



# National Institute of Justice

## R e s e a r c h i n g B r i e f

March 2001

### Issues and Findings

**Discussed in this Brief:** An assessment of how community organizations in Hartford, Connecticut, used the Neighborhood Problem Solving (NPS) system, a computer-based mapping and crime analysis technology. The NPS system enabled users to create a variety of maps and other reports depicting crime conditions by accessing a database containing the most recent 2 years of incident-level police information.

**Key issues:** The objective in Hartford was to extend basic mapping and crime analysis technologies beyond the law enforcement community by putting them into the hands of neighborhood-based organizations so they could analyze incident-level data and produce their own maps and reports. The assessment discussed in this Brief was conducted to determine the extent to which community organizations used the system, to understand how these organizations used the software, and to assess the effect of the system on community organization effectiveness, perceptions of neighborhood safety and quality of life, and police-community relations.

**Key findings:**

- Seven of the 14 sites used the NPS system regularly. Two sites used the system on several occasions but not on a regular basis. The remaining five sites either did not use the system at all or used it only once.

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## Crime Mapping and Analysis by Community Organizations in Hartford, Connecticut

By Thomas Rich

Crime mapping has become increasingly popular among law enforcement agencies and has enjoyed high visibility at the Federal level, in the media, and among the largest police departments in the Nation, most notably those in Chicago and New York City. However, there have been few efforts to make crime mapping capabilities available to community residents and organizations, although a National Institute of Justice (NIJ)-funded project in Chicago in the late 1980s aimed at introducing mapping to community groups showed that this technology could benefit them.<sup>1</sup> Access to timely and complete incident-level crime information—among other obstacles—has inhibited the spread of mapping to communities.

To get the community more involved in crime prevention, Hartford, a city of 130,000 in central Connecticut, expressed an interest in providing community-based organizations with a crime mapping and analysis system. This technology—dubbed the Neighborhood Problem Solving (NPS) system—was developed and implemented in 1997 and 1998 in 14 locations throughout Hartford, including community organization headquarters, public libraries, and

community policing field offices. Developed with NIJ funding, the system enables users to create a variety of maps and other reports depicting crime conditions by using a database containing the most recent 2 years of incident-level police information, including citizen-initiated calls for service, reported crimes, and arrests. Although some police departments routinely publish aggregate crime statistics and a few publish incident-level crime information on the Internet, the objective in Hartford was to extend basic mapping and crime analysis technologies beyond the law enforcement community so that neighborhood-based organizations could analyze incident-level data.

NIJ sponsored an assessment of Hartford's system by Abt Associates Inc. to determine the extent to which community organizations used it, to understand how these organizations used the software, and to assess the effect of the system on community organization effectiveness, perceptions of neighborhood safety and quality of life, and police-community relations. This Research in Brief discusses the findings of this research.

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## Issues and Findings

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- Factors explaining the variety of use patterns include the community organization leader's degree of interest in the system, available personnel resources at the site, the site's experience with community organizing and community-based problem solving, and the relevance of both the system and the crime data to the organization's primary work objectives.
- While all regular-use sites made extensive use of crime data, some sites placed the highest value on arrest data and others closely examined calls-for-service data. Maps were the most popular report format.
- The majority of frequent NPS users felt they gained a "much better understanding" of crime conditions in their neighborhood using the system. The majority of frequent users believed that access to comprehensive crime data did not change the extent to which they felt safe in the neighborhood.
- Hartford's extensive problem-solving infrastructure, including neighborhood problem-solving committees, veteran community organizers, and a supportive environment in the city government and police department, was key to the program's success. Without this infrastructure, the system likely would have been used by interested parties to examine crime information but not necessarily for effecting neighborhood change.

**Target audience:** City- and county-level police, planning and administrative officials, neighborhood-based organizations, and researchers.

## Project origin

In November 1994, Hartford was 1 of 12 cities to receive a Comprehensive Communities Program (CCP) grant from the U.S. Department of Justice's Bureau of Justice Assistance. The Hartford CCP sought to shift the focus of city government away from the professional civil service model to a decentralized government that recognizes residents as its "customers" and attends to problems and solutions they identify. In 1988, the police department had initiated community-oriented policing with the formation of the Community Service Officer (CSO) unit. CSOs focused exclusively on problem solving within a specific neighborhood. The department also formed partnerships with other agencies, including schools, youth organizations, and other criminal justice agencies. In 1995 and 1996, Hartford established a number of CCP-supported initiatives and programs that created, in the words of one veteran community organizer, "an infrastructure" that supported the NPS system. According to this organizer, having this infrastructure in place was a necessary condition for widespread acceptance and use of the NPS system.

Citizen-based problem-solving committees, one of the most important CCP initiatives, were formed in each of Hartford's 17 neighborhoods. In many neighborhoods, these committees consisted of residents already active in the existing neighborhood citizen groups, but the committees were an entirely new group for some neighborhoods. The committees were charged with identifying and prioritizing neighborhood problems and, with the help of city agencies, implementing solutions to those problems. The city retained an independent consultant to conduct problem-solving training for the committees. The training focused on recognizing and analyzing problems, developing and implementing

strategies, and assessing results. City employees were trained in community-oriented government techniques. In addition, CCP began funding the community organization United Connecticut Action for Neighborhoods in 1997 to provide additional training and technical assistance to the committees.

Beginning in 1995, the committees were eligible to receive personal computers equipped with standard business productivity software and a laser printer. Many committees immediately took advantage of this offer, although some did not apply for their computers until 2 or 3 years later. The NPS system was eventually installed on these computers. The Hartford Police Department and Abt Associates jointly administered the NPS program. The police department provided data on calls for service, crimes, and arrests to Abt Associates, which formatted the data and provided it to the community organizations. Abt Associates maintained the NPS system software, while the city of Hartford maintained the computers. Trinity College in Hartford provided the committees with e-mail and Internet accounts beginning in 1996.

## System capabilities

In 1997, representatives of the problem-solving committees, Hartford city officials involved in the city's CCP, Abt Associates staff, and representatives from the Hartford Police Department and other city service agencies held a series of meetings to determine what information—particularly automated information—would be useful (and could be provided) to the committees to support their problem-solving activities. Ideally, an information system supporting problem solving—especially one with mapping capabilities—would contain data from a variety of sources, including city, State, and Federal agencies; private and nonprofit organizations; and neighborhood

based organizations. Such data would enable maps to show a multidimensional view of crime. For example, one layer of a map display could contain a descriptive variable, such as the location of burglaries in the past month, while other layers could contain possible explanatory variables, such as demographic and social indicators or the locations of abandoned buildings or liquor establishments.<sup>2</sup>

Committee representatives indicated they wanted access to a variety of information, including police, housing, and code enforcement data that could be tied to specific addresses. Unfortunately, with the exception of police calls for service, crime, and arrest data, information was either not automated or out of date by several months, although projects were under way to improve the quality of the data. By contrast, police calls for service and arrest records were entered in real time (i.e., while the call taker talks to the person calling 911 and the suspect goes through the arrest booking process), and reported crime information was typically automated about 1 week after the police officer submitted his or her completed crime report.

In light of these findings, CCP staff, the police department, and Abt Associates staff decided that the NPS system would initially focus on providing the committees with access to police calls for service, crime, and arrest data.

## Data issues

Prior to participating in this project, the Hartford Police Department had a history of deploying sophisticated technologies in its crimefighting and public safety efforts. Department staff had designed and programmed ad-

vanced computer-aided dispatch, case incident reporting, and online arrest booking systems. The department has used computerized crime mapping since the early 1990s, when it participated in NIJ's Drug Market Analysis Program. Since the mid-1990s, department analysts have distributed weekly crime maps to command staff.

One important difference between a crime mapping tool developed for internal police use and one developed for use by community groups or the general public involves the issue of which data to make available to users. The NPS system provides basic "what, when, and where" information on calls

for service, crimes, and arrests. No names or other personal identifying information are provided (see "Data Elements Provided to Community Organizations"). Community organizations are provided with the most recent 2 years of these data occurring in the organization's area of concern, which typically corresponds to one of Hartford's 17 neighborhoods. For an average-sized community organization, the 2-year timespan of data translates into about 12,000 calls for service, 7,000 crimes, and 1,000 arrests. During the study period, Abt Associates staff provided data to the community organizations every 2 weeks via e-mail

## Data Elements Provided to Community Organizations

**A**ny police department publishing incident-specific information on its Web site or other media must address the issue of what specific data elements, particularly those related to location, should be made available to the public. Police departments must balance the public's right to know against the right to privacy of complainants, victims, and suspects. This important issue is the focus of a forthcoming NIJ publication.

In Hartford, community organizations received incident-specific information obtained with the Neighborhood Problem Solving (NPS) system, which contained the following data elements:

- For each citizen-initiated call for service: call number, date and time the call was received, call-for-service type and category, associated incident report number (if any), block where the police unit was sent, and latitude and longitude of where the police unit was sent.
- For each reported crime: case number, date and time the crime occurred, crime

type and category, block where the crime occurred, and latitude and longitude of where the crime occurred.

- For each person arrested: case number; date and time of arrest; sex, age, and race of the person arrested; charge type and category; street address where the arrest occurred; and latitude and longitude of where the arrest occurred.

The specificity of the location information varied. For arrests, the street number and name (e.g., 542 Main Street) are provided, whereas only the street name and block (e.g., 500 block of Main Street) are provided for calls for service and crimes. However, geographic coordinates (latitude and longitude) of the street number and name are included in the NPS database for calls for service, crimes, and arrests. The coordinates coincide with the Hartford Police Department's street centerline file. Thus, NPS maps show the approximate point along a street where the event occurred but do not indicate on which side of the street the event occurred.

or U.S. mail. Because of the 2-week delivery cycle—and because the police department entered calls for service and arrest information in real time and crime information within a week of when the officer completed the crime report—the data were roughly 10 days to 2 weeks old when delivered.

The NPS software<sup>3</sup> can produce five different types of reports, each of which can be based on either calls for service, reported crimes, or arrests.

- A **detail list** shows records that meet a specified criterion (e.g., all burglaries in a neighborhood over the past year).
- A **top 10 list** shows the most frequent types of events (e.g., the 10 most frequently reported types of crime in a neighborhood over the past month).
- A **time trend graph** shows the number of events occurring over a recent set of time periods (e.g., the number of burglaries in a neighborhood by week over the past 6 months).
- An **event trend graph** shows the percentage change in the number of different types of events over a recent period (e.g., the percentage change in the number of each crime group in the most recent month compared with the previous month).
- A **pin map** shows the location of events over a specified period (e.g., the location of all burglaries in a neighborhood over the past month). Although the report is referred to as a pin map, it is actually a graduated symbol map in which the size of the icon depicting the location is proportional to the number of events at that location.

For all reports, users can specify a desired date and time range. Standard options are available (e.g., for dates, the most recent 2 weeks, the most recent month, and the most recent year), or the user can specify any desired date and time range. Maps and graphs are produced for a specified group of calls for service, crimes, or arrests (e.g., narcotics arrests, violent crime-related calls for service, or burglary crimes). Currently, only one group can be mapped at a time. Detail lists can be sorted by date and time, by type of event, or by address. In addition, detail lists can show all events (e.g., all arrests) or only events in a certain group (e.g., only narcotics arrests).

From June 1998 to March 1999 (the end of the evaluation period), the NPS software was installed at 14 community locations in Hartford: 8 community organization headquarters, 4 community policing substations, and 2 public libraries.

## Site characteristics

The community organizations that received the NPS system and were trained in its use vary considerably in size, resources, and experience in community organizing and problem solving. One has approximately 15 full-time employees, most of whom are neighborhood organizers assigned to one of nine neighborhoods in Hartford. Others have one or two full-time or part-time paid staff. By contrast, the problem-solving committees are essentially groups of concerned citizens with other full-time occupations and have no paid staff or formal office space. Independent of their size and resources, the community organizations and problem-solving committees all appear to possess a strong concern about crime and public safety.

Hartford's Part I<sup>4</sup> crime rate in 1997 was nearly twice the national average, even though the city, like many other cities in the Nation, experienced a significant decrease in crime in the 1990s; from 1987 to 1992, the city recorded between 20,000 and 22,000 Part I crimes per year, and by 1997, the annual total had dropped to slightly more than 12,000. Crime, however, is by no means the only issue of concern to these organizations. An organizer in one neighborhood indicated that the four issues discussed most at neighborhood meetings are (in order of importance) taxes, education, crime, and litter.

Although all community organizations with the NPS system share major crime concerns, they differ in their overall approach to addressing these problems in their neighborhoods. For example, some focus on identifying issues of concern to neighborhood residents and developing approaches to address those concerns. Other organizations focus on delivering services to neighborhood residents, such as sponsorship of job fairs or street-lighting projects. Many of the Hartford problem-solving committees work directly with police CSOs to address specific crime problems.

## System users

There was at least one targeted user—a person trained in the use of the system who received and processed crime data updates and whose reaction to the system was monitored—at each installation site. In many cases, these targeted users showed others in their organizations how to use the system. Having a targeted set of users distinguished this project from one that involved the installation of an NPS-like system at public kiosks or on the Internet to provide information to the

general public. In general, the system in this study was designed for community organizations, and there was no attempt to encourage its use by the general public.

The four types of targeted users were:

- **Block watch organizers**, who work for a community organization and are charged with establishing new block watches and supporting existing block watches. The city of Hartford provided funding to community organizations to hire these individuals.
- **Neighborhood organizers**, who work at community organizations and undertake community organizing activities in the neighborhood to which they are assigned. In particular, neighborhood organizers support the problem-solving committees.
- **Community organization staff**, which refers to other individuals at community organizations who have a variety of responsibilities, including administration, management, grant writing, and community organizing.
- **Problem-solving committee members**, who have other full-time occupations and positions.

### System utilization

The most basic evaluation issue for the NPS system was how frequently the system was used. Across NPS sites, the frequency of system usage varied.

- **Regular users**—7 of the 14 sites used the NPS system regularly on a monthly or more frequent basis during the data collection period.<sup>5</sup>
- **Irregular users**—two sites used the NPS system on several occa-

sions but not on a regular basis during the data collection period.

- **One-time users**—four sites used the NPS system once during the data collection period.
- **Nonusers**—one site did not use the NPS system at all during the data collection period.

At the conclusion of the initial training session at each installation site, all targeted users reacted enthusiastically to the system, praising its ease of use and listing ways in which their organization could use the system. Yet, 5 of the 14 sites either did not use the system at all or used it only once. Why did some community organizations use the system and not others?

The primary reason some sites regularly used the system was that organization leaders affiliated with the site took a personal interest in it. In contrast, the targeted users in several other neighborhoods were largely on their own and without supervisors to encourage them to use the system. In addition, several users were relatively new to the field of community organizing and naturally had a more difficult time integrating an information tool such as the NPS system into their organizing activities.

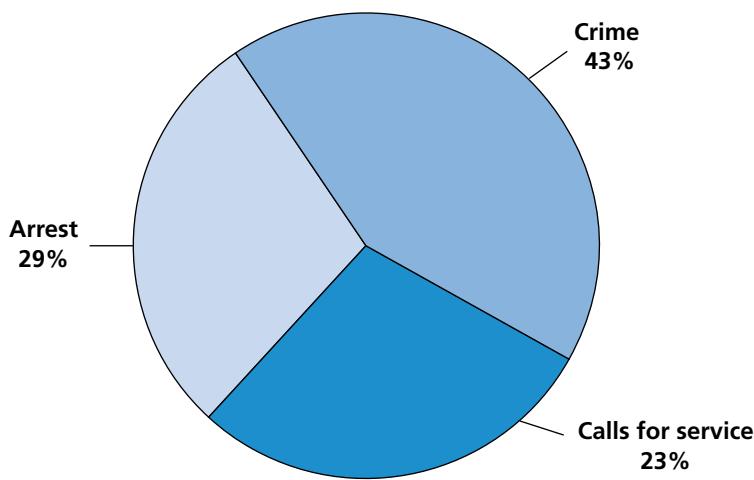
Personnel resources also influenced use patterns. Targeted users at many sites where the system was used regularly were persons whose full-time job was community organizing. At some sites where the system saw little use, however, targeted users had other full-time occupations and did not have access to volunteers, interns, or full-time organizers who could use the system. Some organizations did not regularly use the system because it was not particularly relevant to the targeted user's primary work objectives—for example,

the site's primary objective was to provide job training or other services to residents. Limited accessibility to the computers equipped with the NPS system inhibited system use in two sites.

The types of maps and reports produced with the NPS system provide insight into the general types of police data and data formats community organizations in other jurisdictions might find particularly useful. Each NPS run was based on calls for service, crimes, or arrests (see exhibit 1). Significant site-by-site variations exist, however, among the regular users of the system. For example, three regular NPS users showed little interest in calls-for-service data; their sites used those data in less than 10 percent of their runs. Users at another regular-use site, however, were most interested in calls for service. Users at a third regular-use site focused most often on arrest data, reflecting a strong interest in monitoring the police response to neighborhood problems.

Four of the seven regular-use sites preferred the pin map report format. Across all sites, the pin map was the most preferred report format, and it was used in 39 percent of all NPS runs. The other report formats also showed significant use, ranging from 23 percent (the detail list) to 8 percent (the top 10 list) of all runs, thus reinforcing the notion that maps are only one method of analyzing police data and that a variety of report formats is required to provide useful information to users of police data (see exhibit 2).

Although information about the preferred data types and report formats used in Hartford may provide insight into the possible preferences of community organizations in other cities, the specific type of data displayed in

**Exhibit 1. Percentage of reports generated, by type of data**

Note:  $n = 2,444$ .

the maps and reports is likely to vary depending on the issues of importance to users in those cities. Data preferences in Hartford may be representative of other urban areas, however. Narcotics-related information was the most common type of data to appear in Hartford sites' NPS pin maps, followed closely by Part I crime-related information (see exhibit 3). Together, these data constituted nearly 80 percent of all NPS pin maps. The most common Part I crime-related maps across all sites were burglaries (14 percent of all pin maps), followed by auto theft and aggravated assaults (9 percent each). Overall, the interest in Hartford was serious crime, as opposed to less serious crime and quality-of-life issues. Nevertheless, there were significant variations across the regular-use sites. The percentage of maps depicting narcotics activity, for example, ranged from a low of 8 percent to a high of 81 percent. The percentage of maps depicting noncriminal activity (e.g., accidents, motor vehicle infractions) ranged from 0 to as much as 24 percent.

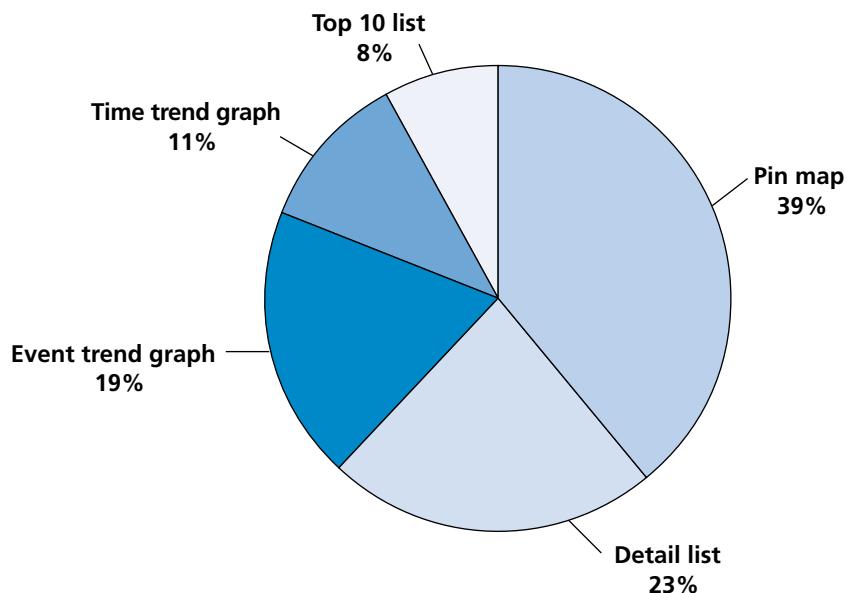
Just as the sites used the NPS system to varying degrees, they used it in a variety of ways and for a variety of purposes. Primary uses of the maps and reports include the activities described below.

**Forming block watches.** Veteran block watch organizers commented that

the NPS system was useful for getting people to attend block watch meetings. The block watch organizer in a neighborhood perceived as one of Hartford's safest commented that the maps and reports she showed to potential block watch members helped convince them that "there is real crime in their quiet neighborhood, so a block watch would be beneficial."

#### **Supporting existing block watches.**

In several neighborhoods, block watch organizers regularly produced maps and other reports and shared them with attendees at block watch meetings. Organizers consistently commented that the maps and reports served as conversation starters for the meetings and provided valuable information. In one neighborhood, support for the block watches was highly systemized because community organization staff, together with several block watch leaders, designed and distributed a biweekly "CrimeData Update" containing NPS reports to all block watch leaders.

**Exhibit 2. Percentage of reports generated, by report format**

Note:  $n = 2,444$ .

**Exhibit 3. Types of data appearing in Hartford NPS pin maps**

<b>Group</b>	<b>Major Category</b>	<b>Number of Runs</b>	<b>% of Total</b>	<b>Cumulative %</b>
Narcotics	Narcotics Related	411	43	43
Burglary	Part I Crime	135	14	57
Auto Theft	Part I Crime	89	9	66
Aggravated Assault	Part I Crime	83	9	75
Breach of Peace	Part II Crime	35	4	78
Other Part II Crimes	Part II Crime	17	2	80
Larceny	Part I Crime	17	2	82
Prostitution	Part II Crime	14	1	83
Driving Laws	Part II Crime	13	1	85
Simple Assault	Part II Crime	11	1	86
General Violent Crime	Part I Crime	11	1	87
General Property Crime	Part I Crime	11	1	88
Robbery	Part I Crime	10	1	89
Domestic Disputes	Part II Crime	8	1	90
Minor Crime Against Property	Part II Crime	7	1	91
Alarms	Part II Crime	7	1	92
Property Damage Accident	Noncrime	6	1	92
Personal Injury Accident	Noncrime	6	1	93
Motor Vehicle Laws	Noncrime	6	1	93
Liquor Laws	Minor Infraction	6	1	94
Traffic Details	Noncrime	5	1	95
Intoxication	Part II Crime	5	1	95
City Ordinances	Minor Infraction	5	1	96
Administrative	Noncrime	5	1	96
Weapons	Part II Crime	4	0	97
Sex Offenses	Part II Crime	3	0	97
Receiving Stolen Property	Part II Crime	3	0	97
Rape	Part I Crime	3	0	98
Gambling	Part II Crime	3	0	98
Fire Related	Noncrime	3	0	98
Drunk Driving	Part II Crime	3	0	98
Community Assistance	Noncrime	3	0	99
Animal Complaint	Noncrime	3	0	99
Homicide	Part I Crime	2	0	99
Forgery	Part II Crime	2	0	99
Offenses Against Family	Part II Crime	1	0	100
Noninvestigated Accident	Noncrime	1	0	100
Miscellaneous Noncrime	Noncrime	1	0	100
Minor Juvenile Cases	Part II Crime	1	0	100
Minor Part II Crime	Part II Crime	1	0	100
<b>Totals</b>		<b>960</b>	<b>100</b>	

**Supporting neighborhood-level organizations.** Members of citizen groups, neighborhood organizers, and other community organization staff used the NPS system to provide information to neighborhood-level organizations, much like a police crime analyst produces a set of maps for a police command staff meeting.

**Raising neighborhood awareness.** One community organization used the NPS system to disseminate crime information to residents throughout the neighborhood on National Night Out, an annual nationwide event in which residents participate in outdoor activities designed to mark progress in “taking back the night” from drug dealers and other criminals. Community organization staff used the NPS software to produce a two-page crime summary handout and delivered it to neighborhood block-party hosts.

**Distributing information to law enforcement officials.** Several community organizations used NPS maps and reports to facilitate communication with police and prosecution officials. CSOs, for example, regularly attended neighborhood problem-solving committee meetings and were typically called on to explain and interpret the NPS output. During some of these discussions between residents and police officials, residents commented on apparent inaccuracies in the police data, highlighting what one veteran community organizer believed was the most important use of the NPS system: improving the exchange of information between the community and the police and, in particular, ensuring that the police and the community have a common understanding of neighborhood problems. In other situations, the maps and reports were used at meetings with law enforcement

officials to substantiate requests for action in a hot spot or for additional police resources.

### Problem-solving and crime prevention applications

Targeted users and the people for whom maps and other reports were produced used the NPS system to accomplish a variety of specific or general objectives (see “Study Methodology”). One of the most common objectives related to the NPS system was identifying and quantifying crime hot spots, including specific addresses, streets, and sections of neighborhoods. In most cases, the quantifying component was significantly more important than the identifying component because community organizers and other persons active in a neighborhood were already aware of the most problematic locations in their area. What those individuals ordinarily could not do was quantify the seriousness of the hot spot in terms of citizen complaints, reported crimes, and arrests.

Quantifying the seriousness of a hot spot serves two key purposes for community groups and neighborhood residents. First, maps and reports confirm the organizers’ or residents’ perception of the problem. A number of targeted users indicated that the NPS output served as a “reality check” and let residents know the problems they saw were, in fact, real. Conversely, the NPS system was also used to suggest that a problem thought to be serious was, in fact, not that serious. The second and more important purpose for quantifying problems is that community groups, armed with hard evidence of a problem, can make a stronger case both to neighborhood residents to get involved and to the police and other city agencies to provide additional

resources to combat the problem. The leader of one Hartford community organization indicated that the primary value of the NPS system was using data to highlight the chronic problems in a neighborhood. He added that his organization was often “somewhat skittish about going after a problem if the only evidence is citizen perceptions.”

Although in most cases the NPS system was used to confirm and quantify known problems, targeted users noted that in some instances the system highlighted a previously unknown problem (at least to the community group or neighborhood problem-solving committee). This finding indicates what some in the Hartford Police Department hoped would be an outcome of this project—that citizens would become effective crime analysts.

Whether a property was a known or an unknown problem, community organizations used several techniques to target specific problem properties, including discussing the problem with the police CSO and other police officials, talking to the owners, and publicizing the problem in the media. In July 1998, the Connecticut Legislature provided an additional tool that the police, prosecutors, and community organizations could use to target specific properties. The Nuisance Abatement and Quality of Life Act gives the State, through the State’s Attorney’s office, the right to bring a civil action against any property owner whose property creates a public nuisance. The law defines a public nuisance as three or more arrests (on different dates) for a variety of crimes, including prostitution and the sale or possession of narcotics. The value of the NPS system in developing cases for the Nuisance Abatement Act is obvious, and several community organizations in Hartford used the system to identify properties covered under the Act. The organizations then notified

the Connecticut attorney general's office, attaching NPS output to their letters as supporting documentation.

A number of community organization leaders in Hartford said they believed a primary use of the NPS system would be to raise awareness throughout the neighborhoods regarding crime condi-

tions and encourage residents to focus on crime prevention. As one neighborhood organizer said, "The main use of the system is to bring the neighborhood together—getting [neighbors] to focus on an issue and mobilize around it." One community organization noted how frequently residents complained about drug activity but how infre-

quently they reported it to the police. As a result, the organization mounted a campaign (using NPS reports that showed how few citizen drug-related calls for service were made in the neighborhood) to encourage residents to contact the police. The number of calls for service increased substantially following this outreach effort

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### Study Methodology

The evaluation of the Hartford NPS system had three primary objectives:

- **Use level**—to determine system utilization, including measuring how often community organizations used the system and what types of maps and reports they created.
- **Use purpose**—to understand what the organizations did with the maps and reports they produced and what they hoped to accomplish with them.
- **Use effect**—to assess how use of the system affected perceptions of neighborhood safety and quality of life, community organization effectiveness, and police-community relations.

The first objective, measuring system use levels, is perhaps the most fundamental question in any evaluation of an information tool. Special purpose software, especially when not integrated with the user's workflow patterns, often falls into disuse after an initial period of use. The research team fully expected this at some of the installation sites. For the NPS evaluation, researchers relied primarily on tracking logs that recorded information about each map or report that users produced. The information included the date and time, the type of report produced, and the type of data used. The logs were site specific rather than user specific; that is, a user identification or login name was not required to use the system because

such a feature would pose an obstacle to system use.

To assess how the committees used the system and its effect on users, Abt Associates staff conducted informal interviews with and a formal survey of system users and attended neighborhood meetings at which crime issues were discussed. The survey focused on such issues as how users decided what types of maps and reports to produce, how often users referred to the maps and reports, how the maps and reports affected users' understanding of crime conditions and their feelings about neighborhood safety and quality of life, whether the maps and reports changed users' attitudes toward the police, how often users shared maps and reports with others, and how the maps and reports could have been made more useful.

Identifying NPS system users for the evaluation was not difficult because the software ran on stand-alone PCs and, for this project, only Abt Associates staff had the software installation disks.<sup>a</sup> Identifying users would be more difficult if one were examining an Internet-based police information sharing system. Although the general public in Hartford could walk in and use some of the computers with the NPS system,<sup>b</sup> Abt Associates did not publicize the existence of the system to persons not affiliated with either the CCP project or community organizations or citizen groups. The system was the subject of two articles in the main Hartford newspaper,<sup>c,d</sup>

and Abt Associates staff were informed of only a few instances when persons not affiliated with a community organization or citizen group used the NPS system. As such, this evaluation focused on how community organizations, not the general public, use crime information.

At each site, Abt Associates staff installed the software, provided training to one or more persons, made general suggestions on how the software might be used, and provided ongoing technical support to users both in person and over the telephone. However, because the researchers wanted to find out what organizations would do with the system, Abt Associates did not develop a plan for how organizations should use the system or help them integrate the system into their workflow. Thus, while Abt Associates was by no means a disinterested observer of the system, the researchers also were not the driving force behind its use.

a. However, NPS software is now available from NIJ.

b. Some NPS installation sites, such as public libraries, are open to the public; others are in community police field offices, which are generally locked unless the community police officer is in the office.

c. Rocha, Joseph, "Groups Get the Latest Crime Data," *The Hartford Courant*, October 28, 1998.

d. Mason, Johnny, "Residents Monitor Police Through Internet," *The Hartford Courant*, February 16, 1999: B4.

and a number of drug arrests were made as a result.

Finally, one neighborhood organizer used the NPS system to measure the effect of a major multiyear initiative with which his organization was involved. For several years, his organization worked with Federal, State, and city officials to secure funding and garner political support to demolish a public housing development in the neighborhood. One year after the demolition, the organizer used the NPS system to address concerns that the relocation of public housing residents to other parts of the neighborhood led to crime increases. The organizer said the NPS system enabled him to be factual and precise with the organization's supporters and city policymakers about changes in the neighborhood.

### Overall effects

How did targeted NPS users and consumers react to the NPS output? Did the maps and reports tell them anything they did not already know?

Although neighborhood activists were already aware of the most problematic properties and locations in their neighborhoods, results of the survey of regular NPS users indicated they learned much about their areas from the system. For example, 12 of 17 regular NPS users and consumers gained a much better understanding of crime conditions in their neighborhoods, and 13 of the 17 gained a much better understanding of where the crime hot spots were in their neighborhoods.

Of related interest was whether residents' perception of neighborhood safety and quality of life were affected after they viewed the NPS maps and reports; that is, did residents feel

differently about their neighborhoods when they had a comprehensive database of actual and suspected criminal activity than they did when their perception of crime was based only on reports in the media and what they heard from friends and neighbors? On this issue, regular NPS users expressed a variety of viewpoints. A majority of respondents indicated that the NPS maps and reports did not affect their view of their neighborhoods: 11 of 17 regular users indicated that the level of reported crime displayed in the NPS maps and reports was about what they expected, and 9 of 17 said the NPS did not change the extent to which they felt safe. Among respondents who said the NPS system changed their view of their neighborhood, some indicated the change was positive, while others said the change was negative. Some regular users saw less crime in the maps and reports than they expected, primarily because of how the media portrayed the crime situation. However, as one community leader put it, "Some people are in denial about crime—they don't want to think about [it]," and, consequently, the maps and reports may have made them feel that the situation was worse than they previously believed.

Improving police-community interaction was an important objective for both the Hartford Police Department and many of the community organizations involved in the project. All parties hoped that providing the community with the same data that the police had would create a common frame of reference for problem identification and solving. In the end, the project can perhaps claim partial success in improving police-community relations. When asked whether the NPS system changed their organization's relation-

ship with the police department, 6 of 17 targeted users who regularly used the system indicated that the system helped improve the relationship; the remaining 11 indicated that the system did not change the relationship. From the police perspective, CSOs working in neighborhoods where the NPS system was used most frequently were pleased to see the community have access to police data and appreciated the work that problem-solving committees and others did to identify problem areas and other crime problems.

Overall, among community organizations that regularly used the NPS system, 13 of 17 targeted users believed the NPS system was "an important source of information." The remaining four said the system was "useful once in a while." In general, community organizations appear to subscribe to the notion that "information is power." As the leader of one community organization put it, "Our effectiveness depends on our knowledge." Armed with information, community organizations will be more effective in educating neighborhood residents, interacting with the police and other city agencies, and carrying out other specific tasks and projects. In particular, several veteran community activists commented that "having the data" ensures that community groups "will have a seat at the table," meaning they can make a positive contribution to problem-solving efforts and that their voice should not be ignored by the city.

### Policy implications

Community policing requires the active participation of the community, both in terms of formal and informal partnerships with the police and in initiating its own crime prevention

strategies. One effective way to increase the community role in community policing is routine two-way information sharing. The NIJ-funded effort described in this Brief documents one approach by one police department to sharing computerized police information with the community. More police departments across the country are making crime statistics and maps available, primarily via police department Web sites, which offer a variety of data and features. Some offer static maps or statistics, while others allow users to formulate queries; some provide aggregate data, while others provide incident-level data.

The Hartford experience highlights the different ways community groups have analyzed various data. Although all regular users of the NPS system made extensive use of crime information, some placed the highest value on arrest information and others closely examined citizen calls-for-service information. The map display was generally the most popular report format but still accounted for less than half of the report runs, emphasizing that maps are only one way to look at police data. Appropriately sorted lists, graphs, and time period comparisons are also essential. In short, the Hartford experience suggests that police departments hoping to use their Web sites to provide data to the public in support of their community policing initiatives should also include extensive query capabilities and multiple report formats. New Web development tools, particularly map-based tools, allow for this versatility. In addition, data from agencies other than police departments (e.g., corrections agencies, property data, public health agencies, schools) could be included to enable users to examine possible links between these datasets and crime data.

However, it is important to note that what made the NPS system useful for community-based problem solving in Hartford was the extensive infrastructure that the city had in place to support the system, including neighborhood-based problem-solving committees, veteran community organizers, and a supportive environment in the city government and police department. Without such an infrastructure, it is probable that Hartford's NPS system not only would have been used less but would have been used for very different purposes. Specifically, instead of serving as a tool for organizing block watches, supporting neighborhood organizations, and supporting neighborhood-based problem solving, the system would have been used by individuals interested in knowing crime conditions in their area but less likely to share information from NPS with others or act on that information to effect neighborhood change. This is not to say that self-education about crime conditions is not worthwhile, but that the potential for neighborhood improvement is much greater when the primary system users are connected to organizations that operate in an environment conducive to neighborhood-based problem solving.

### Notes

1. Maltz, M.D., A. Gordon, and W. Friedman, *Mapping Crime in Its Community Setting: Event Geography Analysis*, New York: Springer-Verlag, 1991.
2. One approach to developing a multilayer information support system for community policing is described in Block, Carolyn Rebecca, "The Geo-Archive: An Information Foundation for Community Policing," *Crime Mapping and Crime Prevention*, ed. David Weisburd and Tom McEwen, Monsey, New York: Criminal Justice Press, 1998.
3. At the beginning of the project, a variety of options were considered for the software that community organizations would use to produce

maps and reports. One option was to develop a custom mapping application using a commercial mapping software package, such as MapInfo or ArcView. However, to avoid having to pay for commercial mapping packages for all the community organizations, the research team decided to develop a stand-alone executable program with mapping capabilities provided by a royalty-free third-party ActiveX software component.

4. The Federal Bureau of Investigation's Uniform Crime Reports list Part I crimes as homicide, rape, robbery, aggravated assault, larceny, burglary, and auto theft.

5. The data collection period ranged from 4 to 9 months, depending on when the NPS system was installed at the site.

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