	0.04	0.19
Total Crime Arrests	0.78	1.50	0.55	1.04	0.69	1.21

a. During-intervention means weighted down to the length of the pre- and post-intervention waves

The descriptive statistics for arrests show that overall levels of arrests at the study street segments were very low. This is to be expected when using such small units of analysis and arrest data. In the target area we see a small increase in arrests from pre-to-during intervention, while the control area saw a very slight decrease. This could be indicative of the increased police presence in the target areas, but given the very small base rates and changes, extreme caution must be used in drawing any conclusions. But nevertheless the pre-to-during intervention changes are in the expected direction.

Tables 3.9a and 3.9b below present the descriptive stats for disorder related arrests. These data include all arrests for the following offenses:

-Drugs (sales or use/possession
-Disturbing the Peace/Disturbance/Disorderly Conduct
-Drunk or high in public/public drinking
-Vandalism/Graffiti
-Prostitution

Table 3.9a: Target Street Segments- Descriptive Statistics for Disorder Arrests (N=54)

Variable	Pre Mean	SD	During Mean[a]	SD	Post Mean	SD
Prostitution	0.04	0.27	0.11	.70	0.07	0.33
Drugs	0.65	1.47	0.61	1.58	0.80	2.04
Drunk/High in Public and Public Drinking	0.98	1.41	0.67	1.15	0.91	1.64
Disturbance/Disorderly Conduct	0.02	0.14	0.02	.12	0.00	0.00
Vandalism	0.17	0.38	0.13	.30	0.07	0.33
Total Disorder Arrests	1.76	2.80	1.45	3.04	1.80	3.46

a. During-intervention means weighted down to the length of the pre- and post-intervention waves

Table 3.9b: Control Street Segments- Descriptive Statistics for Disorder Arrests (N=54)

Variable	Pre Mean	SD	During Mean[a]	SD	Post Mean	SD
Prostitution	0.00	0.00	0.05	0.26	0.04	0.19
Drugs	0.50	0.97	0.45	0.83	0.78	1.27
Drunk/High in Public and Public Drinking	0.98	1.79	0.94	1.62	0.85	1.55
Disturbance/Disorderly Conduct	0.02	0.14	0.00	0.00	0.02	0.14
Vandalism	0.17	0.51	0.06	0.22	0.20	0.86
Total Disorder Arrests	1.61	2.12	1.45	1.94	1.72	2.67

a. During-intervention means weighted down to the length of the pre- and post-intervention waves

For disorder arrests the descriptive statistics show very small base rates and changes, with both the target and control sites showing very small declines from pre-to-during intervention, and small increases in the post-intervention period.

Chapter 4 – Design and Implementation of the Police Intervention

This chapter will detail the design and implementation of the police intervention carried out during this project. The chapter begins by providing a brief outline of how the police were instructed to carry out broken windows policing in the field. A more detailed illustration of the police intervention can be found in the Intervention Protocol booklet that was given to officers and is included in Appendix C. The next section of this chapter provides an overview of how officers working on the project were trained. Finally, the bulk of the chapter will present statistics outlining the implementation of the intervention over the treatment period, as well as examining any differences in implementation across cities.

Design of the Intervention

At the outset of the study, a central concern was to develop a police intervention that was "true" to the notion of broken windows policing as developed by Wilson and Kelling (1982). This is a more difficult task than with many other policing tactics as the originators of the idea have never provided detailed guidelines on exactly what police strategies based on the broken windows thesis should look like in practice. Past studies of broken windows policing have tended to use misdemeanor arrests (see for example, Kelling & Sousa, 2001) or misdemeanor convictions (see Worrall, 2002) as proxies of police activity in relation to the Broken Windows idea. Due to this, and other factors, there is a common conception among many that policing tactics based on the broken windows idea necessarily become "zero tolerance" police tactics where police are issuing citations or making arrests for every minor law violation they find. In fact, a sizable volume of research uses the "zero tolerance" moniker for referring to various police tactics focused on reducing disorder (for example, see Punch, 2007).

However, zero tolerance policing is not consistent with the type of policing suggested by Wilson and Kelling (1982). In their article they spent a great deal of time discussing how police must work with people in the community to negotiate consensus on behavior, and that issuing arrests and citations for every law violation was not suggested as the method to achieve that result. In particular, they discussed how police should talk to people they find involved in activities such as public drinking about why the behavior is not allowed, and rely on warnings (or asking them to keep it in a back alley out of site etc.) rather than relying on citations and arrests for every minor crime/disorder they encounter. In a later work with Catherine Coles, Kelling further illustrated that his conception of broken windows policing does not follow the zero tolerance framework, stating:

> "In fact, the ideas presented in 'Broken Windows' were antithetical to the use of 'streetsweeping' tactics targeted on 'undesirables'; rather, they advocated close collaboration between the police and citizens, including street people, in the development of neighborhood standards. Moreover, neighborhood rules were to be enforced for the most part through non-arrest approaches—education, persuasion, counseling, and ordering—so that arrest would only be resorted to when other approaches failed." (Kelling & Coles, 1996, 22-23)

As such, in an effort to be faithful to the original conception of broken windows policing, the intervention in the current study had three central principles. First, no discovered physical or social disorders should go ignored by the police in the target segments. Second, social disorder was to be dealt with in an escalating fashion with citations and arrests as the last resort options. Third, the key element of dealing with physical disorder was rapid repair. Police were to notify the relevant agencies for cleanup of graffiti, trash and other physical disorder issues, and then follow up with them if needed to make sure the problems were dealt with as quickly as possible. Below we detail how police were instructed to deal with a typical instance of social disorder and typical instances of physical disorder. More examples and details can be found in the

Intervention Protocol booklet that was given to officers and is included in this report in Appendix C.

To provide an example of how police were expected to deal with social disorder, take the following example relating to public drinking that's excerpted from the Intervention Protocol booklet:

> "Public drinking is a concern for a variety of reasons, ranging from the linkage between intoxication and more serious offending, to broken bottles strewn upon streets and sidewalk. As such, this is an obvious target for increased attention within the framework of broken windows policing.
>
> The suggested approach for handling public drinking is to firmly explain to the subject that consuming alcohol in public areas is not permissible and then to confiscate the alcohol. Take note of the individual and follow up before the end of your shift. If the behavior persists after a first warning, formal action is reasonable. Aggravating circumstances such as aggressive or defiant behavior, or a preexisting arrest warrant, will justify more than just a warning during the initial contact with the subject."

This example clearly illustrates the escalating nature of the broken windows policing intervention used in the current study. In accordance with the writing of the originators of the idea (Kelling & Coles, 1996; Wilson & Kelling, 1982), we instructed police to deal with social disorders through warnings, negotiations and counseling as the first option. Arrest was to be a last resort, used for repeat offenses after a warning or in cases where aggravating factors necessitated an arrest.

For physical disorder, the key was rapid repair. As the original Zimbardo (1969) experiment made clear, even a single instance of physical disorder (like a broken window on an abandoned car) can rapidly lead to escalating problems. As such, police were instructed to call in every type of physical disorder they found in the target street segments to the relevant agency for clean up, and to follow up and make sure the problem was dealt with in a timely manner. For

instance, the three agencies all had contacts for cleaning up graffiti. As such, they were instructed to call them in every instance of graffiti they found on target street segments, and check the site in a day or two to ensure it had been removed, and if had not they were to contact the graffiti removal agency again.

Thus, we feel our intervention is consistent with the ways in which Wilson and Kelling (1982) suggested police should deal with disorder in the field. Arrests and citations may be used, but they are not the first step as suggested in the zero tolerance approach to combating disorder. Rather, they are a last resort after informal means of negotiating behavior and cleaning up disorder have been exhausted, with the exception of cases with aggravating circumstances that necessitate arrest. However, it is important to note that in later writings by Kelling (for example, see Kelling & Coles, 1996) the role of community-oriented policing is more intertwined with the broken windows model, with emphasis placed on police partnering with the community to define and solve disorder problems. We opted not to test this approach to broken windows policing as the main focus of our current research was testing the ideas raised by Rosenbaum (2006), Harcourt (2001) and others (Braga, 2001; Hinkle & Weisburd, 2008; Weisburd & Braga, 2003) that traditional broken windows policing efforts, and intensive hot spots policing more generally, may have negative consequences for the community as they tend to simply involve increases in police presence and activity in small areas with little or no consultation or involvement of community members. We did not want to bias tests of these assumptions by including elements of community-oriented policing in the current intervention, though this is certainly an area worthy of future research attention.

The final decision to be made in designing the intervention concerned how much time the officers should spend in each of the 55 target street segments. Balancing the need for intensive

police presence with the amount of resources the three police chiefs agreed to devote to the project, it was decided that the goal would be to average three hours of police presence per week on each target segment throughout the intervention period.

Having designed the intervention, the next step was to train the officers who would be participating in the project to ensure they carried out the tactics as designed. The following section provides a brief overview of the training sessions delivered over the course of the project.

Officer Training

Initial Training

Lead investigators and project personnel conducted a Broken Windows Training Workshop on Friday, May 23, 2008 from 7:30 am to 12:00 pm at the Colton Community Center in Colton, CA. Officers in attendance from the three police departments participated in a training seminar which covered the following: the broken windows theory of crime control; broken windows policing in practice; and the study and intervention design. This seminar included an comprehensive overview of how the experimental and control street segments in each city were selected (only the target segments were identified to the officers), and a plan for administering the desired dosage of 180 minutes of broken windows policing per target segment for each of the 28 weeks of the intervention period (but see the following section on implementation regarding extension of the experiment beyond the initially planned 28 weeks). The officers were also informed of the outcome measures that would be examined at the conclusion of the experiment.

Each officer was provided with an Intervention Protocol booklet (see Appendix C) that included the material covered in training and examples of how to address specific types of social

disorder problems (e.g. aggressive panhandling, drug activity, fights and altercations in public areas, littering, etc.) and physical disorder problems (e.g. abandoned buildings, abandoned vehicles, building and housing code violations, inadequate street lighting, etc.) using methods consistent with Broken Windows policing as outlined in the previous section. The officers were also trained on how to fill out log forms the research team would use to monitor dosage during the intervention period and to collect data on the activities conducted (see "Officer Log Forms" below for more information).

Subsequent Trainings

Multiple follow-up training sessions were subsequently conducted at the Ontario Police Department (OPD). Specifically, after dosage levels fell considerably during weeks 5 to 8 (this is discussed in detail later in this chapter), OPD allocated additional patrol officers to the experiment in order to achieve the requisite 180 minutes per segment, per week. Four 1.5 hour training sessions were carried out during patrol shift briefings during week 12 (September 4 and 5, 2008) to ensure that these new participants to the project were carrying out the intervention as designed. During week 17 (October 10) two more OPD officers who would assume primary responsibility for the intervention were also trained individually by a member of the research team. Additional officers beyond those present at the initial training were also used for the project by the Colton and Redlands PDs. However, this involved many fewer officers than in Ontario, and those PDs pledged to have experienced project officers train the newcomers. As such, members of the research team did not deem it necessary to hold subsequent training sessions in those agencies.

Monitoring the Implementation of the Intervention

Officer Log Forms

Officers were instructed to complete one log form for each visit to a target segment during the six month intervention period. They were trained to fill out a log form regardless of how long they were present on the street segment, and even if they did not observe any disorderly behavior nor take any actions beyond simple police presence (see Appendix D for the log form given to officers). The log forms recorded the date of the visit, name of the street segment, city, officer ID number(s), and the time of officer arrival and departure from the segment. Specific types of social disorder (e.g. drinking in public, fist fights, and noise) and physical disorder (e.g. abandoned vehicles and building code violations) were also listed on the log form. Officers were instructed to indicate the number of actions taken for each type of disorder observed on the segment. Common intervention activities listed on the log form included talking to a citizen, field interrogation, stop and frisk, advising/warning a citizen, issuing a citation, making an arrest, making a referral to another agency, and writing an incident report. Space was given at the bottom of the form for officers to provide a brief narrative explaining the targeted problem and/or response. Officers in two-officer units were required to submit only one log form with both officer IDs to prevent duplication and artificially inflating the intervention dosage.

The log forms were scheduled to be picked up from the departments on a bi-weekly basis, and subsequently entered into a database by a CSUSB graduate assistant in order for the research team to provide departments with routine summaries of dosage levels for each segment. However, in part due to officer schedules and vacation days, the officers often submitted the log forms late, making it difficult to monitor dosage in real time and provide prompt feedback.

The number of usable log forms generated in each city during the intervention period for each department were: Ontario 1643, Redlands 2405, and Colton 1224. Although Ontario had twice as many target street segments as Redlands, Ontario officers visited street segments less frequently, with longer durations for each visit, and thus generated fewer log forms. However, part of this discrepancy is also likely due to periodic implementation problems in Ontario which are further discussed in full later in this chapter. Statistical data for this chapter were compiled based on these officer log forms.

Ride-a-longs

Several ride-alongs with officers working on the target segments were conducted by members of the research team and a CSUSB graduate assistant as another mechanism for monitoring the implementation of the broken windows intervention. Observers took brief notes on officers' activities during the shift to account for each minute of the shift. After each ride they transformed their notes into summaries. Observers explained to the individual officers that the ride-alongs were confidential and officers were informed they could review the observer's notes at any time. An effort was made to ride with different officers, on different days of the week and during different patrol shifts. In total, nine ride-alongs were conducted in Ontario, six in Redlands, and seven in Colton (See Table 4.1).

Table 4.1: Rides Conducted

Month	City	Date	Day	Shift
July	ONT	11	Fri	7:00 am - 5:30pm
	COL	15	Tues	7:30 am -1:00pm
	RED	17	Thurs	7:00 am - 5:00 pm
	COL	30	Wed	4:00 pm - 8:00 pm
August	ONT	16	Sat	7:00 pm - 3:00am
	RED	16	Sat	6:20 pm - 2:20 am
	COL	23	Sat	6:00 pm - 12:00 am
	ONT	30	Sat	8:30 pm - 2:40 am

September	ONT	12	Fri	8:00 pm - 2:00 am
	ONT	13	Sat	8:00 pm - 2:00 am
	RED	19	Fri	6:00 pm - 2:00 am
	COL	26	Fri	7:00 pm - 12:00 am
October	ONT	11	Sat	6:00 pm - 12:00 am
	ONT	12	Sun	10:00 am - 3:00 pm
	RED	14	Tues	9:00 am - 4:00 pm
November	COL	8	Sat	6:00 pm - 10:00 pm
	RED	13	Thurs	6:00 pm - 12:00 am
	COL	17	Mon	10:00 am - 3:00 pm
	ONT	25	Tues	9:00 am - 2:00 pm
December	COL	16	Tues	3:00 pm - 8:00 pm
	RED	19	Fri	10:00 am - 2:00 pm
	ONT	28	Sun	7:00 pm - 1:30 am

Meetings

Meetings were also held with supervisors and key project officers periodically throughout the intervention period to discuss the project's progress and ensure commitment throughout the study period. This also gave the research team opportunities to address any problems with implementation that were discovered through the research teams monitoring of activities. During week 7, (on July 29, 2008), members of the research team met with representatives from all police departments for an hour in Colton to discuss practical issues relating to the implementation of Broken Windows strategies. During week 14, (on September 15), members of the research team met again with the Department Chiefs for two hours at OPD to discuss the importance of maintaining the prescribed levels of dosage throughout the intervention period. In addition, the Research Manager met with Police Chiefs and Supervisors on an individual basis as issues arose throughout the course of the experiment, and communicated regularly by email.

Personnel Allocated to the Experiment

During the planning stage of the study, each of the three agencies agreed to form a Broken Windows Policing Unit comprised of 8 to 12 officers, and to assign a supervisor responsible for overseeing members of the unit and managing their operations. Initially, Ontario assigned School Resource Officers (SROs) to the intervention team. Redlands allocated Community Service Officers (CSOs) and officers from their Multiple Enforcement Team (MET) for this purpose. Colton assigned officers from their Neighborhood Enforcement Team (NET), a Code Enforcement Officer and a Parking Enforcement Officer. Throughout the intervention period, the departments had to make several modifications to officer assignments. This is discussed in detail for each city below.

Ontario

In Ontario, by week 4 (on July 11, 2008) it became apparent that all police visits to target segments were occurring on Monday through Friday, between 8:00 am and 4:00 pm, as those were the shift hours for SROs. Further, SROs were scheduling vacation time while the schools were out for summer break and, consequently, were not able to cover all of the target segments. With 30 target segments in the city, amounting to 5,400 minutes of treatment, a total of 90 officer hours per week were needed to achieve the agreed upon dosage of 180 minutes per segment. During the first four weeks, total officer time allocated to the treatment ranged from 870 to 1,819 minutes per week, which was about one-third of the desired time (see Table 4.2). These concerns were communicated to the OPD during week 4, and by week 6, (on July 23), the research team was assured that more personnel would be allocated, and treatment during the evening and nighttime hours and on weekends would be augmented. Nonetheless, a decay of treatment dosage rather than an increase was experienced during weeks 5-8.

By week 9 (August 10), the OPD had assigned patrol officers to the experiment (1 patrol officer was assigned to each of the 30 segments) to supplement the SROS and to provide treatment during evening/night hours and on weekends. Patrol officers were instructed to visit their segments when they had a break from responding to calls for service. The research team was informed of this change in week 12 (September 1). At that time, a member of the research team conducted four follow-up training sessions during patrol shift briefings as outlined above. During the time that additional patrol officers were allocated to the experiment (weeks 9-17) the number of segments treated per week did increase, but some officers were still spending less than the optimal time (as few as 3-10 minutes) on the experiment per week (see Table 4.2). Moreover, because of an internal dispute over resources, plans were underway to reduce the number of officers assigned to the experiment.

By week 18, the research team was informed that all of the intervention team except three patrol officers and two COPS officers (who had been previously been assigned to project) were being removed from the experiment. But, additionally, two different patrol officers were assigned to the project at this point, and a member of the research team conducted one-on-one training sessions with these two officers.

The OPD officers managed to allocate 5,400 or more minutes per week to the experiment – the optimal dosage – during four weeks of the intervention period (weeks 13 and 17 when patrol was assigned, and weeks 20 and 21 – see Table 4.2). The number of officers working on the experiment per week ranged from 1 to 33. In total, 46 different officers worked on the experiment, but seven officers only worked one week. Two officers were involved for 14 of the 28 weeks, but none of the officers worked the experiment from beginning to end. Twelve officers were responsible for 80 percent of the activity log sheets submitted.

Table 4.2: Ontario: Number of Experimental Segments Treated, Number of Officers Working on Experiment, Total Time Allocated to Experiment, and Mean, Minimum and Maximum Minutes per Officer by Week of Experiment

Week of Expt.	N. Segments Treated/ 30	Number of Officers Working on Expt.	Total Time Allocated to Expt. (min.)	Avg. Minutes per Officer	Min. Minutes per Officer	Max. Minutes per Officer
1	14	3	870	290	155	415
2	18	3	1290	430	225	600
3	22	4	1819	455	190	615
4	21	4	1710	428	150	870
5	6	1	360	360	360	360
6	1	1	45	45	45	45
7	0	0	0	-	-	-
8	3	3	142	47	10	120
9	19	19	1653	87	3	450
10	16	20	1745	87	5	309
11	14	16	1277	80	20	161
12	18	20	1260	63	5	210
13	30	33	5454	165	5	550
14	28	27	3600	133	12	490
15	17	18	1519	84	6	240
16	22	23	2205	96	10	295
17	30	16	5695	356	10	1800
18	30	7	5270	753	27	2400
19	23	6	2984	497	60	1200
20	30	7	6249	893	60	2400
21	30	6	6256	1043	59	2581
22	30	4	4586	1147	233	2400
23	30	4	4859	1215	222	2281
24	30	5	4952	990	390	2400
25	30	5	5023	1005	30	2295
26	30	7	5113	730	58	2340
27	30	7	4534	648	135	2340
28	26	4	2493	623	64	2062
29	29	4	5029	1257	30	3000
30	0	0	0	-	-	-
31	0	0	0	-	-	-

Redlands

Redlands initiated the intervention period one week later than the other sites. After three weeks it became clear that more officers were needed to provide adequate dosage for all 15 target segments (2,700 minutes or 45 officer hours per week). The pool of officers allocated to the experiment team doubled from the initial five officers between weeks 5 and 11 (see Table 4.3). Each of the COPS and MET officers were assigned between two and five street segments that they were responsible for throughout the duration of the intervention period. From weeks 12 to 23 (September – November), the RPD supplemented the COPS and MET officers with patrol officers, and subsequently during that time between 21 and 31 officers submitted log sheets each week.

The RPD allocated 2,700 minutes per week (target dosage) to the target segments during 19 weeks of the experiment (see Table 4.3). The number of officers working on the experiment per week ranged from 1 to 31. In total, 73 different officers worked on the intervention team, although 27 officers worked only one week. Seven officers were involved in the study for 24 weeks or more. Fifteen officers were responsible for 80 percent of the log sheets submitted.

Table 4.3: Redlands: Number of Experimental Segments Treated, Number of Officers Working on Experiment, Total Time Allocated to Experiment, and Mean, Minimum and Maximum Minutes per Officer by Week of Experiment

Week of Expt.	N. Segments Treated/ 15	Number of Officers Working on Expt.	Total Time Allocated to Expt. (min.)	Avg. Minutes per Officer	Min. Minutes per Officer	Max. Minutes per Officer
1	0	0	0	-	-	-
2	6	5	855	171	20	390
3	9	6	395	66	20	110
4	13	10	992	99	26	290
5	15	12	4902	409	5	895
6	15	17	3897	229	10	510
7	14	15	4261	284	40	1020
8	15	11	2162	197	10	530
9	15	11	1464	133	25	285
10	15	14	3734	267	12	960
11	15	15	2395	160	15	660
12	15	24	5087	212	5	1110
13	15	26	5458	210	10	840
14	15	27	4905	182	12	615
15	15	29	4503	155	4	620
16	15	23	4513	196	15	875
17	15	31	3611	116	5	600
18	15	25	4551	182	7	750
19	15	25	4347	174	9	680
20	15	28	4071	145	2	600
21	15	31	4015	130	9	660
22	15	25	3906	156	9	900
23	15	21	2035	97	5	397
24	15	17	2317	136	9	500
25	15	18	4140	230	5	1140
26	15	17	4210	248	15	1005
27	15	13	2636	203	6	780
28	14	13	2501	192	21	600
29	15	18	3230	179	10	900
30	15	17	3203	188	9	540
31	15	15	2610	174	10	720

Colton

Similar to Ontario, officers in Colton visited the target segments primarily between 7:30 am and 5:30 pm for the first six weeks, as those were the assigned shift hours for the two NET officers and the Parking and Code Enforcement officers. This concern was communicated to the CPD during week four and, as a result, the department began increasing night and weekend shift coverage during week seven by supplementing the assigned officers with patrol officers. It was at that point that Colton managed to achieve and, for the most part, maintain the desired dosage on the 10 target segments (a dosage of 1,800 minutes per week, or 30 hours, was achieved 20 out of 32 weeks) (see Table 4.4).

The number of officers working on the experiment per week ranged from 3 to 10 (see Table 4.4). In all, 15 different officers worked on the intervention team during the course of the experiment, including two Parking Enforcement officers and one Code Enforcement officer. Six of these officers worked only one week of the experiment; three of the officers were involved for 24 weeks or more (one of these officers was a Parking Enforcement officer). Six of the officers were responsible for 89 percent of the activity log sheets submitted.

Table 4.4: Colton: Number of Experimental Segments Treated, Number of Officers Working on Experiment, Total Time Allocated to Experiment, and Mean, Minimum and Maximum Minutes per Officer by Week of Experiment

Week of Expt.	N. Segments Treated/ 30	Number of Officers Working on Expt.	Total Time Allocated to Expt. (min.)	Avg. Minutes per Officer	Min. Minutes per Officer	Max. Minutes per Officer
1	5	3	1025	342	15	505
2	10	5	594	119	4	275
3	9	3	666	222	18	378
4	10	4	639	160	44	291
5	10	5	1793	359	15	712
6	10	7	623	89	23	180
7	10	8	1948	244	30	703
8	10	7	2060	294	20	711
9	10	7	1999	286	20	625
10	10	10	2469	247	10	684
11	10	7	2132	305	15	581
12	10	9	2630	292	13	840
13	10	8	1829	229	8	722
14	10	8	2829	354	35	755
15	10	9	2668	296	27	912
16	10	8	1868	234	4	780
17	10	6	2217	370	30	725
18	10	5	1630	326	10	760
19	10	6	2212	369	26	779
20	10	5	1960	392	12	835
21	10	6	2305	384	45	872
22	10	7	1636	234	37	460
23	10	8	3130	391	32	879
24	10	5	1699	340	23	828
25	10	8	2747	343	11	768
26	10	7	3044	435	29	886
27	10	8	3477	435	29	1099
28	10	6	3234	539	105	1196
29	10	6	2493	416	20	886
30	9	5	1474	295	28	886
31	0	0	0	-	-	-

Overview of Treatment Implementation

Initially, the intervention period was scheduled to begin on Monday, June 16, 2008 and end on Saturday, December 27, 2008 – lasting a total of 28 weeks. Early in the study, the researchers and Police Chiefs made the decision to extend the experiment through the first week of January 2009 (for a total of 29 weeks). In the first week of November, the research team requested that the police departments further extend the intervention for an additional two weeks until January 17, 2009 (31 weeks), due to the inability to begin the post-intervention resident surveys until January 24, 2009. The Ontario and Redlands Police Departments agreed; however, only Redlands was successful in extending the intervention period. The Ontario and Colton Police Departments determined that they did not have the resources to continue the study past 30 weeks.

As noted above, the research and intervention teams agreed upon a treatment dosage of 180 minutes of broken windows style policing per target segment for each week of the intervention period. *How* the police presence was to be allocated throughout the week was largely left to the individual departments. The research team emphasized in training and throughout the intervention period that officers should make an effort to visit segments multiple times each week, and especially at times of the day/night when the likelihood of observing social disorders would be higher. Below, the nature of the treatment will be discussed in terms of: 1) dosage by time (minutes) and frequency of police presence on target segments by week, day of the week, time of day; and, 2) dosage by segment. The types of social and physical disorders observed by the officers and the intervention activities taken to address these disorders will also be examined by city and by segments within each city.

Dosage by Week of Experiment

Average Minutes of Police Presence on Target Segments by Week

Ontario

Officers in Ontario were able to provide additional police presence on all 30 target segments during 11 weeks of the experiment (35 percent of the intervention period). During four of those weeks, the mean number of minutes per segment reached or exceeded the target 180 minutes. The greatest treatment decay occurred between weeks 5 to 8 when the number of target segments treated ranged from 0 to 6 (see Table 4.5). On segments that received treatment, the average number of treatment minutes per segment for each week ranged from 45 to 209 minutes – with a minimum of 5 minutes and a maximum of 482 minutes of police presence on any street segment per week during the intervention period.

Redlands

RPD officers provided additional presence on all 15 target segments during 25 weeks of the experiment (81 percent of the intervention period, see Table 4.6). During 19 of those weeks, the mean number of treatment minutes per segment reached or exceeded the targeted 180 minutes. On target segments that received police intervention, the average number of treatment minutes per segment for each week ranged from 35 to 305 minutes, with a minimum of 10 minutes and a maximum of 490 minutes of police presence on any segment per week during the intervention period.

Colton

CPD officers provided additional presence on all of the 10 target segments during 27 weeks of the experiment (87 percent of the intervention period, see Table 4.7). During 17 of those weeks, the average level of treatment per segment reached or exceeded 180 minutes. On target segments that received police interventions, the average number of treatment minutes per

segment for each week ranged from 59 to 334 minutes, with a minimum of 2 minutes and a maximum of 697 minutes of police presence on any segment per week during the intervention period.

Table 4.5: Ontario: Number of Experimental Segments Treated, Mean, Minimum & Maximum Minutes of Police Presence per Segment by Week of Experiment

Week of Experiment	N. Segments Treated/30	Avg. Minutes per Segment	Std. Dev.	Min. Minutes per Segment	Max. Minutes per Segment
1	14	57	27.71	20	95
2	18	72	31.72	15	135
3	22	83	22.27	35	105
4	21	81	40.96	30	135
5	6	60	0	60	60
6	1	45	-	45	45
7	0	-	-	-	-
8	3	47	62.94	10	120
9	19	76	49.93	23	200
10	16	91	74.93	25	242
11	14	80	39.61	20	150
12	18	66	44.02	5	141
13	30	180	99.56	60	482
14	28	125	60.82	35	321
15	17	89	52.85	17	240
16	22	100	65.87	20	275
17	30	189	59.35	100	342
18	30	176	45.91	105	330
19	23	130	40.57	60	215
20	30	208	43.79	120	292
21	30	209	50.86	120	360
22	30	153	27.62	90	225
23	30	162	39.12	61	248
24	30	165	36.53	110	258
25	30	167	35.77	79	263
26	30	170	35.38	120	243
27	30	151	55.14	60	250
28	26	96	31.86	30	120
29	29	173	62.82	58	240
30	0	-	-	-	-
31	0	-	-	-	-
Avg.	20	121	45.85	55	219

Table 4.6: Redlands: Number of Experimental Segments Treated, Mean, Minimum & Maximum Minutes of Police Presence per Segment by Week of Experiment

Week of Experiment	N. Segments Treated/15	Avg. Minutes per Segment	Std. Dev.	Min. Minutes per Segment	Max. Minutes per Segment
1	0	-	-	-	-
2	6	115	93.17	20	240
3	9	35	22.36	10	80
4	13	65	100	15	390
5	15	225	84.22	105	405
6	15	211	68.23	43	350
7	14	227	97.96	124	447
8	15	118	47.77	55	230
9	15	87	63.04	10	185
10	15	202	96.45	90	475
11	15	138	75.94	15	270
12	15	305	93.63	110	450
13	15	268	77.97	125	437
14	15	262	84.16	132	459
15	15	238	59.71	103	381
16	15	215	79.54	90	365
17	15	184	67.61	52	283
18	15	215	40.93	150	316
19	15	227	48.24	175	317
20	15	223	87.24	70	374
21	15	243	94.3	108	490
22	15	209	72.1	105	346
23	15	112	42.97	41	232
24	15	141	48.13	56	264
25	15	219	68.46	90	330
26	15	218	83.9	47	375
27	15	148	79.66	60	280
28	14	155	80.01	30	289
29	15	208	73.09	70	315
30	15	186	41.32	130	290
31	15	174	65.12	75	290
Avg.	13.5	166	64.57	70	293

Table 4.7: Colton: Number of Experimental Segments Treated, Mean, Minimum & Maximum Minutes of Police Presence per Segment by Week of Experiment

Week of Experiment	N. Segments Treated/10	Avg. Minutes per Segment	Std. Dev.	Min. Minutes per Segment	Max. Minutes per Segment
1	5	104	50.92	15	145
2	10	59	40.56	15	115
3	9	61	93.21	5	305
4	10	64	41.76	28	158
5	10	110	209.68	10	697
6	10	62	61.81	8	208
7	10	190	118.38	2	406
8	10	206	89.32	59	351
9	10	200	134.57	34	538
10	10	244	85.67	132	416
11	10	213	47.89	115	283
12	10	236	66.04	160	364
13	10	174	85.19	82	324
14	10	260	72.58	155	394
15	10	240	88.36	120	418
16	10	178	58.09	116	283
17	10	222	36.08	140	270
18	10	156	52.41	60	245
19	10	185	150.03	59	580
20	10	172	82.07	55	307
21	10	226	113.25	82	409
22	10	154	58.04	51	252
23	10	295	88.03	168	413
24	10	143	59.07	60	257
25	10	252	83.84	111	357
26	10	301	110.64	151	487
27	10	334	67.02	229	468
28	10	313	125.32	115	448
29	10	238	111.46	87	389
30	9	149	79.11	11	250
31	0	-	-	-	-
Avg	9	191	85.35	81	351

Average Number of Police Visits to the Treated Segments by Week

Ontario

In Ontario, 99 percent of the police visits to target segments were conducted by single-officer units. Overall, OPD officers averaged two visits per segment during each week of the intervention period. On segments that received treatment, the mean number of visits per segment by week ranged from 1 to 3.5, with a minimum of 1 and a maximum of 11 visits on any segment per week during the experiment (see Table 4.8).

Redlands

Single-officer patrol units carried out 82 percent of police visits to target segments in Redlands. Occasionally, on Thursday, Friday and Saturday nights, one or more two-officer units worked on the target segments. Overall, RPD officers averaged five visits per segment during each week of the intervention. On street segments that received intervention, the average number of visits per segment by week ranged from 1.56 to 10.47; with a minimum of 1 and a maximum of 20 police visits on any segment per week during the intervention period (see Table 4.9).

Colton

In Colton, 95 percent of police visits to target segments were conducted by single-officer units. Overall, officers in Colton averaged 4 visits per segment for each week of the intervention period. On segments that received police intervention, the average number of visits per segment by week ranged from 1 to 6.3, with a minimum of 1 and a maximum of 13 visits on any segment per week during the experiment (see Table 4.10).

Table 4.8: Ontario: Number of Experimental Segments Treated, Mean, Minimum and Maximum Visits per Segment by Week of Experiment

Week of Experiment	N. Segments Treated/30	Avg. Visits per Segment	Std. Dev.	Min. Visits per Segment	Max. Visits per Segment
1	14	1.36	0.5	1	2
2	18	1.89	0.9	1	4
3	22	1.77	0.43	1	2
4	21	1.67	0.91	1	3
5	6	1	0	1	1
6	1	1	0	1	1
7	0	-	-	-	-
8	3	1	0	1	1
9	19	2.37	1.42	1	6
10	16	2.44	1.36	1	5
11	14	2.14	0.86	1	4
12	18	2.17	1.38	1	6
13	30	3.5	2.22	1	11
14	28	2.64	1.59	1	8
15	17	2.35	1.54	1	7
16	22	1.95	1.25	1	6
17	30	3.3	1.06	2	6
18	30	3.43	1.36	2	9
19	23	2.26	0.75	1	4
20	30	3.5	0.78	2	5
21	30	3.37	0.67	2	4
22	30	2.93	0.37	2	4
23	30	2.73	0.58	2	4
24	30	2.77	0.57	2	4
25	30	2.97	0.41	2	4
26	30	2.8	0.55	2	4
27	30	2.5	0.9	1	4
28	26	1.77	0.43	1	2
29	29	2.9	1.08	1	4
30	0	-	-	-	-
31	0	-	-	-	-
Avg.	20	2.37	0.85	1	4.5

Table 4.9: Redlands: Number of Experimental Segments Treated, Mean, Minimum and Maximum Visits per Segment by Week of Experiment

Week of Experiment	N. Segments Treated/15	Avg. Visits per Segment	Std. Dev.	Min. Visits per Segment	Max. Visits per Segment
1	-	0	-	-	-
2	6	2.33	1.03	1	4
3	9	1.56	0.73	1	3
4	13	1.77	0.83	1	3
5	15	5.47	1.3	3	8
6	15	6.8	1.86	3	10
7	14	5.93	1.21	4	8
8	15	3.2	1.42	1	5
9	15	3.33	1.63	1	6
10	15	4.47	1.64	2	7
11	15	4.67	2.26	1	8
12	15	10.47	4.67	5	20
13	15	8.2	1.9	6	12
14	15	7.67	2.32	5	12
15	15	7.4	1.92	4	10
16	15	5.93	2.15	3	11
17	15	6.07	2.05	3	10
18	15	6.67	2.26	4	12
19	15	6.93	2.55	4	13
20	15	6.6	1.92	2	10
21	15	8.2	2.18	5	12
22	15	6.8	2.24	3	11
23	15	3.07	1.39	1	6
24	15	4.4	1.06	3	6
25	15	5.53	1.73	3	8
26	15	5.13	1.64	3	8
27	15	4	1.96	1	8
28	14	4	2.22	1	9
29	15	5.47	1.77	2	9
30	15	5.8	1.66	3	9
31	15	5.4	2.23	3	10
Avg.	14	5.27	1.86	2.73	8.9

Table 4.10: Colton: Number of Experimental Segments Treated, Mean, Minimum and Maximum Visits per Segment by Week of Experiment

Week of Experiment	N. Segments Treated/10	Avg. Visits per Segment	Std. Dev.	Min. Visits per Segment	Max. Visits per Segment
1	5	1	0	1	1
2	10	3.5	1.9	1	7
3	9	2.11	1.27	1	4
4	10	4.1	0.99	3	6
5	10	2.7	1.42	1	6
6	10	2.2	0.92	1	4
7	10	5.2	3.29	1	13
8	10	5.1	1.52	2	7
9	10	4.2	2.1	2	9
10	10	5.5	1.58	3	8
11	10	5	1.7	2	8
12	10	4.6	1.35	3	7
13	10	4.5	1.58	2	7
14	10	5.1	1.2	3	7
15	10	5.1	1.6	2	7
16	10	3.8	1.23	2	6
17	10	4.4	0.7	4	6
18	10	3	1.05	1	4
19	10	3.5	1.08	2	5
20	10	3.3	1.49	1	6
21	10	4.9	2.08	3	9
22	10	3	1.05	1	5
23	10	5.5	1.96	3	8
24	10	2.5	1.08	1	4
25	10	4.5	1.35	3	7
26	10	5.6	1.51	4	8
27	10	6.3	1.57	4	9
28	10	5.9	2.56	2	9
29	10	4.7	2.06	2	7
30	9	2.56	1.13	1	4
31	0	-	-	-	-
Avg.	9	4.11	1.48	2.07	6.6

Summary of Average Minutes and Frequency of Police Presence on Treated Segments by Week

Overall, officers in Redlands and Colton averaged more frequent visits per segment per week compared to Ontario (5.27 and 4.11, respectively, compared to 2.37 for Ontario). Additionally, police in Redlands and Colton averaged more time spent at the target segments per week than what was delivered in Ontario (Redlands=166 minutes per segment per week; Colton=191 minutes per segment per week; Ontario=121 minutes per segment per week). One-way ANOVA analyses confirmed a significant difference between the three cities in both the average number of treatment minutes for each week of the intervention period ($F = 10.33$, $p. = .000$) and the average number of patrol visits per week ($F = 31.65$, $p. = .000$).

Dosage by Day of Week and Time of Day

Dosage by Day of the Week

In Ontario, 75 percent of police visits to target segments were carried out between Tuesday and Friday, with Tuesdays being the busiest day for police intervention activities (20 percent of all visits) (see Table 4.11). Only 7 percent of visits occurred on both Saturdays and Sundays.

In Redlands, 63 percent of police visits took place at the end of the week – between Thursday and Saturday. Thursdays were the busiest days (24 percent of all visits), and the fewest visits were conducted on Sundays (5 percent of all visits).

In Colton, 76 percent of all patrol visits took place on weekdays between Monday and Thursday. Similar to Ontario, Tuesdays were also the busiest days in Colton, amounting to 23 percent of all visits. In contrast, only 3 percent of police visits were conducted on Sundays.

Table 4.11: All Cities: Frequency of Police Visits to Experimental Segments by Day of the Week

	ONT		RED		COL	
	%	N	%	N	%	N
SUN	7	114	5	123	3	37
MON	11	185	8	184	17	214
TUES	20	336	12	284	23	280
WED	19	305	11	276	20	246
THURS	18	300	24	585	16	191
FRI	18	288	22	536	12	142
SAT	7	115	17	417	9	114
TOTAL	100	1643	100	2405	100	1224

Dosage by Time of Day

The majority of police visits to target segments in Ontario occurred between 8:00 am and 3:59 pm (50 percent), while the majority of police visits to streets in Redlands and Colton occurred between 4:00 pm and 11:59 pm (46 percent and 53 percent, respectively) (see Table 4.12). Additionally, there was late night police presence on target segments in Ontario and Redlands, but very little late night activity in Colton. Officers in Redlands conducted 19 percent of their visits between 12:00 am and 7:59 am, while officers in Ontario conducted 16 percent of their visits to target segments during this time frame. However, Colton officers conducted only 5 visits to target segments during these hours.

Table 4.12: All Cities: Frequency of Police Visits to Experimental Segments by Time of Day

	ONT		RED		COL	
	%	N	%	N	%	N
12:00 am – 7:59 am	15.5	255	19.4	467	0.4	5
8:00 am – 3:59 pm	50.3	827	34.7	835	46.2	566
4:00 pm – 11:59 pm	34.1	561	45.9	1103	53.0	1220
TOTAL	99.9	1643	100	2405	99.6	1224

Summary of Dosage by Day and Time

For all experimental cities, police visits to target segments on Mondays, Tuesdays and Wednesdays most frequently occurred between 8:00 am and 3:59 pm, while visits on Thursdays, Fridays, Saturdays and Sundays most often occurred between 4:00 pm and 11:59 pm (not shown in tables). Late night visits (midnight to 7:59 am) were conducted in Redlands and Ontario at a reasonable interval, but only 5 late night visits were conducted in Colton.

Dosage by Target Segment

The following sections examine the levels of average treatment delivered to target segments by city, and differences in level of treatment across the study street segments within each city. Specifically, the number of weeks each segment was visited at least once, the average number of visits to each segment per week, and the average amount of time spent at each segment per visit are examined.

Ontario

In Ontario, none of the 30 target segments received treatment dosage during every week of the implementation period (see Table 4.13). Two segments received the minimum dosage (being treated 16 of the 31 weeks, or 52 percent of the intervention period); four segments received the maximum dosage (24 of the 31 weeks, or 77 percent of the intervention period). Overall, OPD averaged 2.6 visits to each segment per week (during weeks the street was treated), and spent an average of 54 minutes on each segment per visit.

Redlands

In Redlands as in Ontario, none of the 30 segments received treatment during every week of the implementation period (see Table 4.14). One segment received the minimum dosage (being treated 27 of the 31 weeks, or 87 percent of the intervention period); three segments

received the maximum dosage (being treated 30 of the 31 weeks, or 97 percent of the intervention period). Overall, the RPD averaged 6 visits to each street segment per week (during weeks the segment was treated), with an average of 34 minutes spent at each segment per visit. As such, Redlands officers conducted roughly twice the frequency of visits as Ontario, but spent about half as much time per visit.

Colton

In Colton as in both other cities, none of the 30 segments received treatment during every week of the implementation period (see Table 4.15). One segment received the minimum dosage (being treated 28 of the 31 weeks, or 90 percent of the intervention period); four segments received the maximum dosage (being treated 30 of the 31 weeks, or 97 percent of the intervention period). Overall, CPD averaged four visits to each street segment per week (during weeks the segment was treated), with an average of 46 minutes spent on each segment per visit. Officer visits to targeted street segments occurred more frequently than they did in Ontario, but less frequently than Redlands. However, the average number of minutes per visit was greater than Redlands, but less than Ontario.

Table 4.13: Ontario: Number of Weeks Treated, Mean Minutes per Visit, Mean Visits per Week, Hours of Treatment per Week, for Each Experimental Segment

Segment ID Number	N. of Weeks Treated	Avg. Minutes per Visit	Avg. Visits per Week Treated	Avg. Hours per Week Treated
104	22	53	2.2	2
105	20	47	2.7	2.1
106	19	49	2.7	2.2
107	22	52	2.7	2.3
108	16	62	2.1	2.2
109	25	64	2.6	2.7
110	24	67	2.3	2.6
111	19	56	2.6	2.5
112	19	60	2.5	2.5
113	19	53	2.7	2.4
114	21	62	2.3	2.4
115	16	59	2.6	2.6
116	25	53	2.7	2.4
117	17	46	2.8	2.1
118	22	43	3.1	2.3
119	24	55	2.8	2.6
120	20	60	2.5	2.5
121	21	42	3.4	2.4
122	23	49	2.4	1.9
123	24	53	2.5	2.2
124	19	56	2.3	2.2
125	22	62	2.4	2.4
126	20	55	2.5	2.2
127	19	53	2.6	2.3
128	25	46	3	2.3
129	25	44	2.8	2
130	20	52	3	2.6
104	22	53	2.2	2
105	20	47	2.7	2.1
106	19	49	2.7	2.2
Avg.	21	54	2.62	2

Table 4.14: Redlands: Number of Weeks Treated, Mean Minutes per Visit, Mean Visits per Week, Hours of Treatment per Week, for Each Experimental Segment

Segment ID Number	N. of Weeks Treated	Avg. Minutes per Visit	Avg. Visits per Week Treated	Hours per Week Treated
1	29	38	4.6	2.9
2	30	38	5.2	3.3
3	28	37	5.9	3.6
4	28	29	6.6	3.2
5	29	33	6.8	3.8
6	28	37	4.9	3
7	29	37	5.2	3.2
8	28	35	5.1	3
9	30	29	6.5	3.2
10	30	37	5.3	3.3
11	29	36	5.4	3.2
12	29	29	5.5	2.7
13	28	34	5.2	2.9
14	27	34	5.6	3.1
15	29	31	6	3
Avg.	29	34	6	3

Table 4.15: Colton: Number of Weeks Treated, Mean Minutes per Visit, Mean Visits per Week, Hours of Treatment per Week, for Each Experimental Segment

Segment ID Number	N. of Weeks Treated	Avg. Minutes per Visit	Avg. Visits per Week Treated	Hours per Week Treated
201	28	46	3.5	2.7
202	29	41	3.9	2.6
203	29	42	4.7	3.3
204	29	38	5	3.2
205	30	48	3.9	3.2
206	29	49	4.4	3.6
207	30	46	4	3
208	30	57	4.4	4.2
209	30	51	4.3	3.6
210	29	47	3.7	2.9
Avg.	29	47	4	3

Summary of Average Minutes and Frequency of Police Presence by Segment

Overall, officers in Redlands and Colton averaged more frequent visits to each target segment (6 per segment for each week treated, and 4 per segment for each week treated, respectively) and for shorter durations (34 minutes per visit in Redlands; 47 minutes per visit in Colton) compared to officers in Ontario, who averaged 3 visits per segment for each week treated, for 54 minutes per visit. One-way ANOVA analyses confirm a significant difference in the mean number of minutes per visit between the three cities ($F = 97.2$, $p = .000$), and mean number of visits to segments per week treated ($F = 232.83$, $p = .000$).

Social Disorders and Actions Taken by City

The log form (see Appendix D) included a list of 16 social disorders, and an "other" category. These disorder types included the following: destruction of property, drinking in public, drug activity, fist fight, littering, loitering, noise, pedestrian stops/questioning, prostitution, public urination, soliciting for money, suspicious or erratic behavior, theft from vehicle, traffic (stop),[18] vandalism and verbal dispute.

In addition to recording the social disorders observed during each police visit to a street segment, officers were instructed to indicate the number of specific actions they took to address disorders on the log form. For social disorders, the actions that could be taken included: 1) talking to a citizen or victim (as opposed to a suspect); 2) talking to a suspect/offender (officers were instructed to indicate that they "talked to a suspect" only if that was the only action taken); 3) mediating or counseling the subject(s) involved; 4) carrying out a field interview; 5)

[18] While traffic stops may not appear to be a form of social disorder typically included in broken windows policing efforts, they are nevertheless consistent with our study's goal of assessing the impact of heightened police activity at street segments on the perceptions and attitudes of individuals who work or live on the targeted streets. Additionally, traffic stops have been used as a proxy for aggressive policing in past research (e.g., Wilson and Boland, 1981) which helped inform the development of the broken windows thesis (Wilson and Kelling, 1982).

conducting a stop-and-frisk; 6) issuing a warning or advising subject; 7) arresting a suspect; 8) issuing a citation; and 9) another action taken. Officers were asked to indicate the number of times each action was taken to address a specific type of disorder (e.g. an officer may have conducted two stop-and-frisks (N=2), made an arrest (N=1), and issued a citation (N=1) in the course of addressing one type of disorder. However, officers did not identify the number of incidents of a type of disorder during each visit. For example, officers in Colton observed traffic disorder(s) during 427 visits to target segments; however, they recorded talking to 649 "suspects" in the process of addressing traffic disorders (conducting traffic stops) (see Table 4.18). Therefore, during some of the 427 visits during which traffic disorders were observed, multiple incidents of traffic disorders were observed.

Ontario

The most commonly recorded social disorder in Ontario was pedestrians (checks) (N=154), followed by loitering (N=86), traffic stops (N=81), noise (N=18) and drinking in public (N=15) (see Table 4.16). The most frequent action taken by officers was warning/advising, (N= 393), followed by talking to citizens/victims (N=214) and carrying out field interviews (N=180). The actions least likely to be taken were mediation (N=37) or issuing a citation (N=38). Ontario officers made fewer arrests (N=43) during their visits to target segments than officers in Redlands or Colton.

Redlands

In Redlands, the social disorder most frequently recorded was traffic stops (N=231), followed by pedestrians (checks) (N=208), loitering (N=63), fist fights (N=36), and drinking in public (N=32) (see Table 4.17). As in Ontario, warning/advising was also the most common action taken by Redlands officers (N=832), followed by talking to citizens/victims (N= 620).

The action least likely to be taken was issuing a citation (N=38). Redlands officers made 91 arrests during their visits to target segments.

Colton

The most common social disorder recorded by officers in Colton was traffic (stops) (N=427), followed by pedestrian (checks) (N=170), and drinking in public (N=12) (see Table 4.18). Colton officers were most likely to talk to suspects/offenders involved in social disorders (N=888), followed by issuing a warning/advisement (N=671). The action least likely to be taken was mediation (N=63). Colton officers made more arrests during their visits to target segments (N = 116) than officers in the other sites. As in Ontario and Redlands, most arrests were made in the process of a traffic stop or a pedestrian check.

The frequency of traffic stops and pedestrian checks was addressed by a Colton PD officer during the post-intervention focus group:

> "I'll give an example, we go on (*specific target segment)*. I go up there, and you know, with just your presence there people really aren't doing a whole lot. If you want to find something you really got to search for it. If nothing was going on when I got there I'd pretty much just do traffic stops or ped [sic] checks."

Table 4.16: Ontario: Social Disorders and Actions Taken

Social Disorder Type	N. Visits Observed	N. Citizens/ Victims Talked to	N. Suspects Talked to	N. Suspects Mediated	N. Field Interviews Conducted	N. Stop & Frisks	N. Warnings	N. Citations	N. Arrests	N. Other Actions	Total Actions
Drinking in public	15	1	5	-	9	12	24	2	-	2	55
Drug activity	2		2	-	-		2	-	-	-	4
Fist fight	5	2	6	-	4	-	-	-	5	-	17
Littering	5	1	-	-	2	-	3	-	-	1	7
Loitering	86	50	35	7	43	11	127	1	10	7	291
Noise	19	2	7	-	-	-	23	-	-	3	35
Pedestrian(s) (check)	154	38	22	7	91	53	106	2	12	6	337
Prostitution	3	-	-	-	2	-	2	-	-	-	4
Public urination	2	-	-	-	2	1	1	2	-	-	6
Soliciting for money	4	1	1	-	1	-	4	1	-	-	8
Suspicious/erratic behavior	8	3	3	1	1	-	9	1	1	1	20
Theft from vehicle	3	2	1	-	1	-		-	-	-	4
Traffic (stops)	81	8	18	1	20	11	67	25	10	10	170
Vandalism	1	5	3	3		-	3	-	-	-	14
Verbal dispute	5	3	3	2	1	-	3	1	1	-	14
Other	95	98	11	16	3	1	19	3	4	30	185
Total	488	214	117	37	180	89	393	38	43	60	1171

Table 4.17: Redlands: Social Disorders and Actions Taken

Social Disorder Type	N. Visits Observed	N. Citizens/ Victims Talked to	N. Suspects Talked to	N. Suspects Mediated	N. Field Interviews Conducted	N. Stop & Frisks	N. Warnings	N. Citations	N. Arrests	N. Other Actions	Total actions
Destruction of property	5	1	3	1	6	20	10	1	-	-	42
Drinking in public	32	21	14	6	9	13	50	2	3	2	120
Drug activity	11	5	8	3	10	10	8	3	4	3	54
Fist fight	36	20	2	2	36	33	28	3	8	5	137
Littering	11	-	6	2	1	-	5	-	-	3	17
Loitering	63	123	64	43	29	41	142	1	1	8	452
Noise	16	6	11	32	9	14	10	-	-	1	83
Pedestrian(s) (check)	208	181	16	13	123	107	156	4	16	39	655
Public urination	10	-	-	1	-	-	11	-	-	-	12
Soliciting for money	9	2	4	2	3	-	8	-	-	1	20
Suspicious/erratic behavior	26	5	14	1	24	18	16	5	4	5	92
Theft from vehicle	5	9	-	-	4	3	-	-	3	6	25
Traffic (stops)	231	36	165	18	105	109	255	11	27	50	776
Vandalism	4	-	-	-	-	2	-	-	2	-	4
Verbal dispute	25	11	12	12	2	3	34	-	4	-	78
Other	157	200	10	41	11	25	99	4	19	31	440
Total	849	620	329	177	372	398	832	34	91	154	3007

Table 4.18: Colton: Social Disorders and Actions Taken

Social Disorder Type	N. Visits Observed	N. Citizens/ Victims Talked to	N. Suspects Talked to	N. Suspects Mediated	N. Field Interviews Conducted	N. Stop & Frisks	N. Warnings	N. Citations	N. Arrests	N. Other Actions	Total Actions
Destruction of property	1	-	-	-	-	2	-	2	2	-	6
Drinking in public	12	1	8	-	1	5	13	2	2	1	33
Drug activity	6	-	5	3	4	5	3	2	5	-	27
Fist fight	1	-	-	-	-	-	-	-	1	-	1
Littering	2	1	-	1	-	-	1	-	-	-	3
Loitering	7	1	13	-	7	4	12	-	1	-	38
Noise	3		1	-	-	-	-	-	-	-	1
Pedestrian(s) (check)	170	8	185	19	84	88	163	11	20	-	578
Public urination	2	-	-	-	-		1	-	-	-	1
Soliciting for money	-	-	-	-	-	-	-	-	-	-	-
Suspicious/erratic behavior	5	4	6	4	4	2	-	2	2	-	24
Theft from vehicle	4		2	-	1	-	2	1	1	-	7
Traffic (stops)	427	13	649	27	71	58	462	310	68	27	1685
Vandalism	-	-	-	-	-	-	-	-	-	-	-
Verbal dispute	7	1	9	4	-	-	7	-	1		22
Other	41	526	10	5	2	-	7	84	13	70	717
Total	688	555	888	63	174	164	671	414	116	98	4075

Physical Disorders by City

The activity form also included a list of 11 physical disorders, and an "other" category: abandoned vehicle, broken glass, building code violation, graffiti, inadequate lighting, litter/trash, illegal dumping, parking, shopping cart, unattended dogs, vehicle–other (other than abandoned or illegally parked vehicles). Each time an officer visited a target segment, they were instructed to note whether they observed any of the listed disorders.

For physical disorders, the actions that could be taken to address each problem included: 1) issuing a citation, 2) any other action taken, 3) making a referral to a person or agency to address the disorder. However, the data collected regarding actions taken for physical disorders are inconsistent; therefore, only the number of visits during which physical disorders were observed are presented for each city in Table 4.19.

Table 4.19: Number of Visits During Which Types of Physical Disorders Were Observed by City

	N. Visits Type of Disorder Was Observed by City		
Physical Disorder Type	*Ontario*	*Redlands*	*Colton*
Abandoned vehicle	37	24	47
Broken glass	7	16	4
Bldg. Code violation	17	6	8
Graffiti	179	37	29
Inadequate lighting	17	19	2
Litter/trash	156	39	37
Illegal dumping	32	5	6
Parking	78	32	42
Shopping cart	152	27	27
Unattended dogs	12	17	3
Vehicle other	14	19	49
Other	29	25	43
Total	730	266	297

Ontario

Ontario officers recorded a total of 730 observed physical disorders. The most frequently recorded physical disorder was graffiti (N=179), followed by litter/trash (N=156), and shopping carts (N=152). Broken glass was the least commonly recorded disorder (N=7), followed by unattended dogs (N=12). One officer in Ontario had the following comment about their efforts to deal with physical disorder:

> "In one weekend we visited every segment and decided we weren't going to go home until we found a broken window and I think we probably found one. We thought it was kind of interesting that we couldn't find any broken windows, just a lot of graffiti and a lot of trash" (Ontario PD officer, Post-intervention focus group).

Redlands

Redlands officers recorded a total of 266 physical disorders, the most frequent of which was litter/trash (N=39), followed by graffiti (N=37), and parking (N=32). Illegal dumping and building code violations were the least often recorded disorders (N=5 and 6, respectively).

Colton

In Colton, out of a total 297 physical disorders recorded, the most common were vehicle disorders (N=49; other than abandoned vehicles or parking), followed by abandoned vehicles (N=47), and parking (N=42). This may be a function of Colton assigning a parking officer to the experiment, as following these physical disorders, litter/trash, and graffiti were the most frequently recorded (N=37 and 29 respectively), similar to both Ontario and Redlands. Poor or inadequate lighting (N=2) and unattended dogs (N=3) were the least common recorded disorders.

Physical and Social Disorders and Actions Taken by Segment

Ontario

The average number of physical disorders problems identified per segment was 25, with a minimum of 3 and a maximum of 56 (see Table 4.20). The mean number of social disorders reported per segment was 17, with a minimum of 2 and a maximum of 31. On 18 of 30 street segments (60 percent of all segments) more physical disorders were reported by the intervention team than social disorders.

On one of the segments (Segment #102) social disorders were only observed during 2 of the 47 visits (4 percent), and officers did not take any of the listed actions. On 6 additional segments, social disorders were observed fewer than less than 10 police visits. Social disorders were reported most frequently on Segment #117, during 31 out of 47 visits (66 percent of all visits).

The intervention activities taken to address social disorders were not evenly distributed by street segment. While warnings/advisements were issued on all but one segment (29 out of 30), field interviews were conducted on all but 5 of the segments (25 of 30). Stop and frisks were conducted on 21 of the 30 segments; citations were only issued on 15 of 30 segments; officers provided mediation for suspects involved in social disorders on only 10 of 30 segments; and all arrests took place on 11 segments.

Table 4.20: Ontario: Number of Visits to Segments, Number of Physical and Social Disorders Observed, and Number of Actions Taken for Social Disorders by Segment

Seg. ID Number	N. Visits	Total Phys. Dis.	Total Soc. Dis.	N. Sus. Med.	N. Field Int. Cond.	N. Stop & Frisks	N. Warn.	N. Cite.	N. Arrests	Sum Actions
101	57	31	25	8	11	2	14	1	8	44
102	47	20	2	0	0	0	0	0	0	0
103	44	8	17	0	9	3	16	0	0	28
104	49	23	21	0	6	4	26	1	1	38
105	54	18	12	0	0	2	6	0	0	8
106	52	30	6	0	3	0	1	1	0	5
107	59	21	23	0	16	4	10	2	4	36
108	34	8	18	3	7	4	11	0	3	28
109	64	39	25	0	6	8	21	3	4	42
110	56	3	13	0	0	0	7	3	2	12
111	50	14	20	3	6	0	27	0	0	36
112	48	56	19	4	9	6	15	1	0	35
113	52	51	8	0	3	1	10	0	0	13
114	49	10	3	0	0	0	1	0	0	1
115	42	3	3	0	0	0	1	0	0	1
116	68	16	18	0	1	0	13	8	0	22
117	47	30	31	10	12	3	32	2	4	63
118	69	41	29	0	11	20	24	2	6	63
119	67	19	27	0	6	7	18	1	0	32
120	50	28	7	0	2	4	3	1	0	10
121	72	42	22	3	14	2	15	7	2	43
122	55	23	26	0	11	1	33	0	0	45
123	61	34	11	0	5	1	4	0	0	10
124	44	15	13	0	3	3	10	0	0	16
125	52	36	11	1	6	0	6	0	0	14
126	49	26	29	1	10	0	39	1	0	51
127	49	17	12	0	2	1	9	0	0	12
128	74	30	6	2	1	2	3	0	1	9
129	69	42	10	0	2	2	6	0	0	10
130	60	22	28	2	18	7	15	1	7	50
Total	1643	756	495	37	180	87	396	35	42	777
Avg.	55	25	17	1	6	3	13	1	1	26

Redlands

In Redlands the average number of physical disorders identified per segment was 18, with a minimum of 8 and a maximum of 36 (see Table 4.21). Social disorders averaged 57 per segment, with a minimum of 28 and a maximum of 119 (range of 91). Unlike Ontario, on all but one target segment the number of social disorders reported outnumbered the number of physical disorders by 1.5 to 6.6 times.

Social disorders were reported on Segment #3 least frequently, during only 28 of the 164 visits to the segment (17 percent). Social disorders were reported most frequently on Segment #5, during 119 of the 197 visits to the street segment (60 percent). In addition, the most field interviews (N=45), stop & frisks (N=60) and arrests (N=15) were conducted on this segment.

The police actions taken to address social disorders were much more evenly distributed by segment in Redlands than in Ontario. Stop-and-frisks, warnings/advisements, and arrests were conducted on all 15 segments. Moreover, officers provided mediation for suspects involved in social disorders, or conducted field interviews on all but one of the 15 segments. Citations were issued on 11 of the 15 segments.

Table 4.21: Redlands: Number of Visits to Segments, Number of Physical and Social Disorders Observed, and Number of Actions Taken for Social Disorders by Segment

Seg. ID Number	N. Visits	Total Phys. Dis.	Total Soc. Dis.	N. Sus. Med.	N. Field Int. Cond.	N. Stop & Frisks	N. Warn.	N. Cite.	N. Arrests	Sum Actions
1	134	10	33	2	16	10	36	1	3	68
2	156	8	68	75	43	25	102	0	7	252
3	164	13	28	0	0	1	24	1	2	28
4	185	18	44	3	10	3	25	1	2	44
5	197	18	119	18	45	60	132	6	15	276
6	137	31	31	7	35	37	11	0	5	95
7	151	31	48	3	23	30	25	5	4	90
8	142	10	44	18	15	15	87	1	3	139
9	196	36	62	9	38	39	42	4	7	139
10	158	21	81	26	18	37	134	1	6	222
11	157	10	52	2	16	43	45	2	8	116
12	160	21	56	5	39	29	31	8	9	121
13	145	14	52	2	25	19	49	0	2	97
14	150	16	66	1	25	24	54	4	9	117
15	173	19	65	6	26	26	37	0	9	104
Total	2405	276	849	177	374	398	834	34	91	1908
Avg.	160	18	57	12	25	27	56	2	6	127

Colton

In Colton the average number of physical disorders identified per segment was 33, with a minimum of 13 and a maximum of 66 (see Table 4.22). Like Redlands, more social disorders were identified per segment, with an average of 69 per segment and a range of 56. On all but two segments, the number of social disorders identified was 1.5 to 5 times greater than the number of physical disorders.

Social disorders were reported on Segment #206 least frequently, during only 43 of 127 visits to the segment (34 percent). Social disorders were reported most frequently on Segment #208, during 99 of 133 visits to the segment (74 percent). The most stop-and-frisks (N=32), and arrests (N=21) were conducted on this street as well. Every police activity taken to address social disorders was taken at least once on every segment in Colton.

Table 4.22: Colton: Number of Visits to Segments, Number of Physical and Social Disorders Observed, and Number of Actions Taken for Social Disorders by Segment

Seg. ID Number	N. Visits	Total Phys. Dis.	Total Soc. Dis.	N. Sus. Med.	N. Field Int. Cond.	N. Stop & Frisks	N. Warn.	N. Cite.	N. Arrests	Sum Actions
201	98	13	58	5	19	21	54	31	11	141
202	112	49	44	1	10	7	38	18	7	81
203	136	20	75	8	18	18	52	39	12	147
204	146	18	85	21	32	21	71	129	17	291
205	118	25	77	11	27	17	53	43	12	163
206	127	66	43	3	14	14	56	15	4	106
207	119	54	76	4	17	19	92	30	15	177
208	133	20	99	8	23	32	88	51	21	223
209	128	26	76	1	11	9	95	46	12	174
210	107	37	55	1	3	6	73	13	5	101
Total	1224	328	688	63	174	164	672	415	116	1604
Avg.	122	33	69	6	17	16	67	42	12	160

Summary: Physical and Social Disorders and Actions Taken by Segment

In Redlands and Colton the number of social disorders recorded per street segment was generally greater than the number of physical disorders recorded per segment, while in Ontario the number of physical disorders per street segment was greater than the number of social disorders for 60 percent of the target segments. This may be due to a difference between the cities in frequency of officer visits to segments and average time per visit. It is possible that Ontario officers encountered social disorders on arrival at a segment and provide a deterrent effect for the duration of their visit, which could explain the difference given that they made fewer visits and stayed longer per visit than was seen in the other two cities. The quote below from an Ontario officer speaks to this possibility.

> "When I was there in a black and white police car there was actually no criminal activity going on the entire time I was there. It's obvious, if a police car is going to be there for two hours or an hour nothing is going to be happening in that particular hundred block." (Ontario PD officer, Post-intervention focus group).

Finally, one limitation in this area of our study is that we lack quantitative data measuring the activities other city agencies undertook in dealing with reported disorder issues such as cleaning up graffiti and trash. However, in our interviews with project officers after the intervention, it was clear that all three cities had working relationships with agencies responsible for this work. Officers from each department indicated that reported physical disorder problems were generally quickly cleaned up by the responsible agencies, which were all aware of, and supportive of, the broken windows initiative. Code enforcement officers were also at times involved in accompanying project officers during sweeps of targeted segments.

Summary

This chapter provided a detailed overview of the police intervention carried out during this experiment. The intervention was designed to have police address every social or physical disorder they encountered on target segments, but also to use arrest and citations as a last resort. As discussed at the beginning of the chapter, the goal of the study was to test broken windows policing as outlined by Wilson and Kelling (1982; see also, Kelling & Coles, 1996), rather than the strict, zero tolerance approaches to fighting crime and disorder.

As the discussion of the intervention shows, there were some hiccups in the implementation of the treatment throughout the study period. There were issues with getting full treatment implementation at the outset of the experiment and some cities experienced treatment decay during the middle and end of the extended intervention period. Nevertheless, the numbers presented in this chapter show that there clearly was a significant intervention delivered by police over the study period. First, the data presented show that there was police presence on the target street segments during the study period. The intended dosage was three hours (180 minutes) of police presence per target segment per week. Two cities fell short of this on average, while one exceeded the 180 minutes. Specifically, Ontario averaged 121 minutes of extra police presence per segment per week of the study, while Redlands averaged 166 minutes and Colton 191 minutes.

Second, the information on the number of social and physical disorders encountered and the activities taken by police to deal with social disorders show that the police were active in combating disorder on the target segments. In total, across the 55 target segments, police dealt with 2,025 social disorder incidents (including traffic stops) and 1,293 incidents of physical disorder. Thus, in total, 3,318 incidents of disorder were addressed.

As such, despite some setbacks in implementation, there is clear evidence that police both increased presence in the 55 target segments and took active steps in combating social and physical disorder in these areas. As such, there is no reason to believe that the periodic setbacks in implementation pose a major threat to the internal validity of the study. Nonetheless, these issues should be kept in mind when interpreting the results presented in the following chapter.

Chapter 5: Results

Having outlined the study design in the previous chapters, we now turn to the results of our analyses which aimed to answer the following research questions presented in chapter 1:

1. What is the impact of broken windows policing on fear of crime among residents[19] of the targeted hot spots?

1. What is the impact of broken windows policing on police legitimacy in the targeted hot spots?

2. What is the impact of broken windows policing on reports of collective efficacy in the targeted hot spots?

3. Is broken windows policing at hot spots effective in reducing both actual and perceived levels disorder and crime in the targeted hot spots?

Impact of Broken Windows Policing at Hot Spots on Fear of Crime

As noted in chapter 1, the broken windows model of policing is unique in that it is based on a hypothesis about how crime develops at places (see Wilson and Kelling, 1982). In a nutshell, the broken windows idea suggests that untended disorder increases fear, which leads residents to withdraw and thus leaves communities more vulnerable to criminal invasion. As such, in Wilson and Kelling's (1982) view, a key role of the police is to combat disorder and thereby reduce fear of crime and hopefully empower residents to again exert informal social controls. Thus a key assumption of the broken windows model is that delivering the tactic to problem areas should reduce fear of crime.

However, this assumption has not been directly tested, and a key goal of our study was to assess whether aggressive order maintenance policing at hot spots would have impacts on fear of

[19] The results presented in this chapter here are results from analysies using every respondent—both residents and business managers/supervisors—who completed both the pre- and post-intervention surveys. We acknowledged that there was a potential for differences across residential and business respondents. As such we also ran every analysis on each sample (business and residential) separately. The results of these separate analyses showed no substantive differences from the overall analyses presented in this chapter and thus are not presented in this report.

crime. Hinkle and Weisburd (2008) have suggested, based on a non-experimental set of analyses, that such tactics may increase fear of crime because citizens may infer from heightened police presence that crime is getting worse on their street. Others such as Dennis Rosenbaum have also suggested that hot spots tactics more generally may increase fear either through the increased presence or a simple labeling affect from having one's home area targeted as a hot spot by police. This is clearly contrary to Wilson and Kelling's (1982), and later broken windows policing advocates', suggestions that order maintenance policing will reduce fear by cleaning up disorder and eventually empower residents to exert informal social control.

Our results do not support either position, and suggest that broken windows policing at hot spots does not strongly influence levels of fear among people who live on affected streets—at least with dosage at the level we observed in the current study (see chapter 4). Our first measure, shown in Table 5.1, is a measure of perceived risk based on questions asking survey respondents how likely they thought they would become victims of various crimes in the next sixth months. The analysis shows a modest decline in fear in the target areas which was slightly larger than the decline observed in the control areas, but the ANOVA analysis shows the impact of the police intervention is not statistically significant. The second measure, shown in Table 5.2, is a fear measure adapted from the National Crime Victim Survey which assessed fear in walking alone at night on the respondent's street segment. There is very little change in both groups in this case and, reflecting this, the observed significance levels are not close to conventional levels.

Table 5.1—Analysis of Fear of Crime: Perceived Risk Measure
Mean Change in Perceived Risk: Pre- to Post-intervention by Area

City	Mean Change	Std. Deviation
Target Segments (N=192)	-1.01	4.51
Control Segments (N=179)	-0.79	4.25

ANOVA Results

Source	Type 3 Sums of Squares	df	F	Sig.
Corrected Model	106.760	5	1.114	.352
Intercept	251.159	1	13.106	.000
Treatment	18.257	1	.953	.330
City	35.779	2	.934	.394
Treatment * City	57.650	2	1.504	.224
Error	6994.752	365		
Total	7405.385	371		
Corrected Total	7101.512	370		

R-Squared= .015 (Adjusted R Squared= .002)

Table 5.2—Analysis of Fear of Crime: Safe Walking at Night Question
Mean Change in Safe Walking at Night Question: Pre- to Post-intervention by Area

City	Mean Change	Std. Deviation
Target Segments (N=192)	0.04	0.86
Control Segments (N=179)	-0.03	0.39

ANOVA Results

Source	Type 3 Sums of Squares	df	F	Sig.
Corrected Model	7.427	5	1.873	.098
Intercept	.552	1	.696	.405
Treatment	.148	1	.187	.666
City	1.757	2	1.108	.331
Treatment * City	6.255	2	3.944	.020
Error	289.470	365		
Total	296.902	371		
Corrected Total	296.897	370		

R-Squared= .025 (Adjusted R Squared= .012)

Impact of Broken Windows Policing at Hot Spots on Police Legitimacy

Another key concern related to the impact of an aggressive police tactic like broken windows on residents of targeted hot spots is what impacts the approach has on residents'

opinions of the police. As reviewed earlier, in recent years some scholars have begun to raise concerns that hot spots policing in general may lead to dissatisfaction with the police as law-abiding residents begin to feel like targets, rather than partners of the police (Rosenbaum, 2006). Others have noted that this risks subsequently undermining the legitimacy of the police in these areas (Weisburd, 2004; Weisburd & Braga, 2003). Broken windows tactics at hot spots would appear to run a higher risk of these types of backfire effects than other tactics such as problem-oriented policing given the increased focus on disorder and minor crimes. These are much more common than serious crimes, thus broken-windows based police tactics are likely to generate more negative contacts between police and residents of targeted areas than other less aggressive police approaches.

Thus another central aim of the current study was to examine the impact of the tactic on residents' opinions of the police. Drawing on previous studies by Tom Tyler (1990; 2004), a scale measure of police legitimacy was constructed using the survey data as detailed in Chapter 3. The results of the analyses, shown in Table 5.3, suggest little to no impact of the police intervention delivered in this study on ratings of police legitimacy. Legitimacy was slightly down in both the target and control areas. The impact of the police intervention on legitimacy was not significant in the ANOVA model. However, the decrease was greater in the control areas, which nonetheless challenges any notion of a backfire effect on police legitimacy in the current study. While police attention aimed at disorder at small hot spots in the current study did not bolster opinions of the police, it at least did not appear to undermine them as critics of hot spots policing had hypothesized.

Table 5.3—Analysis of Police Legitimacy

Mean Change in Police Legitimacy Pre- to Post-intervention by Area

City	Mean Change	Std. Deviation
Target Segments (N=192)	-0.13	2.15
Control Segments (N=179)	-0.35	2.17

ANOVA Results

Source	Type 3 Sums of Squares	df	F	Sig.
Corrected Model	18.300	5	.783	.562
Intercept	24.642	1	5.273	.022
Treatment	3.957	1	.847	.358
City	3.666	2	.392	.676
Treatment * City	10.223	2	1.094	.336
Error	1705.719	365		
Total	1745.068	371		
Corrected Total	1724.020	370		

R-Squared= .011 (Adjusted R Squared= -.003)

Impact of Broken Windows Policing at Hot Spots on Collective Efficacy

A third key attitudinal measure we wanted to examine was the impact of the police intervention on collective efficacy. The ultimate goal of broken windows policing is not to simply clean up disorder at problem areas, nor even to simply reduce fear of crime, but rather to empower residents to engage in informal social control and begin dealing with small problems on their own. In recent years this idea has commonly been termed collective efficacy (see Sampson et al., 1997). We included a measure, adapted from that used by Sampson and Raudenbush (1999) in their crime and disorder study, in our resident survey to test the impact the police intervention had on resident's ratings of collective efficacy on their street segments.

As with the other outcomes above, our results (see Table 5.4) suggest the police tactics delivered during the current study had no impact on this outcome. As with the police legitimacy analysis, the results show that collective efficacy was slightly decreased in both areas, with a

larger decrease in the control segments. The impact of the intervention on collective efficacy is not statistically significant in the ANOVA model. This finding is not surprising given the lack of a clear reduction in fear of crime in the target areas in the above analyses—which is the mechanism that the broken windows thesis expects to bolster informal social controls. Additionally, it may be the case that a police intervention of longer than six to seven months is needed to have a meaningful impact on collective efficacy.

Table 5.4—Analysis of Collective Efficacy
Mean Change in Collective Efficacy Pre- to Post-intervention by Area

City	Mean Change	Std. Deviation
Target Segments (N=192)	-0.23	3.39
Control Segments (N=179)	-0.45	3.25

ANOVA Results

Source	Type 3 Sums of Squares	df	F	Sig.
Corrected Model	34.898	5	.629	.678
Intercept	19.936	1	1.796	.181
Treatment	1.155	1	.104	.747
City	24.905	2	1.122	.327
Treatment * City	6.429	2	.290	.749
Error	4051.884	365		
Total	4127.901	371		
Corrected Total	4086.782	370		

R-Squared= .009 (Adjusted R Squared= -.005)

Impact of Broken Windows Policing at Hot Spots on Crime and Disorder

Finally, our study also examined the impact of the police intervention on crime and disorder. As noted earlier, our study was designed directly to test the impact of the treatment on residents of targeted areas, and in this context the study did not have a high level of statistical power to detect modest changes in official crime data. Nonetheless, we thought it important to analyze these data. Prior studies of hot spots policing suggest that order maintenance approaches should effect crime and disorder levels. The caution that should be brought to our analyses is

that these were not main outcome measures, and the study does not have a powerful design to detect changes in these outcomes, as discussed in detail in chapter 2.

The results for our analysis of the impact on crime or disorder as measured through police call for service data are shown in Tables 5.5 and 5.6 below. These results are based on 108 street segments (rather than the full 110 in the study) as two segments were excluded for being extreme outliers in the crime data. As described in Chapter 3, these two segments (one control and one target segment) had much higher levels of crime in the baseline period and analyses showed they tended to drive findings.

The ANOVA results do not indicate a significant impact of the intervention on crime and disorder calls for service. For crime, we see declines in both the target and control areas from pre- to post-intervention (see Table 5.5). The observed decline is slightly greater in the control areas. We also ran some additional analyses to test whether we were correct in assuming that this lack of impact is due to the low statistical power resulting from the relatively low base rates of crime and disorder, as well as the high level of variability which results. A regression analysis including a dummy variable for the treatment, controls for city, pre-intervention crime counts and the interaction between treatment and pre-intervention crime counts found a significant impact of treatment. However, the result was unstable and highly influenced by outliers so we do not present those results here. Nevertheless, those models support the notion that power is simply too low in the current study to detect impacts on crime due to the relatively low base rates on the study street segments. Further support for this was found in examinations of only the top 20 highest crime call segments in each group (target and control) which found the changes in the expected direction (greater declines in the target areas)—though the impact of the intervention remained non-significant in ANOVA models.

The findings for disorder calls for service shown in Table 5.6 tell much the same story and are thus not discussed in detail here. Finally, we also ran models assessing impact on crime and disorder calls for service from the pre-intervention period to the during intervention period. These similarly showed no significant impact on crime or disorder CFS.

Table 5.5—Analysis of Crime Calls for Service

Crime CFS Mean Change Pre- to Post-intervention by Area

City	Mean Change	Std. Deviation
Target Segments (N=54)	-0.94	7.75
Control Segments (N=54)	-1.22	4.09

ANOVA Results

Source	Type 3 Sums of Squares	df	F	Sig.
Corrected Model	225.599	5	1.203	.313
Intercept	133.310	1	3.538	.063
Treatment	.161	1	.004	.948
City	163.641	2	2.171	.119
Treatment * City	54.999	2	.730	.485
Error	3843.651	102	37.683	
Total	4197.000	108		
Corrected Total	4070.250	107		

R-Squared=. 056 (Adjusted R Squared= .009)

Table 5.6—Analysis of Disorder Calls for Service Disorder CFS Mean Change Pre- to Post-intervention by Area

City	Mean Change	Std. Deviation
Target Segments (N=54)	-1.59	6.57
Control Segments (N=54)	-1.54	8.06

ANOVA Results

Source	Type 3 Sums of Squares	df	F	Sig.
Corrected Model	169.368	5	.621	.684
Intercept	222.870	1	4.086	.046
Treatment	4.362	1	.080	.778
City	135.827	2	1.245	.292
Treatment * City	36.113	2	.331	.719
Error	5563.179	102		
Total	5997.000	108		
Corrected Total	5732.546	107		

R-Squared=.030 (Adjusted R Squared= -.018)

Impact of Broken Windows Policing at Hot Spots on Resident's Perceptions of Crime and Disorder

As an alternative to the official police data, we also gathered perceptual measures of crime and disorder on the target and control street segments. These were measured, as detailed in Chapter 3, through series of questions on the survey asking residents how often they thought various crimes or social disorders occurred on their street segment, as well as questions asking how prevalent various physical disorder problems were. These measures have two advantages over the official police data. First, they are not subject to the problem of low statistical power as the study was designed to provide a powerful test of individual-level outcomes. Secondly, one can argue that perceptions of crime and disorder are most relevant to the broken windows model. For example, a resident is not likely to feel safer after a police clean up of disorder on their street if they did not notice the improvement.

As such, this series of analyses examines the impact of the broken windows policing tactic on residents' perceptions of crime and disorder on their street segments. Table 5.7

examines perceptions of crime. The findings show perceptions of crime were up in both areas after the police intervention, with a greater increase in the control areas. Again the ANOVA model shows the treatment did not have a statistically significant impact.

Table 5.7—Analysis of Perceived Crime

Mean Change in Perceived Crime Pre- to Post-intervention by Area

City	Mean Change	Std. Deviation
Target Segments (N=192)	0.17	2.60
Control Segments (N=179)	0.45	2.85

ANOVA Results

Source	Type 3 Sums of Squares	df	F	Sig.
Corrected Model	34.371	5	.926	.464
Intercept	34.437	1	4.640	.032
Treatment	8.761	1	1.180	.278
City	10.567	2	.712	.491
Treatment * City	16.666	2	1.123	.327
Error	2708.970	365		
Total	2777.798	371		
Corrected Total	2743.341	370		

R-Squared= .013 (Adjusted R Squared= -.001)

Turning to perceptions of disorder, Table 5.8 examined the impact of the police intervention on residents' perceptions of social disorder. The results here show small increases in both areas, with a slightly larger increase in the targeted areas. However, the difference is close to zero.

Table 5.8—Analysis of Perceived Social Disorder

Mean Change in Perceived Social Disorder Pre- to Post-intervention by Area

City	Mean Change	Std. Deviation
Target Segments (N=192)	0.92	6.33
Control Segments (N=179)	0.80	6.12

ANOVA Results

Source	Type 3 Sums of Squares	df	F	Sig.
Corrected Model	161.232	5	.831	.528
Intercept	255.906	1	6.597	.011
Treatment	.225	1	.006	.939
City	107.352	2	1.384	.252
Treatment * City	52.351	2	.675	.510
Error	14159.151	365		
Total	14596.016	371		
Corrected Total	14320.383	370		

R-Squared= .011 (Adjusted R Squared= -.002)

Finally, Table 5.9 examined the impact the intervention had on residents' perceptions of physical disorder problems on their street segments. The results here tell a different story than what was evidenced for perceptions of crime and social disorder. Here residents in the targeted areas perceived *more* physical problems after the police intervention relative to their counterparts in the control areas—and the difference is marginally significant (p=.082). This may reflect the "backfire" effects hypothesized by Hinkle and Weisburd (2008). Many of the police activities in our study were directed at physical disorder, and many of these interventions involved police directly confronting owners/property managers of properties containing physical disorder. For example, police might ask them to clean up trash from the yard, or ask property managers to repair broken locks, windows etc. around an apartment complex. In this case we might speculate that these "cues" made residents more aware of physical disorder on the experimental segments.

Table 5.9—Analysis of Perceived Physical Disorder

Mean Change in Perceived Physical Disorder Pre- to Post-intervention by Area

City	Mean Change	Std. Deviation
Target Segments (N=192)	0.57	2.60
Control Segments (N=179)	0.23	2.13

ANOVA Results

Source	Type 3 Sums of Squares	df	F	Sig.
Corrected Model	51.453	5	1.827	.107
Intercept	54.801	1	9.732	.002
Treatment	17.071	1	3.032	.082
City	23.500	2	2.087	.126
Treatment * City	16.544	2	1.469	.232
Error	2055.317	365		
Total	2168.480	371		
Corrected Total	2106.770	370		

R-Squared= .024 (Adjusted R Squared= .011)

Summary

Our main survey results provide important new data on the impacts of hot spots policing, and the salience of the mechanisms that broken windows policing is expected to generate. In regard to hot spots policing, we find little evidence of the backfire effects on citizen attitudes suggested by critics of hot spots policing. Perceptions of police legitimacy of citizens on street segments receiving intensive hot spots policing activities do not decline relative to the control areas. In the case of possible negative impacts on fear, we also do not find strong evidence of impacts, though here we do find some indication that perceptions of physical disorder increase in targeted areas. However, the study also did not find the positive impacts advocates of the broken windows model would anticipate. Fear of crime was not reduced by the intervention, nor was collective efficacy bolstered. Additionally, residents were not very aware of the efforts of police

to reduce crime or social disorder. Indeed, residents in the targeted areas reported *more* physical disorder problems on their street after the intervention.

While we urge caution in drawing strong conclusions from our analyses or impacts of the treatment on officially measured crime, our data do not allow us to conclude that broken windows policing of the type carried out in this study has strong effects on crime and disorder. Our caution is that the statistical power of these analyses is low. Nonetheless, had the impacts on crime and disorder been very strong and consistent, even a study such as ours would have observed impacts on these outcomes. Thus ours is a weak conclusion. Our study does not allow us to conclude that broken windows policing of the type carried out here is effective. At the same time, given the low statistical power in the tests of official crime data, we cannot conclude that it was ineffective. What we do know is that the treatment areas received substantially larger dosages of police presence directed at disorder than the control sites. Finally, caution is needed in trying to generalize the findings to other settings. The current study makes an important contribution by assessing broken windows policing at microplace hot spots in mid-sized cities, when most research in this area has been conducted in major cities. However, this also means that the findings of the current study may not be generalizable to larger, more densely populated urban centers, and thus replications are needed in different types of cities.

Potential explanations for these findings and their implications are discussed in the following concluding chapter of this report. Chapter 6 also highlights the limitations of the current study and makes suggestions for future research on hot spots and broken windows policing—particularly for additional research assessing the impact of police tactics on residents of targeted areas.

Chapter 6- Discussion and Conclusions

Our findings provide the first experimental evidence on the effects of broken windows policing at hot spots on citizen perceptions. Our results do not support either the concerns of the critics of hot spots policing (Rosenbaum, 2006; Weisburd, 2004; Weisburd & Braga, 2003), or the hopes of the advocates of broken windows policing (e.g. Wilson and Kelling, 1982; Kelling and Coles, 1996). We do not find, on the one hand, that the level of aggressive order maintenance policing delivered in our study increased citizen fear or reduced perceptions of police legitimacy as hot spots critics have feared. On the other hand, our study also does not provide evidence of short-term effects on reducing fear or bolstering collective efficacy anticipated by the broken windows thesis. We do find a marginally significant impact on perceptions of physical disorder, with people on treatment segments perceiving a relative increase rather than decrease in physical disorder.

In our conclusions we want to consider the implications of our findings both for theory and practice. Our work contradicts assumptions that have been common both among advocates of broken windows policing and critics of hot spots policing. In the next sections we want to consider why this may be the case, and also discuss the implications of our findings for police practices and policies. We also want to consider whether we can draw inferences from our study for understanding the effects of disorder policing on crime and disorder at hot spots. Though we think caution should be used in drawing such conclusions because of statistical power concerns, we nevertheless think that given the context of our study--smaller cities with less serious crime problems--that our findings are suggestive of the limitations of such approaches. In concluding, we also want to consider some of the limitations of our study and offer some suggestions for future research in this area.

Why Are Ordinary People Not Affected by Significant Increases in Aggressive Policing?

Our findings in the citizen survey suggest that ordinary people who live on a street segment are not very aware of the activities of the police. This is the simplest conclusion that can be reached from our data. Residents who lived on street segments that received on average three additional hours of police presence per week, including an aggressive focus on disorder, were not more fearful or less fearful. They did not have higher evaluations of the legitimacy of the police, but neither did they have lower evaluations of legitimacy. Importantly, aggressive disorder policing did not decrease perceptions of crime, though it did seem to marginally increase (rather than decrease) perceptions of disorder—at least for physical disorder problems.

While we often assume that citizens will be aware of police presence, our data suggest that even adding three hours of police activities on a street segment each week as in the current study will not necessarily mean that citizens come in contact with the police. People are ordinarily going through their daily routines which may include spending large parts of their day at work or shopping or carrying out other daily routines away from their neighborhoods. This may mean that the likelihood of observing the police on a daily basis is not very high, even when police presence is intensified in small hot spots where they reside. Moreover, while the respondents in our survey live in households or work in businesses on the affected segments, they are not necessarily those people who are most likely to have interactions with police on an regular basis--for example young people or potential offenders.

Our study did not have a direct measure of whether respondents observed the police during the study period because the survey was conducted only in the pre- and post-intervention periods. We did, however, ask respondents more generally whether they observed increased police activity over the “last six months” which would have included portions of the intervention

period for those completing the post-intervention survey (the average time to survey after the end of the intervention was a little over one month). The responses did not differ significantly between the treatment areas which received the police intervention and control conditions that did not. It might be argued that this is a result of the nature of the police activities carried out at these hot spots. For example, though "stops and frisks" and other tactics were commonly carried out on the experimental segments, there were few large-scale police crackdowns which would have had much higher visibility. Nonetheless, even in studies that have brought much more visible and intensive police interventions to hot spots similar findings were gained.

In a Police Foundation Displacement and Diffusion Study at high intensity crime hot spots in Jersey City, New Jersey for example, a similar survey methodology was used (see Weisburd et al., 2004; 2006). In this case, the police interventions did include large-scale crackdowns and sweeps. Nonetheless, the survey results are similar to those observed in this study. Respondents in the treatment segments did not report a significant increase in police presence during the study period. In this case, as in our study, it may be the result of the surveys being collected after the intervention period. But the consistency of these findings, and of our results more generally, suggest that ordinary people are not as strongly affected by hot spots policing as has been presumed by critics of the approach.

Of course, if we had surveyed offenders in these areas, or others who spend much more time on the street, we expect that our results might have been different. In the Jersey City Displacement study, for example, offenders interviewed in the treatment areas reported being very much aware of heightened police attention at the hot spots, though they were not necessarily aware of the precise geographic areas affected by the interventions (Weisburd et al., 2004; 2006). Moreover, our survey does provide some indication that citizens are affected by heightened

police presence. Our finding of a marginal increase in perceptions of physical disorder suggests that citizens are drawing some "cues" from police activities, in at least the case of physical disorder, as suggested by Hinkle and Weisburd (2008). In this case more police attention to physical disorder on their street indicates that such problems are more serious, and thus led to an increase in residents' reports of physical problems on their streets.

An assumption that people are not very much aware of police activities on an everyday basis provides an explanation for why the "negative externalities" of hot spots policing are not observed in our study. Legitimacy evaluations do not decline in this context, and fear does not increase, because ordinary people do not have a good deal of interaction with the police. Only 22 people in our study were stopped by the police on their street within the past six months from the time they completed the post-intervention survey, and this number was evenly split between the experimental and control conditions. This reinforces our observation that even substantial increases in police activities like those observed in our study do not necessarily lead to substantial changes in the direct contacts of the police and the residents of targeted areas.

Broken Windows Policing and Fear of Crime

However, an observation that ordinary people do not necessarily observe increases in police activities on their street, does not explain why fear of crime was not decreased and collective efficacy was not increased on segments where the police have worked hard to ameliorate disorder problems. Following the model of the broken windows thesis, we would expect that police work directed at problem street segments would lead in the long run to improvements in disorder and then subsequent reductions in fear of crime. We would expect in turn that such reductions in fear would bolster collective efficacy. Of course, we do not have a

statistically powerful measure of the impacts of the program on crime and disorder as outlined in earlier chapters, and accordingly we cannot rule out the possibility that small impacts on fear are a reflection of the intervention perhaps not having a large impact on disorder or crime in the study. Nonetheless, in the original broken windows model (Wilson and Kelling, 1982), the reduction in fear resulted from the presence of the police in the community and not in any specific reductions in crime. Such reductions were expected to come later in a developmental cycle. We do have measures of the activities of the police, and these show that there was concentrated and consistent order maintenance policing carried out through the experimental period (see chapter 4).

Accordingly, within the context of a broken windows policing program that is carried out in smaller cities, and in less crime-ridden hot spots, our study suggests that among ordinary citizens fear is not reduced by disorder focused policing. We find no evidence for the developmental processes that are expected to occur when the police focus in on disorder. While it might be argued that a much more aggressive zero tolerance approach could have impacted citizens more directly, and perhaps also reduced fear, we think it important to note that Kelling and colleagues (e.g. Kelling and Coles, 1996) have emphasized that zero tolerance is not an appropriate broken windows approach in good part because it would be expected to increase fear and public concern with the police. Our results accordingly raise strong concerns regarding the expected model of crime reduction envisioned by broken windows policing advocates. Our results suggest that citizens are relatively unaware of police activities, at least at the levels brought in this experiment.

One possible limitation is that our study was done in these smaller cities, with less intense crime and disorder problems than the larger cities that have typically been the focus of research

on broken windows and hot spots policing. But is broken windows policing only applicable to places with very serious crime problems? The idea of broken windows policing was developed from research in Newark, New Jersey, not in the relatively smaller cities that are the focus of our study. Are the hot spots we studied simply not hot enough to have led to the kind of citizen concern that would be ameliorated by disorder policing? Wilson and Kelling (1982) argued that broken windows policing would likely be most effective in places that were beginning to have serious problems, but had not declined so much that they were beyond repair. In this context, one might have expected the places we examined to be particularly appropriate for these interventions. The average of approximately 35 emergency calls for disorder, and 15 emergency calls for part I crimes on an average street segment in a year in our sample suggests serious problems, though these places are certainly not past the tipping point that would allow real improvement. Moreover, we have already noted that in the Jersey City Displacement and Diffusion study similar results were found for street segments with much more serious and sustained crime problems. Though in that context, a follow-up study suggested that the disorder crackdown may have increased fear of crime among residents of the targeted hot spots (Hinkle &Weisburd, 2008).

One explanation for our results may simply be that we do not observe these street segments for a long enough period of time. Broken windows theorists argue that there is a developmental cycle (e.g. Kelling & Coles, 1996; Skogan, 1990; Wilson & Kelling, 1982;), and that cycle may take a long period to reach the stage where citizen attitudes are affected. Accordingly, our study does not prove that the broken windows approach “doesn’t work,” but only that the developmental cycle does not appear with the expected outcomes in the follow-up period of our study.

Hot Spots Policing and Perceptions of Police Legitimacy

There has been a growing chorus of concerns about the effects of hot spots policing on perceptions of police legitimacy (Rosenbaum, 2006; Weisburd, 2004; Weisburd & Braga, 2003). Our study provides no more evidence of this than it did for the impacts of disorder policing at hot spots on fear. Our explanation for this finding follows our argument above. Ordinary citizens are much less aware of the activities of the police than is often thought by police scholars and the police themselves. Simply stated, people who live in homes or work in businesses on streets that receive greater police presence are unlikely to be affected by police activities of the type in our study.

For the police to bring three hours of extra police presence a week to a street segment is a tremendous investment of police resources. The investment in Colton, for example, for each week that they achieved full implementation was 90 hours of additional police presence at the experimental sites. In one week in Redlands 91 hours was devoted to the experimental sites, and in Ontario as many as one hundred hours of extra police presence was brought to the experimental hot spots. This is a tremendous investment of police time in these small cities. But nonetheless, for the average person who lives on a street it means that the police will only be around for a relatively small portion of the week. Why should we expect that citizens will on average become more fearful, or think less or more of police in the area? This is especially true of those citizens who go to and from their daily jobs in normal routines, and do not spend a great deal of time observing behavior on the street.

Our study does not say that hot spots policing will not affect people on the targeted streets. People who are home more often and observe street behavior may be encouraged or become fearful from seeing police on their street. Young people who are more likely to have

contact with the police may also be strongly affected, as perhaps will offenders. But we think that our study suggests that concerns about the negative impacts of hot spots policing on ordinary citizens are likely exaggerated in good part because ordinary people are not very aware of police tactics that are not very visible in the context of their normal daily routines.

Policy Implications

Our findings regarding citizen attitudes lead to a series of straight forward policy implications of our work. First, and perhaps most important, this experiment suggests the benefits of hot spots policing are not offset by possible "negative externalities" in regard to ordinary people who live on a targeted street. It may be that we should be concerned with the impacts of hot spots policing on offenders or young people who have more contact with the police on an everyday basis, but increases in police activities at the levels implemented in our study do not lead to large decreases in perceptions of police legitimacy or fear of crime among residents in general. Hot spots policing programs should not be avoided out of fear of their negative impacts on ordinary citizens. At the same time, we did find marginal increases in evaluations of physical disorder, suggesting the importance of recognizing that citizens may equate more police with more crime and disorder. It may be important for police to deal directly with such perceptions when hot spots policing programs are developed. Perhaps, for example, by noting the reasons for extra police presence and directly informing citizens when problems are addressed.

Our findings regarding fear of crime and collective efficacy should give caution to scholars and police officials who expect that order maintenance policing will have direct and visceral impacts on people who live in affected areas. For broken windows policing to have the

long-term effects that have been proposed, police practices would have to be observed and recognized by the vast majority of people who live in crime hot spots. This study suggests that that assumption is not borne out in crime hot spots of the types we have studied. Our work provides a strong challenge to the broken windows policing model. Given its wide adoption, we think it is time for the government and police to invest in critical studies that test assumptions about the impacts of police presence on citizens. We do not suggest that a single study "proves" that no investment should be made in broken windows policing. Indeed, our review of order maintenance policing in hot spots in Chapter 1 suggests that such approaches are often effective in reducing crime and disorder. However, our study is the first one we are aware of to specifically examine the underlying claims of long-term influences on crime through reduced fear and enhanced informal social control that was first proposed by Wilson and Kelling (1982). Our findings are not supportive of this model.

Prior evidence of the effectiveness of order maintenance in hot spots raises the question of why we did not observe substantial drops in crime in our study. We noted in earlier chapters that a simple reason for this is that our study design did not provide a powerful test of the impacts of the program on crime and disorder. Relative drops of 35-50 percent in official crime statistics would have been required for us to reliably observe a treatment impact. This is clearly too high a bar to expect in a crime prevention program focused on places with relatively lower baselines of crime and disorder. It is indeed, a very high expectation in any crime prevention program.

At the same time, if the program had very large effects on crime and disorder of that magnitude we would have likely observed it in our study. The fact that we did not suggests that a three hour increase in aggressive order maintenance policing in hot spots in smaller cities is not

likely to lead to 40 or 50 percent declines in official crime or disorder. This is not a very strong conclusion, but nonetheless it does raise the question of whether hot spots policing approaches in smaller cities and directed at less intense crime hot spots are likely to exhibit important crime prevention benefits. This should be a focus of future studies.

Limitations

While our study provides the first experimental evidence about the effects of hot spots policing on perceptions of the police, fear of crime and collective efficacy, we think it important before concluding to note some very specific limitations of our study. The first relates to the study sites. As we noted earlier, the hot spots of crime in this study have much lower levels of criminal activity than crime hot spots in many other studies conducted in larger, more densely populated urban areas. While the level of crime and disorder at hot spots in the three cities we studied is worrying to police administrators, it may be that if our study was examining more serious crime hot spots the results would have been different. In this context, our findings suggest that in smaller cities, where social and physical decay are at more modest levels, hot spots policing neither leads to the negative outcomes of its critics nor the positive outcomes (at least in short run) suggested by broken windows policing advocates.

In turn, our results are limited to smaller cities and may not apply to densely populated urban areas such as Minneapolis, Jersey City, and New York City that have been the targets of much prior research on hot spots and broken windows policing (e.g. Braga et al., 1999; Hinkle & Weisburd, 2008; Kelling & Sousa, 2001; Sherman & Weisburd, 1995; Weisburd & Green, 1995; Weisburd et al. 2004; 2006). This is clearly a limitation of our work, but we think it is important because cities like those examined in our study represent a broad array of America's

police and citizenry. While much study of crime and policing has focused on major cities with large police departments, the three cities in this current study are more typical of the majority of US cities and municipal police departments. As such, our findings suggest that order-maintenance policing strategies targeted at problem street segments do not have backfire effects on outcomes such as fear or police legitimacy in these types of smaller cities and police agencies.

Another limitation is that it is also the case that the nature of the interventions and their intensities influence the outcomes observed. We did not ask police to "harass" citizens on the treatment segments, nor did our study adopt a zero tolerance approach. Police were instructed to develop step-by-step strategies that would give citizens a chance to improve their behavior (see Chapter 4 and Appendix C). From the first formulation of the broken windows thesis, Kelling and others have argued that this is the best approach to order maintenance policing (see Kelling & Coles, 1996, Wilson & Kelling, 1982), suggesting that police should negotiate norms of behavior rather than relying solely on heavy-handed law enforcement. We recognize that if the police used more aggressive tactics as in the Police Foundation Displacement and Diffusion Study, our results might have been very different. They might have been different as well if the police would have spent more than three hours per week on each street segment. As noted above, we think that three hours of police activity on a street segment each week represents a substantial investment of police service. However, some past hot spots studies have used more intensive levels of police presences. For example, the designed dosage in the Minneapolis Hot Spots Experiment (Sherman & Weisburd, 1995) was three hours per day at each hot spot, compared to the current study's target of an extra two to three hours per week.

As such, the results of our study can only be generalized to order maintenance strategies that 1) do not rely on zero tolerance arrest or citation policies, or other forms of aggressive law

enforcement; 2) do not involve sweeps or other highly visible forms of police activity; 3) increase police presence on targeted segments by only a few hours a week. Thus, it is possible that more aggressive or intensive police activity or presence in targeted hot spots could lead to the backfire effects suggested by hot spots critics.

These limitations point to a clear need for future research on the impacts of police activities at hot spots on residents. We conclude by making some specific suggestions for future research in this area. First, studies should examine the impact of hot spots policing on residents in a variety of settings, including smaller cities such as those in this study as well as larger urban centers. Second, such studies need to examine the impacts of various types of police tactics at hot spots on residents of targeted areas. A major limitation of the hot spots literature is that only recently have studies begun to test the impact of different types of police tactics at hot spots in effort to find out what is most effective in reducing crime (see Braga & Bond, 2008; Taylor, Koper & Woods, forthcoming). Such work needs to continue, but a key related question is what impact these varying tactics have on residents. As noted above a more aggressive zero tolerance approach to broken windows policing may have backfire effects not observed with the less formal approach used in the current study. Similarly, tactics such as community-oriented policing or problem-oriented policing could have very different impacts on residents than order-maintenance policing or simple directed patrol at hot spots.

Related to this, future research should explore how aware residents are of these police activities. As noted, one likely reason for a lack of backfire effects in the current study is that citizens surveyed did not seem to be aware of the increase in police presence and activity in the targeted street segments, and past studies using more aggressive tactics at hot spots produced similar findings (Weisburd et al., 2004; 2006). However, this does not mean that residents are

never aware of police activity in their neighborhoods. Perhaps a zero tolerance approach to order maintenance which generates more contacts with citizens would cause citizens to notice the increased activity—and thus have more chance of leading to backfire effects. Similarly, maybe a hot spots strategy which delivers more than two to three hours a week at target street segments would be noticed by more residents, and potentially lead to the increases in fear or other collateral consequences hypothesized by Rosenbaum (2006) and others.

It has long been noted that the amount time police spend in hot spots can have unexpected outcomes. For instance, an early assumption was that spending more time could prevent more crime through having a longer deterrent impact at hot spots. However, research found that there is a case of diminishing returns, and that if police spend more than 10-15 minutes at a hot spot for any one time they are essentially wasting their time as crime has cooled off (Koper, 1995). Perhaps, rather than just diminishing returns in crime prevention, there may be some tipping point where if police spend more than that amount of time on a street segment per day or week that backfire effects begin to emerge.

Conclusions

In sum, the current study suggests that order maintenance policing delivered in a non-zero tolerance fashion does not have the backfire effects anticipated by critics of hot spots policing, nor the beneficial effects—at least in the short term—anticipated by advocates of the broken windows thesis. Future research must further explore the impacts of police tactics on residents of targeted areas, paying particular attention to such issues as variation across types of jurisdictions, types of police tactics and the amount of police presence delivered to hot spots. It is essential to understand the impact the police have not only on crime and disorder, but also on

the population of citizens they depend on to cooperate in reporting crime, providing information to investigators and working directly with police in community policing efforts.

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Appendix A—Survey Instrument

This appendix presents the survey instrument used during this study. Due to the length of the instrument only the Pre-Intervention Residential Survey in English is included in this report. The Pre-Intervention Business Survey and the Post-Intervention Residential and Business Survey instruments are available upon request, as are Spanish language versions of all four survey instruments.

All substantive questions are identical across survey instruments. The Business versions of the survey simply switch phrasing to be applicable for business respondents. For instance a question would ask about the block where the respondent "worked" rather where they "lived." The post-intervention survey instruments are identical to the pre-intervention instruments in the wording and ordering of all substantive questions given the panel design of the study—only the introductory statement and the filtering questions prior to question 3 in the survey differ as they were designed to attempt to get the same individual in the household who completed the pre-intervention survey to participate in the follow-up.

Broken Windows Policing Experiment

Pre-Intervention HOUSEHOLD Survey Instrument

1. NOT APPLICABLE (business survey only)

I would like to speak with a member of this household who is at least 18 years old.

(INTERVIEWER: IF NO HOUSEHOLD MEMBER 18 OR OLDER IS AVAILABLE, ASK WHEN TO CALL BACK **AND ENTER BELOW)**

Hi, my name is [INTERVIEWERS FULL NAME]. I'm calling from a research center at California State University-San Bernardino. We're interviewing residents in [CITY] about crime and disorder and the quality of policing on their block. Your participation in this survey would be really appreciated. It should only take about 15 minutes. As part of this study, we will be contacting participants again in 6 months to conduct a follow-up interview. Your participation in this survey is completely voluntary. You may choose not to take part at all. If you decide to participate in this survey, you may stop participating at any time and may skip any questions that you are not comfortable answering. Your answers will be kept strictly confidential and used only for research purposes and your name will not be attached to any research reports.

CONTINUE WITH SURVEY (**GO TO Q.1a)**

1a. Do you live on [**READ** *ADDRESS* **STREET NAME ONLY]** *between* ***STREET A*** *and* ***STREET B***?

YES.....1 (**GO TO Q.2a**)

NO.....0 (**GO TO Q.1b**)

1b. I just want to confirm that I dialed correctly. Is this [**READ** *PHONE* **NUMBER]**?

YES.....1

I'm sorry, we're looking to speak to people who live on [**READ** *ADDRESS* **STREET NAME ONLY].** Thank you very much for your time and cooperation.

NO.....0

Thank you very much for your time and cooperation. (**REDIAL)**

2a. How long have you lived on this block? _____

[**IF LESS THAN SIX MONTHS**: We're looking to speak with people who have resided on your block for at least 6 months. Thank you very much for your time and cooperation.]

2b. Do you own or rent your home?

Own.....1 (**GO TO Q. 3a**)

Rent.....0 (**GO TO Q. 2c**)

DON'T KNOW.....-8

REFUSED.....-9

2c. Which best describes the property that you are renting?

House .....1 (**GO TO Q. 3a**)

Townhouse, Condominium or Apartment in a complex with 4 or fewer buildings .....2 (**GO TO Q. 3a**)

Townhouse, Condominium or Apartment in a complex with 5 or more buildings .....0 (**GO TO Q. 3b)**

2d. **NOT APPLICABLE (business survey only)**

2e. **NOT APPLICABLE (business survey only)**

3a. Most of the questions on this survey are about the block you live on.
When I talk about your block, I mean [*ADDRESS* **STREET NAME ONLY]** *between* ***STREET A*** *and* ***STREET B***, including both sides of your street.
I'd like to begin with a few questions about how people get along on your block as well as some general questions about living on your block.

3b. Most of the questions on this survey are about the block you live on.
When I talk about your block, I mean [*ADDRESS* **STREET NAME ONLY]** *between* ***STREET A*** *and* ***STREET B***, including both sides of your street.
If your apartment is within a large complex, also consider your whole apartment complex.
I'd like to begin with a few questions about how people get along on your block as well as some general questions about living on your block.

3. For each of the following statements, please tell me if you strongly agree, agree, disagree or strongly disagree.

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	**DON'T KNOW**	**REFUSED**
3a. This block is a close-knit community.	1	2	3	4	-8	-9
3b. People on this block are willing to help each other.	1	2	3	4	-8	-9
3c. In general, people on this block can be trusted.	1	2	3	4	-8	-9
3d. People on this block generally do NOT get along with each other.	1	2	3	4	-8	-9
3e. People on this block do NOT share the same values.	1	2	3	4	-8	-9

4. Please tell me if it is very likely, likely, unlikely or very unlikely that these things would happen on your block.

	VERY LIKELY	LIKELY	UNLIKELY	VERY UNLIKELY	**DON'T KNOW**	**REFUSED**
4a. If a group of kids were skipping school and hanging out on the street, how likely is it that one of your neighbors would do something about it?	1	2	3	4	-8	-9
4b. If a group of kids were spray painting graffiti on a building, how likely is it that one of your neighbors would do something about it?	1	2	3	4	-8	-9
4c. If a kid was showing disrespect to an adult, how likely is it that one of your neighbors would say something to the kid?	1	2	3	4	-8	-9
4d. If there was a fight in front of your home and someone was being beaten up or threatened how likely is it that one of your neighbors would break it up?	1	2	3	4	-8	-9

5. There are different ways to be involved in neighborhood activities. To the best of your knowledge, has any member of your household has been involved in the following activities in the last 6 months?

	YES	NO	DON'T KNOW	REFUSED
5a. Spoken with a local politician about a problem on your block.	1	0	-8	-9
5b. Spoken to a person or group that was causing problems on your block.	1	0	-8	-9
5c. Attended a neighborhood meeting about a problem on your block?	1	0	-8	-9
5d. Spoken to a local religious leader about doing something to improve your block?	1	0	-8	-9
5e. Gotten together with neighbors to do something about a problem on your block or to organize efforts to improve your block?	1	0	-8	-9

6. How safe do you feel when walking alone at night on your block?

Very safe, ...1

Somewhat safe, ...2

Somewhat unsafe, or.....3

Very unsafe 4

DON'T KNOW.....-8

REFUSED.....-9

7a. In the past 6 months, have you felt afraid of becoming a victim of crime on your block?

Yes 1

No.....0 (**SKIP TO Q. 8**)

DON'T KNOW.....-8 (**SKIP TO Q. 8**)

REFUSED.....-9 (**SKIP TO Q. 8**)

7b. How often did you feel afraid of becoming a victim of crime on your block in the past 6 months?

Only a Few Times.....1

About Once a Month.....2

About Once a Week.....3

A Few Times a Week.....4

Everyday 5

DON'T KNOW.....-8

REFUSED.....-9

N/A.....-99

7c. And on the last occasion, how fearful did you feel?

Not very fearful.....1

A little bit fearful, ...2

Quite fearful.....3

Very fearful.....4

DON'T KNOW.....-8

REFUSED.....-9

N/A.....-99

8. In the last 6 months do you think that your block has…

Become a better place 1

Stayed about the same,.....2

Become a worse place 3

DON'T KNOW.....-8

REFUSED.....-9

8a. **NOT APPLICABLE (business survey only)**

9. In your opinion how likely is it that you will become a victim of the following crimes sometime in the next six months. Do you think it is very likely, likely, unlikely, or very unlikely.

	VERY LIKELY	LIKELY	UNLIKELY	VERY UNLIKELY	**DON'T KNOW**	**REFUSED**
9a. Being threatened with a weapon for money or valuables.	1	2	3	4	-8	-9
9b. Having something taken from you by force.	1	2	3	4	-8	-9
9c. Being attacked by a stranger. About how likely do you think that is?	1	2	3	4	-8	-9
9d. Having someone break into your home. About how likely do you think that is?	1	2	3	4	-8	-9
9e. Having your car stolen.	1	2	3	4	-8	-9
9f. Having your property damaged or vandalized.	1	2	3	4	-8	-9
9g. Being sexually assaulted.	1	2	3	4	-8	-9
9h. Being murdered.	1	2	3	4	-8	-9

Ok, now I'll ask you some questions about specific crimes and public disorders that may occur on your block.

10. How often do you think the following activities have occurred on your block over the past 6 months?
Do you think each of the following happens once a month or less, a few times a month, a few times a week, everyday or not at all?

	ONCE A MONTH OR LESS	A FEW TIMES A MONTH	A FEW TIMES A WEEK	EVERYDAY	NOT AT ALL	**DON'T KNOW**	**REFUSED**
10a. People getting into fist fights.	2	3	4	5	1	-8	-9
10b. People hanging out on your street being disorderly.	2	3	4	5	1	-8	-9
10c. People drinking alcohol in public.	2	3	4	5	1	-8	-9
10d. People drunk or high on your street.	2	3	4	5	1	-8	-9
10e. Panhandlers or homeless people asking for money.	2	3	4	5	1	-8	-9
10f. People damaging property.	2	3	4	5	1	-8	-9
10g. People making too much noise late at night.	2	3	4	5	1	-8	-9
10h. Gambling on the sidewalk or in an alley. About how often do you think this happens?	2	3	4	5	1	-8	-9
10i. People breaking into cars.	2	3	4	5	1	-8	-9
10j. People selling drugs.	2	3	4	5	1	-8	-9
10k. People engaging in prostitution.	2	3	4	5	1	-8	-9
10l. People breaking into homes and buildings.	2	3	4	5	1	-8	-9

Do you think each of the following happens once a month or less, a few times a month, a few times a week, everyday or not at all?

	ONCE A MONTH OR LESS	A FEW TIMES A MONTH	A FEW TIMES A WEEK	EVERYDAY	NOT AT ALL	**DON'T KNOW**	**REFUSED**
10m. People robbing others outside in your neighborhood [**PROBE**: BY ROBBERY I MEAN BEING THREATENED TO GIVE UP MONEY OR VALUABLES]	2	3	4	5	1	-8	-9
10n. People shooting guns in public. [**PROBE**: HANDGUNS, RIFLES]	2	3	4	5	1	-8	-9
10o. People getting stabbed with knives or other sharp objects.	2	3	4	5	1	-8	-9
10p. People being sexually assaulted.	2	3	4	5	1	-8	-9

11. Ok, now I'm going to ask you some questions about the physical conditions of your block. For each question please respond with none, a few or many.

	NONE	A FEW	MANY	**DON'T KNOW**	**REFUSED**
11a. Are there any homes or buildings with broken windows on your block?	1	2	3	-8	-9
11b. Are there any homes, other buildings or other places on your block which have graffiti on them?	1	2	3	-8	-9
11c. Are there any abandoned or boarded up homes or buildings on your block?	1	2	3	-8	-9
11d. Are there any vacant lots on your block?	1	2	3	-8	-9
11e. Are there any abandoned cars on the street on your block?	1	2	3	-8	-9
11f. Are there areas on your block where litter is a problem?	1	2	3	-8	-9
11g Are there areas on your block where the street or sidewalk needs repairs?	1	2	3	-8	-9
11h. Are there areas on your block that need better lighting?	1	2	3	-8	-9

12. Ok, now I'm going to ask you some questions about the [CITY] police. Over the past six months…

[**READ QUESTION, THEN RESPONSE OPTIONS:**
Once a month or less, a few times a month, a few times a week, everyday, not at all]

	ONCE A MONTH OR LESS	A FEW TIMES A MONTH	A FEW TIMES A WEEK	EVERYDAY	NOT AT ALL	**DON'T KNOW**	**REFUSED**
12a. How often have you seen [CITY] police officers on your block? [**PROBE**: DOING ANYTHING]	2	3	4	5	1	-8	-9
12b. How often have you seen the [CITY] police talking to people on your block?	2	3	4	5	1	-8	-9
12c. How often have you seen the [CITY] police searching people on your block?	2	3	4	5	1	-8	-9
12d. How often have you seen the [CITY] police arresting someone on your block?	2	3	4	5	1	-8	-9

13. Overall, do you think the [CITY] police are doing……

A very good job 1

A good job.....2

A fair job.....3

A poor job 4

A very poor job 5

DON'T KNOW.....-8

REFUSED.....-9

14. Please tell me if you strongly agree, agree, disagree, or strongly disagree with the following statements about the [CITY] police.

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	**DON'T KNOW**	**REFUSED**
14a. I have a lot of respect for the [CITY] police.	1	2	3	4	-8	-9
14b. On the whole [CITY] police officers are honest.	1	2	3	4	-8	-9
14c. I feel proud of the [CITY] police.	1	2	3	4	-8	-9
14d. I am very supportive of the [CITY] police.	1	2	3	4	-8	-9
14e. The [CITY] police treat people fairly.	1	2	3	4	-8	-9

15. How likely is it that you would call the police if each of the following situations happened tomorrow: Do you think it is very likely, likely, unlikely or very unlikely.

	VERY LIKELY	LIKELY	UNLIKELY	VERY UNLIKELY	**DON'T KNOW**	**REFUSED**
15a. You have a complaint against someone causing problems on your block?	1	2	3	4	-8	-9
15b. You have an emergency situation?	1	2	3	4	-8	-9
15c. You see suspicious activity on your block?	1	2	3	4	-8	-9

Ok, now I'm going to ask you some questions about personal experiences you have may had with the [CITY] police in the past 6 months.

STOPS

16. Have you been stopped or questioned by the [CITY] police during the past 6 months?

YES.....1

NO.....0 **(SKIP to Q.21)**

DON'T KNOW.....-8 **(SKIP to Q.21)**

REFUSED.....-9 **(SKIP to Q.21)**

17. How many times have you been stopped or questioned by [CITY] police during the past 6 months?

_____

18. Were you stopped by [CITY] police on your block?

YES.....1

NO.....0

DON'T KNOW.....-8

REFUSED.....-9

N/A.....-99

19. Overall, how satisfied are you with the way in which the [CITY] police handled the situation [DURING THE MOST RECENT ENCOUNTER] Were you…

Very satisfied 1

Somewhat satisfied 2

Somewhat dissatisfied or 3

Very dissatisfied?.....4

DON'T KNOW……..-8

REFUSED.....-9

N/A.....-99

20. I would also like to ask you about the way you were treated by the [CITY] police officers who stopped you [DURING YOUR MOST RECENT ENCOUNTER]. Please answer yes or no to the following questions.

	YES	NO	**DON'T KNOW**	**REFUSED**	N/A
20a. Were the [CITY]police polite to you?	1	2	-8	-9	-99
20b. Did they show a concern for your rights?	1	2	-8	-9	-99
20c. Did they listen to your side of the story?	1	2	-8	-9	-99
20d. Did they ask for all the necessary information?	1	2	-8	-9	-99
20e. Were the police honest with you?	1	2	-8	-9	-99
20f. Did the police do anything that you thought was improper?	1	2	-8	-9	-99
20g. When you think about your experience, do you feel frustrated with the police?	1	2	-8	-9	-99

Ok, now I am going finish up with some questions about yourself.

21. In what year were you born? _____

22. [**DO NOT ASK, BUT IS THE RESPONDENT……**]

FEMALE.....1

MALE 0

DON'T KNOW.....-8

23. Are you currently?

Married.....5

Single (never married) 4

Divorced.....3

Widowed 2

0r Separated 1

DON'T KNOW.....-8

REFUSED.....-9

24. How much school have you completed?

Some High School 1

High School Diploma 2

Some College.....3

College Degree.....4

Masters/Graduate or Professional Degree 5

DON'T KNOW.....-8

REFUSED.....-9

25. How would you best describe your work situation?

Working full-time 1

Working part-time.....2

Not working 3

Retired.....4

or some other arrangement 6

DON'T KNOW.....-8

REFUSED.....-9

26. Are you currently a full time or part time student?

Full time.....1

Part time.....2

No.....0

DON'T KNOW.....-8

REFUSED.....-9

27. Including all adults and children, how many people live in your home? _____

(IF 0, MARK Q. 28 AS "NO/0" AND SKIP TO Q. 29)

28. Do you have children under 18 living with you?

Yes 1

No.....0

DON'T KNOW.....-8

REFUSED.....-9

29. In the past 6 months, about how often did you read the local newspaper?

Everyday 1

Several days a week.....2

Once or twice a week.....3

Almost never.....4

Or not at all 5

DON'T KNOW.....-8

REFUSED.....-9

30. In the past 6 months, about how often how often did you watch the news on TV?

Everyday 1

Several days a week.....2

Once or twice a week.....3

Almost never.....4

Or not at all 5

DON'T KNOW.....-8

REFUSED.....-9

31. Have you or any member of your household been a victim of a crime in the past 6 months?

Yes…… 1

No.....0

DON'T KNOW.....-8

REFUSED.....-9

32. Do you know anyone else who lives on your block who has been a victim of a crime in the past 6 months?

Yes…… 1

No.....0

DON'T KNOW.....8

REFUSED.....9

33. Would you best describe yourself as…..

White.....0

African American.....1

Asian 2

Hispanic 3

Or some other group_____

DON'T KNOW.....-8

REFUSED.....-9

34. What is your current annual household income from all sources before taxes…..

Less than $10,000 1

Between $10,000 and $25,000.....2

Between $25,000 and $40,000.....3

Between $40,000 and $60,000.....4

Between $60,000 and $80,000.....5

More than $80,000.....6

DON'T KNOW.....-8

REFUSED.....-9

END

Thank you very much for your time and cooperation. Your participation is really appreciated.

As I mentioned before, we would like to contact you in 6 months for a follow up interview. May I please have your first name so that I may ask for you specifically when I call back in 6 months?

First Name: _____

Appendix B: Missing Value Imputation—Comparison of Descriptive Statistics

This appendix compares the means and standard deviations for pertinent survey items (i.e. those used to create the variables in this study as outlined in Chapter 3) for the imputed data analyzed in this study versus data using listwise deletion of missing values. The left sides of Tables C.1 and C.2 present the statistics with data using listwise deletion, while the right sides of the tables show the statistics for the imputed data. The item names refer to the question numbers in the survey instrument (See Appendix A). Items tagged with "_recoded" or "_recode" simply indicate these statistics are on data that were recoded from the numerical values listed in the survey instrument (see Appendix A) as outlined in Chapter 3. The data here show that the imputed dataset is nearly identical to the listwise deletion data in terms of means and standard deviations. Additionally, the valid N listwise vs. imputed presented at the end of the tables show the power benefits gained by maintaining sample size through imputation of missing values rather using listwise deletion. The data analyzed here include every completed survey—including those post-intervention surveys completed with respondents different than those who completed the pre-intervention survey at that address/telephone number. These cases were not used in the analyses in this report, but were included during the missing value imputation process to use the maximum amount of data available to add accuracy and stability to the imputations

Table C.1—Pre-Intervention Survey Data-Descriptive Statistics for Listwise Deletion vs. Imputed Data

Descriptive Statistics Listwise Deletion				Descriptive Statistics Imputed Data		
Item	Listwise N	Listwise Mean	Listwide Std. Deviation	Imputed N	Imputed Mean	Imputed Std. Deviation
Q3A_recoded	468	2.869658	0.649574	486	2.867048	0.645569
Q3B_recoded	459	2.932462	0.577803	486	2.9201	0.573555
Q3C_recoded	450	2.793333	0.670372	486	2.802055	0.652941
Q3D	445	2.822472	0.513281	486	2.812955	0.500253
Q4A_recoded	454	2.662996	0.920023	486	2.660318	0.901735
Q4B_recoded	467	3.214133	0.803141	486	3.210361	0.792284
Q4D_recoded	463	3.095032	0.844922	486	3.09269	0.831044
Q5A	468	0.102564	0.303713	486	0.099663	0.299665
Q5B	468	0.166667	0.373077	486	0.165765	0.368253
Q5C	474	0.099156	0.299187	486	0.101068	0.297269
Q5D	468	0.051282	0.220808	486	0.053419	0.21815
Q5E	472	0.173729	0.379278	486	0.174122	0.375207
Q6	467	2.012848	0.96719	486	2.02165	0.953929
Q8	475	1.972632	0.563751	486	1.970695	0.558147
Q9A_recoded	485	2.346392	1.310957	486	2.345938	1.309643
Q9B_recoded	473	2.112051	0.690525	486	2.132022	0.696113
Q9C_recoded	477	2.140461	0.672992	486	2.146169	0.670109
Q9D_recoded	478	2.217573	0.720139	486	2.221468	0.71717
Q9E_recoded	480	2.297917	0.725897	486	2.300196	0.723228
Q9F_recoded	477	2.45283	0.750614	486	2.453584	0.744305
Q9G_recoded	472	1.879237	0.583052	486	1.893157	0.587314
Q9H_recoded	469	1.886994	0.645515	486	1.896895	0.639532
Q10A_recoded	479	0.551148	0.885136	486	0.551232	0.88322
Q10B_recoded	483	0.958592	1.289256	486	0.968576	1.294134
Q10C_recoded	482	0.925311	1.287483	486	0.927877	1.286308
Q10D_recoded	480	1.014583	1.37446	486	1.012877	1.369182
Q10E_recoded	485	1.171134	1.501236	486	1.167607	1.501703
Q10F_recoded	483	0.668737	1.015439	486	0.670735	1.013591
Q10G_recoded	448	0.745536	1.176761	486	0.782216	1.163934
Q10H_recoded	475	0.084211	0.432419	486	0.087962	0.432214
Q10I_recoded	475	0.477895	0.801525	486	0.482928	0.798182
Q10J_recoded	465	0.604301	1.188297	486	0.629214	1.184094
Q10K_recoded	463	0.302376	0.901739	486	0.32806	0.9
Q10L_recoded	468	0.269231	0.614035	486	0.286609	0.630133

Q10M_recoded	464	0.258621	0.638853	486	0.273315	0.642422
Q10N_recoded	480	0.122917	0.413115	486	0.123757	0.411505
Q10O_recoded	474	0.084388	0.320625	486	0.089243	0.319683
Q10P_recoded	470	0.059574	0.236949	486	0.065675	0.238988
Q11A_recoded	481	0.151767	0.392431	486	0.152963	0.390902
Q11B_recoded	483	0.440994	0.595746	486	0.440085	0.594192
Q11C_recoded	482	0.201245	0.440844	486	0.201708	0.439555
Q11D_recoded	479	0.375783	0.534107	486	0.37635	0.530729
Q11E_recoded	481	0.093555	0.31882	486	0.093316	0.317726
Q11F_recoded	483	0.318841	0.588441	486	0.320171	0.589639
Q11G_recoded	477	0.436059	0.666264	486	0.435032	0.661572
Q11H_recoded	472	0.552966	0.72369	486	0.557435	0.71768
Q12A_recoded	485	2.657732	1.265551	486	2.656625	1.264481
Q12B_recoded	474	1.204641	1.344592	486	1.205675	1.332625
Q12C_recoded	473	0.687104	1.045259	486	0.693151	1.038441
Q12D_recoded	472	0.595339	0.914277	486	0.598301	0.907151
Q13_recoded	474	3.92616	0.94948	486	3.925147	0.93971
Q14A_recoded	472	3.260593	0.605963	486	3.25016	0.603288
Q14C_recoded	454	3.156388	0.637144	486	3.137581	0.628332
Q14D_recoded	471	3.218684	0.587956	486	3.207433	0.584945
Q14E_recoded	435	3.114943	0.672455	486	3.092999	0.646449
Q15A_recoded	480	3.202083	0.738726	486	3.199996	0.737092
Q15B_recoded	484	3.721074	0.453523	486	3.720392	0.452783
Q15C_recoded	479	3.394572	0.660331	486	3.392307	0.659362
Valid N (listwise)	**228**			**486**		

Table C.2—Post-Intervention Survey Data-Descriptive Statistics for Listwise Deletion vs. Imputed Data

Descriptive Statistics Listwise Deletion				**Descriptive Statistics Imputed Data**		
Item	**Listwise N**	**Listwise Mean**	**Listwide Std. Deviation**	**Imputed N**	**Imputed Mean**	**Imputed Std. Deviation**
Q3A_recode	454	2.735683	0.613105	467	2.733666	0.607146
Q3B_recode	436	2.857798	0.544953	467	2.849542	0.532091
Q3C_recode	434	2.728111	0.615273	467	2.733287	0.598274
Q3D	440	2.915909	0.495742	467	2.912427	0.486432
Q4A_recode	444	2.603604	0.936149	467	2.59798	0.917569
Q4B_recode	454	3.202643	0.834357	467	3.199503	0.824361

Q4D_recode	444	2.997748	0.882483	467	2.992903	0.869226
Q6	458	2.017467	0.909301	467	2.013451	0.903886
Q8	461	1.960954	0.521905	467	1.959479	0.520004
Q9A_recode	458	1.978166	0.748129	467	1.983823	0.747746
Q9B_recode	458	1.984716	0.726029	467	1.99228	0.72707
Q9C_recode	458	2.010917	0.704697	467	2.014324	0.703238
Q9D_recode	459	2.217865	0.776586	467	2.219331	0.772078
Q9E_recode	462	2.251082	0.794332	467	2.250183	0.790407
Q9F_recode	463	2.414687	0.811684	467	2.413081	0.808907
Q9G_recode	457	1.752735	0.616048	467	1.75503	0.611264
Q9H_recode	447	1.749441	0.656013	467	1.762669	0.657892
Q10A_recode	461	0.503254	0.801147	467	0.505986	0.798267
Q10B_recode	464	0.99569	1.170176	467	0.995176	1.169076
Q10C_recode	464	1.165948	1.364643	467	1.166612	1.362335
Q10D_recode	463	1.220302	1.415383	467	1.230114	1.416348
Q10E_recode	465	1.324731	1.497099	467	1.328258	1.495653
Q10F_recode	463	0.794816	1.025125	467	0.806258	1.029577
Q10G_recode	421	0.87886	1.177995	467	0.903638	1.15267
Q10H_recode	457	0.142232	0.529305	467	0.152435	0.531583
Q10I_recode	457	0.54267	0.81032	467	0.550401	0.80592
Q10J_recode	430	0.744186	1.279077	467	0.748418	1.244296
Q10K_recode	436	0.362385	0.942902	467	0.393788	0.938083
Q10L_recode	447	0.400447	0.723283	467	0.415613	0.72476
Q10M_recode	444	0.333333	0.66967	467	0.351713	0.673882
Q10N_recode	462	0.186147	0.461045	467	0.193057	0.465251
Q10O_recode	454	0.110132	0.353142	467	0.122962	0.361871
Q10P_recode	446	0.116592	0.373075	467	0.130974	0.381426
Q11A_recode	462	0.170996	0.430636	467	0.174245	0.430209
Q11B_recode	465	0.513978	0.619648	467	0.5144	0.618454
Q11C_recode	465	0.305376	0.522421	467	0.305898	0.521399
Q11D_recode	466	0.405579	0.561	467	0.405004	0.560536
Q11E_recode	464	0.094828	0.31461	467	0.095524	0.314852
Q11F_recode	467	0.396146	0.603482	467	0.396146	0.603482
Q11G_recode	463	0.464363	0.653267	467	0.464311	0.650878
Q11H_recode	463	0.634989	0.719718	467	0.634427	0.717116
Q12A_recode	465	2.690323	1.168375	467	2.687908	1.166601
Q12B_recode	462	1.294372	1.205524	467	1.293718	1.200735
Q12C_recode	464	0.728448	1.011579	467	0.728745	1.009205
Q12D_recode	464	0.5625	0.841919	467	0.566534	0.840891
Q13_recode	463	3.950324	0.892316	467	3.946425	0.890721
Q14A_recode	462	3.19697	0.612728	467	3.194751	0.610401

Q14C_recode	447	3.071588	0.613212	467	3.059684	0.604772
Q14D_recode	458	3.148472	0.557236	467	3.141238	0.556294
Q14E_recode	420	2.995238	0.6444	467	2.978175	0.622333
Q15A_recode	466	3.150215	0.924557	467	3.149959	0.923581
Q15B_recode	466	3.688841	0.575264	467	3.688499	0.574694
Q15C_recode	465	3.35914	0.735527	467	3.358824	0.734114
Valid N (listwise)	**240**			**467**		

Appendix C: Police Intervention Protocol

SAN BERNARDINO VALLEY BROKEN WINDOWS POLICING EXPERIMENT: POLICE INTERVENTION PROTOCOL

MAY 15, 2008

PARTICIPATING POLICE DEPARTMENTS: COLTON, ONTARIO AND REDLANDS

EXECUTIVE SUMMARY

In practice, broken windows policing is designed to prevent serious crime through the police paying attention to, and consistently addressing, public disorder problems. The idea behind this model of policing is that when disorder and nuisance crimes are allowed to flourish in a particular neighborhood, law-abiding residents may withdraw from involvement in the community and spend less time using public areas for legitimate purposes as their fear and frustration increase. With this increase in fear and withdrawal, disorder problems in the neighborhood are likely to grow in frequency and severity because fewer residents are available to discourage, report, or keep an eye on disruptive behavior. Eventually, the neighborhood may acquire a reputation as being vulnerable – a place where the community is less likely to "do something" about crime. With this knowledge, felony offenders may begin to target the neighborhood for serious criminal activities. As such, broken windows policing is designed to 'preempt" the development of serious crime and community decline by targeting public social and physical disorder problems. By not allowing disorder to go untended, the police can prevent residents from withdrawing from the community and in turn prevent criminals from becoming emboldened and moving their activities into these neighborhoods.

During the current study this idea is being put to the test by delivering an intervention designed around the broken windows model to randomly selected target street blocks in your city. An equal number of blocks were randomly assigned to the control group. These control blocks must not receive any broken windows policing practices during the sixth month study period. This is a "gold standard" design for evaluation and will provide the most valid test of the effectiveness of broken windows policing to date. As such, this study is of national importance. During the intervention you will focus on reducing disorder in the target street blocks in your city. The goal is to do everything possible to eradicate disorder in these areas. This means not allowing loitering or public drinking, attending to people who litter and organizing litter clean ups, promptly arranging for graffiti to be removed and so forth. This intervention handbook outlines a "step up" approach for dealing with specific social disorders such as public drinking or loitering. The goal is not to issue citations or arrests for every case, as in many cases a verbal warning will suffice. The step up approach of the intervention means that citations or arrests will be relevant for repeat offenders or in cases in which aggravating factors warrant citation or arrest on first offense. For physical disorders such as graffiti or litter, your role will be to make note of such problems in target blocks and notify the designated supervising officer in your department who will then contact the relevant agency to rapidly clean up or repair the reported physical disorder problem. You should also monitor the status of reported problems to ensure they are dealt with in timely manner by the relevant agency.

This handbook provides selected examples of how specific disorder problems may be dealt with. It also concludes with an explanation of why such a strategy is expected to work according to the broken windows model. The final section of this document will outline why such a focus on disorder and nuisance crimes is said to improve quality of life and community safety.

BROKEN WINDOWS POLICING IN PRACTICE

In practice, broken windows policing is designed to prevent serious crime through the police paying attention to, and consistently addressing, public disorder problems involving citizens disturbing the peace, public drunkenness, loitering after dark, noise complaints, vandalism, destruction of property, and minor drug-related offenses. The idea behind this model of policing is that when quality of life and nuisance crimes are allowed to flourish in a particular neighborhood, law-abiding residents may withdraw or spend less time using those public areas for legitimate purposes as their fear and frustration increase. With this increase in fear and withdrawal, disorder problems in the neighborhood are likely to grow in frequency and severity because fewer residents are available to discourage, report, or keep an eye on disruptive behavior. Eventually, the neighborhood may acquire a reputation as being vulnerable – a place where the community is less likely to "do something" about crime. With this knowledge, felony offenders may begin to target the neighborhood for serious criminal activities.

Therefore, the emphasis on street-level disorder is intended to pull the neighborhood away from the tipping point by consistently attending to public nuisances that make the neighborhood less attractive to law-abiding residents and more attractive to criminal offenders. In their influential article in the Atlantic Monthly, James Q. Wilson and George Kelling proposed that police could most effectively prevent crime by focusing on the minor problems that initiate this cycle of decline. The key is to never ignore the small violations – to respond every time with some type of police action. However, it is worth noting that broken windows policing is not the same as a zero tolerance strategy in that formal action (i.e., arrest or citation) is not always expected or required. While persistent or defiant conduct, or a preexisting arrest warrant, may justify an arrest, an informal response may be sufficiently effective. The key is that police habitually take action to prevent these issues culminating over time and leading to a decline in control over the neighborhood. Regardless of whether informal police action involves a warning, a polite reminder, or a firm "knock it off," the broken windows model requires that officers actively engage individuals involved in disruptive, fear-provoking, or suspicious conduct with the goal of negotiating a consensus with citizens about what is and what is not acceptable behavior within a specific neighborhood.

Residents living in neighborhoods that experience broken windows policing should be made aware that something has changed with the regard to how officers are responding to street-level annoyances and nuisance behaviors. From an onlooker's perspective, what has changed is that officers on the street are working hard to close the social distance between themselves and disorderly individuals by routinely engaging them in dialogue so that there is no ambiguity about which behaviors are not permissible in specific public areas. Another priority - which was the hallmark of the New York City Police Department's broken windows initiative - is that police notify and work with city agencies and property owners to repair or clean up damaged property that may blemish a neighborhood and give residents the impression that the neighborhood is becoming untenable. Although "rapid repair" depends on police leadership to collaborate with city agencies, it is the line officer who is most capable of routinely surveying neighborhoods to identifying signs of physical disorder that are problematic and require attention.

OVERVIEW OF THE CURRENT STUDY

You are currently participating in a study designed to examine the effectiveness of broken windows policing in three cities in the San Bernardino Valley area of California. Because broken windows policing has never been studies prospectively, this is the first study of its kind. Broken windows policing will be put into practice on a number of randomly selected street blocks in each city, with an equal number of blocks to serve as control areas. The control areas will not receive broken windows policing, but will continue to receive ordinary levels of patrol and attention to calls for service. The study is designed to compare changes in crime, fear of crime, and residents' perceptions of crime and disorder in the treatment and control areas after the six-month intervention period. During the intervention, your role as part of your department's Broken Windows Unit will be to routinely patrol all of the targeted street blocks in your city, assess disorder and minor crime problems and address them on a case by case basis. As noted earlier, the key to the intervention strategy is that no public disorder violations are overlooked by police, but rather are dealt with in an appropriate manner to prevent them from accumulating over time, thus discouraging further problems from developing. The next section of this document is an intervention protocol or handbook. It will discuss various types of disorder, and outline suggested approaches that may be used for dealing with each problem under the framework of broken windows policing.

POLICING DISORDER- AN INTERVENTION PROTOCOL

As noted above, broken windows policing does not prescribe a one size fits all approach in which every incident is dealt with in the same manner. As you are aware, certain forms of disorder warrant specific types of police responses; however, different incidents involving the same type of disorder may require different responses depending on the circumstances.

The purpose of this handbook is to provide a number of practical examples of social and physical disorders that you may target during the intervention period. The handbook is not meant to be an exhaustive list of all the disorder problems you may encounter during the program, but rather to just provide some examples of the most common problems and how they may be dealt with. Some of these order maintenance problems will be issues your department is already focusing on, while others may seem somewhat trivial and unworthy of police attention. During the intervention period, it is important to keep in mind that the significance of these minor events is not the isolated impact of each individual event. Rather, the concern is the cumulative impact that these events have over time when they are ignored and allowed to continue unabated. In short, isolated acts of disorder may be compounded over time and, as a result, the damage to the quality of life in a specific neighborhood can be exponential.

The order maintenance approach suggested in this intervention protocol is only intended for the target areas of the study. Before the intervention begins, you will be provided with a map of the city with the targeted blocks highlighted. An equal number of control blocks will be highlighted in a different color. For the purpose of study, it is important that broken windows strategies are not routinely practiced in these control areas. Moreover, the amount of time spent driving

through the control areas during a typical shift should be held to a minimum, unless a service call or pursuit requires your presence in these areas. This study involves a randomized experimental design which provides the most credible test of a program's effectiveness. However, a randomized experiment depends largely on the treatment only being delivered in the randomly chosen target areas. Your commanding officer will discuss this issue with you in greater detail before the beginning of intervention period.

Below, the intervention protocol is divided into two sections. The first section provides a selection of social disorders (i.e., disorderly behaviors) and suggests approaches for responding to each type of disorder. The second part provides a list of physical disorders (i.e., physical conditions in the neighborhood) and suggested strategies for how they might be dealt with. Again, these lists are not meant to include all the problems you will address during the study, but rather to just provide some examples of how common disorder problems may be treated. At the outset, it is worth noting that the suggestions offered here are basic steps that could be taken in the typical case for each type of disorder. In practice aggravating circumstances may require skipping to a more intensive response, such as citation or arrest, rather than just giving a verbal warning. Conversely, mitigating factors may justify issuing a less severe response than what is suggested in the handbook.

SOCIAL DISORDERS

Aggressive Panhandling/Soliciting for Money

Some public areas are negatively impacted by individuals soliciting aggressively for money or panhandling in way that blocks the flow of pedestrian traffic or obstructs public passageways. At times, residents and pedestrians may perceive this behavior to be threatening or frightening, particularly when the disorderly individual makes physical contact or demonstrates signs of intoxication. One consequence is that citizens may go out of their way to avoid certain public areas out of fear or simply to avoid being harassed.

As such, aggressive panhandling or soliciting in an intimidating manner is a behavior that deserves increased police attention during the broken windows intervention. The suggested approach is to talk with panhandlers and explain that soliciting for money will not be tolerated in the target area, especially when this behavior involves physical contact, blocks the flow of pedestrian traffic, or is perceived by citizens as threatening. If the same panhandlers are repeatedly found in a particular areas after receiving a warning, further action, such as citation or arrest, should be taken as seen fit.

Additionally, aggravating factors such as intoxication or deliberate attempts to threaten or intimidate pedestrians may warrant more than a verbal warning during a first incident.

Drug Activity

The public use of marijuana or the possession of small quantities of marijuana typically calls for an arrest in any situations where there is sufficient evidence. The use of stop and frisk tactics is strongly encouraged for public order problems on the targeted blocks known to have a history of drug activity, particularly at night.

Fights and Altercations in Public Areas

As you are aware, the appropriate response to fights and altercations in public areas depends largely on the nature of the incident. If there is evidence of a physical assault (i.e., bodily injury) or if a suspect is found to be in possession of an illegal weapon or small amounts of narcotics, or if intoxication is apparent, then an arrest is justified. If the incident involves a hostile or disruptive verbal argument, the suggested approach is to intervene and separate the parties if necessary. Firmly ask the parties to leave the public area and follow up before the end your shift. The key is not to let them sort out the disagreement on their own. Although the subjects may contend that the dispute is a "personal matter," no matter is personal when it takes place in a public area under the watchful eyes of nearby residents and children.

Littering

If you observe an individual discarding fast-food packaging, a paper bag, a cigarette box or other small items of trash on the street or sidewalk of one of the target blocks, an appropriate initial response is to remind the person that throwing away garbage in public is a violation, they could be fined, and then firmly asked to pick up their trash. If the individual refuses to pick up their trash, promptly issue a citation.

Because some people consider litter or noise violations trivial, they may occasionally be noncompliant or confrontational when confronted with a formal police response. In dealing with such individuals, explain to them that if their violation is so trivial, then they should not mind the simple courtesy of picking up their trash or turning down their music.

Loitering

As you are aware, loitering is a social disorder that is difficult to address because police responses vary depending on the situation. It is important to distinguish between loitering that is temporary and not bothersome to area residents or businesses as opposed to loitering that is disruptive and a nuisance to the community. Loitering may be disruptive for a number of different reasons: 1) it may block a pathway or the flow of pedestrian traffic; 2) it may involve a group that is behaving in a rowdy, boisterous, aggressive or fear-provoking manner; 3) it may involve individuals who are excessively loud based on the community standards or the time of day; 4) it may involve public drunkenness, harassment or other misdemeanor offenses; or 5) it may violate a curfew or a "no loitering" sign posted in a specific location (i.e., in a playground after dark or in front of an apartment complex). In such instances, the suggested approach is to politely but firmly ask the individuals to leave the area and then follow-up shortly thereafter. Take necessary action if the individuals remain noncompliant.

Noise Complaints

Noise complaints should be taken seriously and consistently addressed in an appropriate manner. A candid talk explaining that unreasonable noise levels are disruptive to public order and residential life may be the best approach during the first contact. If an individual is heard playing loud music in a vehicle parked on one of the targeted blocks, consider approaching vehicle, explaining that the volume is a problem for area residents and business owners, and firmly requesting that they lower the volume. If the same individual is found playing loud music in the target area later during your shift, a citation is appropriate.

Public Drinking

Public drinking is a concern for a variety of reasons, ranging from the linkage between intoxication and more serious offending, to broken bottles strewn upon streets and sidewalk. As such, this is an obvious target for increased attention within the framework of broken windows policing.

The suggested approach for handling public drinking is to firmly explain to the subject that consuming alcohol in public areas is not permissible and then to confiscate the alcohol. Take note of the individual and follow up before the end of your shift. If the behavior persists after a first warning, formal action is reasonable. Aggravating circumstances such as aggressive or defiant behavior, or a preexisting arrest warrant, will justify more than just a warning during the initial contact with the subject.

Public Intoxication

If you have reasonable suspicion that a person loitering in a public location is under the influence of drugs, a search is appropriate. If drug paraphernalia is found, an arrest is justified. If not, a firm warning to leave the target area may be appropriate, accompanied by a follow up shortly thereafter. If the individual continues to loiter and is disturbing the peace or exhibiting signs of public intoxication, an arrest or citation is appropriate. Official police actions should always be taken in response to underage persons exhibiting signs of intoxication on the targeted street blocks. An effective response to underage drinking may be to call the minor's parents and straightforwardly advise them that the police are cracking down on illegal behavior in public areas, and that status offenses such as underage drinking will be taken seriously.

Aggravating circumstances may justify taking further action during the initial contact, proceeding directly to citation or arrest.

Soliciting for the Sale of Drugs and Prostitution

Street-level prostitution and drug activity may not occur on many of the targeted street blocks. Nonetheless, minor drug and prostitution offenses are vice crimes your department may already be devoting attention to. These are relatively serious offenses compared to many of the public disorders discussed in this handbook. As such, all transactions and solicitations involving prostitution and the possession or sale of drugs in the target areas typically warrant an arrest.

Theft from Vehicles

As expected, breaking into and theft from a motor vehicle necessitates an arrest.

Unattended Dogs

Unattended dogs, particularly those exhibiting unusual behavior or not wearing a collar should be noted and reported to Animal Control or a similar agency in your jurisdiction.

Vandalism

Within the context of this program, vandalism refers to the act of damaging or defacing municipal or privately-owned property. This is a serious offense and calls for a misdemeanor arrest in most instances. The physical appearance of mailboxes, building facades, walls, street signs and storefronts influences the general perception of a neighborhood. Regardless of whether serious crime problems exist in a neighborhood, rampant signs of decay can ultimately stigmatize the area. From a law enforcement perspective, vandalizing a stop sign or a school building is similar to vandalizing other municipal property, such as a police cruiser.

PHYSICAL DISORDERS

Rapid repair was a central feature of the NYPD's broken windows program. With regard to physical disorder, your role during the intervention will be to pay closer attention to declining or unsightly physical conditions in the treatment areas, take note of the signs of physical disorder that are particular problematic, and report this information to the commanding officer of your unit. Your police department will be collaborating closely with other city agencies to identify municipal and privately-owned property that is in need of repair, replacement, or clean-up. Public services will either be directly involved in rapid repair efforts or city agencies will enforce code violations on private property to coerce compliance with your department's rapid repair priorities.

Each week, a brief windshield survey of the physical conditions on each of the targeted street blocks will be sufficient to identify emerging problems and to monitor existing priorities. After a problem is reported for rapid repair, you will be asked to report on the city's progress in addressing the identified problems during routine broken windows unit meetings. If a rapid repair problem has not been addressed within a reasonable timeframe, a person designated within your police department will follow-up with the appropriate agency.

Abandoned Buildings

If an abandoned or boarded-up building is attracting problems or becoming a nuisance to the community, it will be necessary to inspect the building to make sure it is properly locked down and there are no vulnerable entry points. Discarded alcohol bottles, plastic drug bags and paraphernalia, and deserted blankets and clothing are some obvious signs that a property is becoming a magnet for vagrancy, squatting, and a range of order maintenance problems. If an abandoned building is found to be unsecured, a designated officer within the broken windows unit will be responsible for contacting the Housing Authority or other relevant agency. Follow-up efforts by officers should involve inspecting the property to ensure that it has been properly secured in a timely manner and that it remains secured. Additionally, any graffiti (i.e., tagging by gang members) should be promptly removed by the appropriate city agency.

Abandoned Vehicles

Abandoned vehicles should be reported to the city agency responsible for towing and auto removal.

Building and Housing Code Violations

Buildings with potential code violations should be noted, and a designated person within your unit will be responsible for notifying the Housing Authority or the comparable agency in your jurisdiction. A steady line of communication will be established between your department and the Housing Authority to augment building inspections and enforcement efforts on the targeted street blocks. Special attention should be paid to any properties with possible code violations that harbor consistent problems relating to disorderly groups, underage parties or drug activity.

Persistent pressure on landlords and attention to code violations may induce compliance in dealing with a wide range of public disorder problems.

Inadequate Street Lighting

Targeted street blocks with insufficient or burnt out street lighting should be noted and reported to the relevant agency by the designated unit liaison. The areas should be inspected routinely to ensure that the lighting problems are rectified in a timely manner.

Litter

The target streets should be inspected routinely for excessive litter and noted accordingly. Your commanding officer or another contact person within your department will be responsible for making a request with the appropriate agency. Once a clean-up has been requested, line officers should follow-up within a week to confirm the targeted block received the requested services. Regularly scheduled broken windows unit meetings will provide a forum for taking stock of progress relating to rapid repair and clean-up requests.

Repairs to Sidewalks and other State-Maintained Items

Damage to sidewalks and other state-maintained items should be reported to the proper agency for repair. Although such repairs take longer to complete than clean-up efforts, the target areas should be monitored to ensure that the repairs take place in a reasonable timeframe.

Vacant Lots

Vacant lots are only a serious concern if they are overgrown with weeds, strewn with trash and debris, or magnets for vagrancy, drug users or other disorder problems. Vacant lots that attract crime-related problems and blight the physical appearance of a neighborhood should be carefully noted. The broken windows unit should work together to develop a strategy for locking down the lot, effectively restricting access, and improving the physical appearance of the lot to motor vehicle traffic and pedestrians.

BROKEN WINDOWS POLICING – THE THEORY OF WHY IT SHOULD WORK

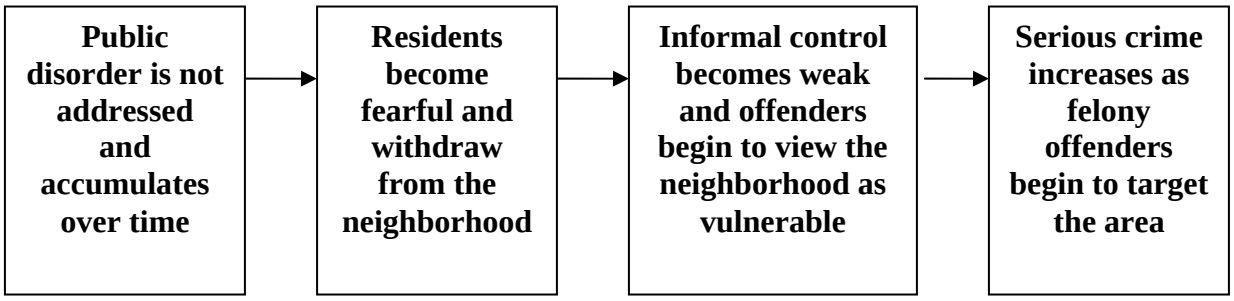
The above section provided examples of public disorders and suggested police responses. The last section of this handbook explains the theory of why broken windows policing should be an effective strategy for preventing serious crimes. This is necessary because it may not make intuitive sense that focusing on seemingly trivial disorders and minor offenses would have a major impact on serious crimes in neighborhoods teetering on the tipping point.

As discussed earlier, the key is not to think about public disorder crimes as individual events. One individual discarding a candy wrapper in an empty lot is relatively insignificant. Similarly, the single act of drinking from a 40-ounce bottle of beer on the front stoop of an apartment building seems trivial. However, the combined impact of many trivial events accumulating over time may signal to residents that such behavior is becoming acceptable or normal in that neighborhood. They may become frustrated or intimidated or even fearful. Moreover, offenders may increasingly come to believe that police and residents are less willing to "do something" about law violating behavior. From their perspective, the neighborhood is becoming a suitable place for predatory crimes.

The longer that individual acts of littering are ignored the worse the appearance of the vacant lot becomes. More importantly, when the vacant lot comes to resemble a landfill, even law-abiding citizens may become less inclined to refrain from littering when passing the vacant lot because it is appears that nobody cares about littering in that area. As such, why should they care? The same is true on a grand scale. When most of the minor incivilities in a neighborhood are ignored, teenagers may become more willing to loiter and harass pedestrians. Vagrants and small-time drug dealers may come to feel at home on specific street corners. In declining areas, residents are less willing to become involved in community affairs and more disposed to staying in their homes. Social relationships may become weaker over time. Residents may be less trusting of one another and more reluctant to work together to solve local problems. As a result, fewer adults are available to keep an eye on teenagers, to tell kids who are causing problems to "knock it off," and to call the police when they observe more serious criminal activities.

In theoretical terms, Wilson and Kelling propose that over time untended disorder causes increased levels of fear. In time, citizens withdraw from the community, lowering informal social controls. In turn, this eventually leads to an increase in the frequency and severity of disorders as some citizens realize they can get away with it. In due course, serious offenders from other areas will begin to target this neighborhood as they perceive it to be vulnerable and believe their chances of being detected and arrested to be low. This idea is depicted in the flow chart below.

Figure 1. The Broken Windows Hypothesis



This discussion suggests that focusing on disorder is the key to preventing crime under the broken windows framework. If disorder is dealt with promptly and consistently, citizens are less likely to witness signs of decay, become worried and withdraw. Moreover, in the process of cracking down on incivilities, police officers may come in contact with felony offenders in possession of drugs and weapons, and those with preexisting arrest warrants. The overall impact is that informal control networks within the community will continue to function effectively. People will go about their daily lives frequenting public areas, and children will play under the watchful eyes of their parents. Neighbors will keep an eye on each other's children and the goings on in the community in general. Many problems will be dealt with informally, and the police will be called when needed. In short, the community will retain the ability to regulate itself rather than spiraling into a cycle of decline that ends with the area being overrun by opportunistic offenders. This is the theoretical backdrop of broken windows policing. It is a useful frame of reference as you implement the tactics outlined in the intervention protocol and strategies developed by your unit. So, in the end, individual events *are* paramount – dealing with each one is the most efficient way to prevent larger problems from developing over time in neighborhoods on the brink of decline.

Appendix D—Police Activity Log Sheet

The following page provides the one page log sheet all project officers used to record the activities they took to address social and physical disorder at the 55 target street blocks. Project officers were to complete one log sheet each time visited any of the target street blocks during the intervention period.

UID:_____

Broken Windows Policing Experiment:

Complete one of these forms every time you visit a NEW treatment street segment during your shift

Date MM/DD/YY	Street Segment (no suffix):	City: (Circle): ONT RED COL
Officer 1 ID#:	Officer 2 ID#:	
First Arrived at Seg. (Circle): SI DISP BACK-	Time Arrived (24 HR):	Time Departed (24 HR):

Once at segment **Officer Initiated/ Observed "SI"** or **Dispatch "DI"** or **Back up "BU"** or **Citzen Flag-Down "FD"**		**Social**	**Specific Address number,** or **"STR" /** or **"ALLEY"**	**# Sus.** (social)	**Indicate # (Number) of Actions Taken For Each Option**										
					Citizen (s) or **Victims talked to**	**Offender(s)/ Subject (s) talked to**	**Mediated/ Counselled**	**Field Interviewed**	**Stop & Frisks**	**Warned/Advised**	**Arrested**	**Cited**	**Other Actions taken** (Specify what- e.g. "Contact parent" "72 hr tag", etc.)	**Referral Made to handle problem** (Specify to who - e.g. Mgr., CE, ABC, Grafitti Removal, Tow Co. etc.)	**Follow-up on prior problem/action taken**
				#	#	#	#	#	#	#	#	#	# and Specify	Specify	
	1	Destruction of Property													
	2	Drinking in Public													
	3	Drug Activity													
	4	Fist Fight													
	5	Littering													
	6	Loitering													
	7	Noise													
	8	Pedestrian Check													
	9	Prostitution													
	10	Public Urination													
	11	Soliciting for Money													
	12	Suspicious/Erratic Beh.													
	13	Theft from Vehicle													
	14	Traffic Stop													
	15	Vandalism													
	16	Verbal Dispute													
	17	Other (Specify):													
		Physical (no suspects present)	"	**# Occ.** (physical)		X	X	X	X	X	X				
	18	Abandoned Vehicle													
	19	Broken Glass													
	20	Bldg. Code Violation													
	21	Grafitti													
	22	Inadequate Lighting													
	23	Litter/Trash													
	24	Illegal Dumping													
	25	Parking													
	26	Shopping Cart													
	27	Unattended Dogs													
	28	Vehicle Other													
	29	Other (Specify):													

Provide a brief description of the time spent on segment (e.g. if drove segment, walked segment etc.) and/or problems
Specify name of apartment complex or business where applicable.