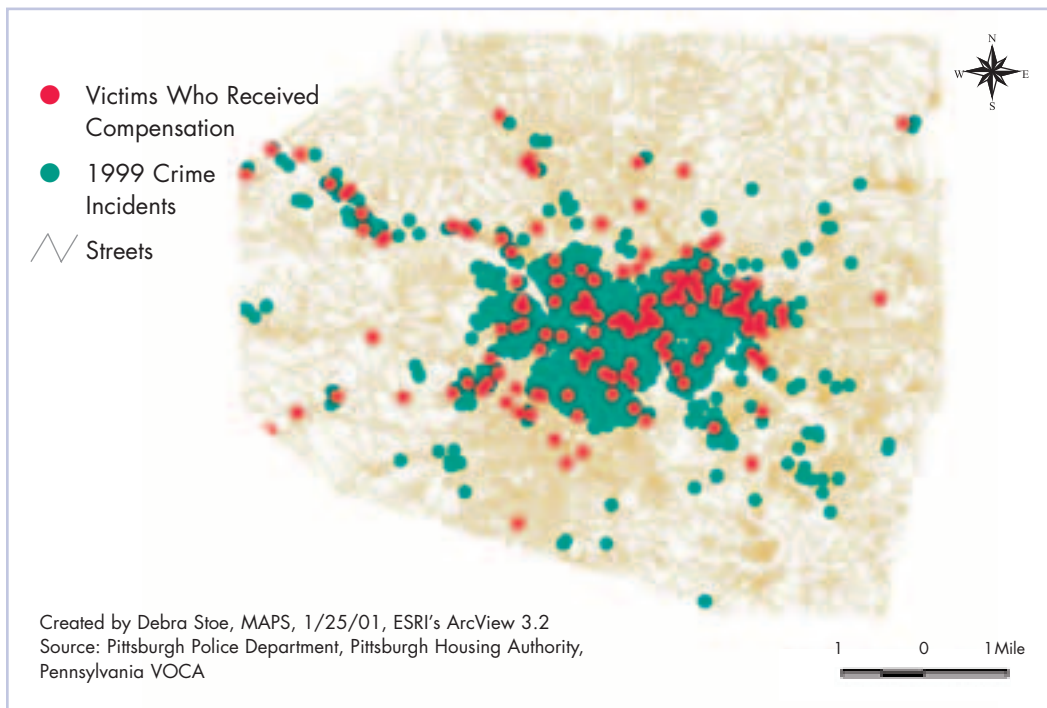


## How Administrators of VOCA Victim Compensation Can Use GIS

Administrators of VOCA crime victim compensation may be interested in several of the preceding exhibit maps. The map showing California subgrantees can be overlaid with data from crime victim compensation claims to examine whether subgrantees are generating expected claims. Using the map showing the changes in the population of Nevada, administrators can examine whether there is an increase in crime and a commensurate increase in claims in areas with increased populations. They can use this information to plan outreach activities.

The true benefits of GIS technology are realized when data are shared and integrated into an organization's daily operations. With access to crime data, administrators of VOCA crime victim compensation can quickly identify the locations of crime and crime victims. They can then more accurately predict the numbers and types of claims that will be generated from those locations. Exhibit 15 indicates the number of crime victims who received compensation in relation to the location of crimes in Pittsburgh, Pennsylvania, and shows that applications are not coming from the areas where crime occurs. Discrepancies in the data may occur, however, if victims use their resident addresses to apply for compensation rather than the addresses of where the crime occurred. For more information, administrators of crime victim compensation could overlay a map of subgrantees with a map of claims applications to

**Exhibit 15: 1999 Crime Incidents in Pittsburgh, PA, and Recipients of Victim Compensation**



see if subgrantees are generating a sufficient number of applications.

Administrators of crime victim compensation can use the information on VAWA grants as shown in the State of Georgia (exhibit 16) to identify counties where additional service providers may be available to make referrals.

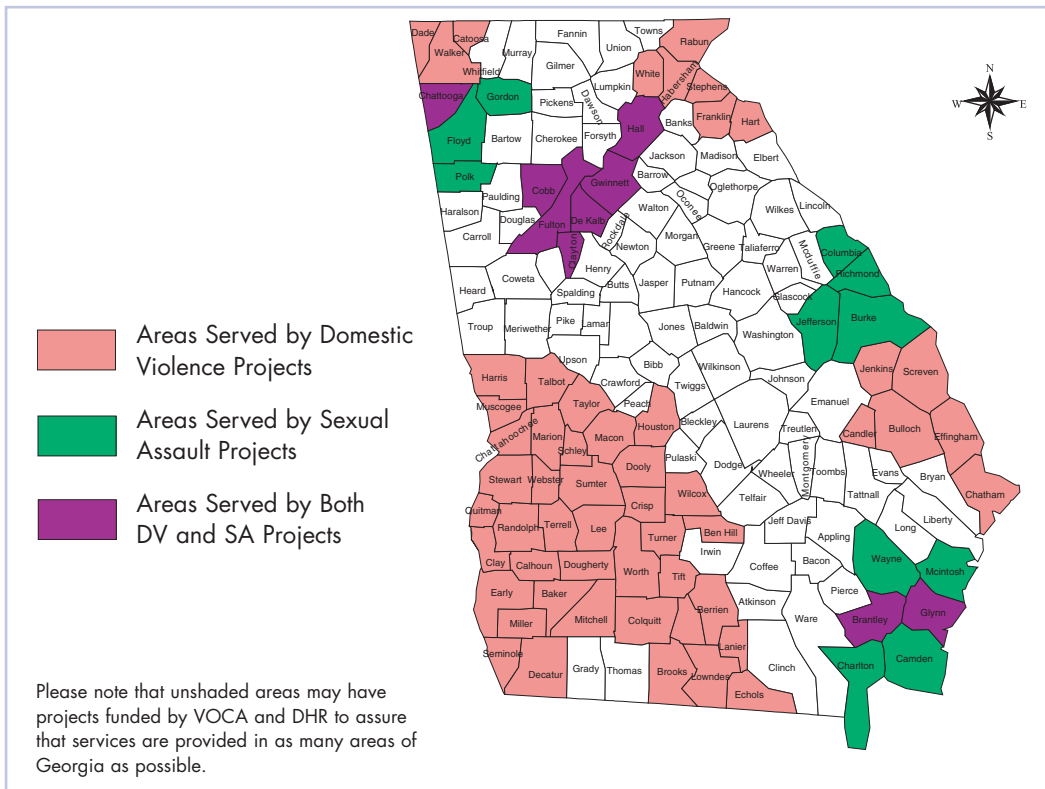
## Questions To Consider (Exhibit 15)

- ▶ What is the frequency of crime incidents and the frequency of victims receiving compensation?
- ▶ How does this information affect outreach planning?

## How Subgrantees, Crime Victim Assistance Coalitions, and Victim Service Providers Can Use Crime Mapping

Crime victim services subgrantees, coalitions, and providers can use GIS to study crime rates and resources in specific areas to improve allocation of resources, such as placing victim advocates in community centers, police departments, or courts. When gaps in services are

**Exhibit 16: Georgia Areas Served by VAWA Domestic Violence and Sexual Assault Service Projects**



identified, grant writers can incorporate this data into applications for federal, state, local, and foundation funding, thus documenting the scope of the problem for proposal reviewers.

GIS technology uses a process called buffering to create a barrier or zone around an area to be investigated or analyzed. For example, victims of domestic violence need many different services and are often dependent on public transportation in urban areas. In this instance, coalitions and service providers may want to buffer<sup>12</sup> the area surrounding bus routes to determine how accessible police departments, shelters, courts, and social services are to victims of domestic violence. Networking<sup>13</sup> is another process used to calculate optimum travel distances from all service locations or to determine optimum minimum distances between service locations.

Sexual assault coalitions can develop maps of assault locations, offering a broader look at where assaults occur or where victims reside. Child abuse coalitions can map the location of registered child molesters and overlay this information with data on the locations of schools and playgrounds to ensure supervision of offenders and protection of children (see exhibits 3 and 8).

State coalitions for crime victim assistance and providers of victim services can use GIS to identify underserved victims of crime, such as victims of physical assault, burglary, robbery, drunk driving, arson, and hate crime, and victims who are family members of homicide victims. This information can be shared among several groups working to plan for and serve these populations. This powerful tool allows the various coalitions to jointly assess and analyze crime on a larger scale by producing maps that can be shared and allow for joint strategic planning to develop a seamless delivery system for crime victims.

### **Mapping Victim Services**

When creating a mapping system for crime victim services, different types of data can be integrated and different types of maps can be created. This information can be broken down into four categories—victim services, criminal justice, health and social services, and generic.

Examples of victim services data include

- VOCA-funded subgrantee locations and catchment areas.
- Other victim services programs by location and catchment areas.
- Funding of services by multiple funding sources.
- Types of services available by location.
- Locations of claimants for crime victim compensation (awarded and denied).

- Dollar amounts of compensation claims awarded by geographic area.
- Number of victims served by compensation programs.
- Number of victims served by victim services organizations.

Examples of criminal justice data include

- Number of crime incidents.
- Types of crime incidents.
- Locations of police stations, substations, and patrols.
- Computer-aided dispatch calls.
- Firearms purchases.
- Locations of prisons and jails.
- Locations of criminal and juvenile courts.
- Open-air drug markets.
- Gang locations.
- Jurisdictional lines for state police, county sheriffs, tribal police, and municipal police.
- Number of protective or restraining orders.

Examples of health and social services data include

- Locations of public assistance agencies.
- Locations of public housing.
- Locations of hospitals and emergency rooms.
- Locations of mental health programs.
- Locations of youth shelters.

Examples of generic data include

- Census data.
- Neighborhood boundaries.
- State, county, and Indian Country boundaries.
- School locations.
- Business locations.

- Transportation routes.
- Park and recreation areas.

## Getting Started

It is easy to talk about what GIS will do, but getting started is another matter. Recognizing this, there are a couple of steps to consider. First, obtain training for staff who will introduce GIS technology to all levels of your agency. Coordinate presentations on what GIS is and what it can do.

Remember, thinking spatially about data is a learned skill. If you spend time teaching the basics of GIS and generate some enthusiasm about the concept, you can avoid a lot of confusion and reluctance down the road. Remember, GIS is a tool that enables an agency to make better use of the data it is already collecting.

Second, perform a needs assessment. A needs assessment is simply a methodological evaluation of an agency's existing needs, resources, and goals. It is a structured approach by which an organization is prompted to ask the right questions when considering implementing a GIS system. Some basic questions to consider are highlighted below.

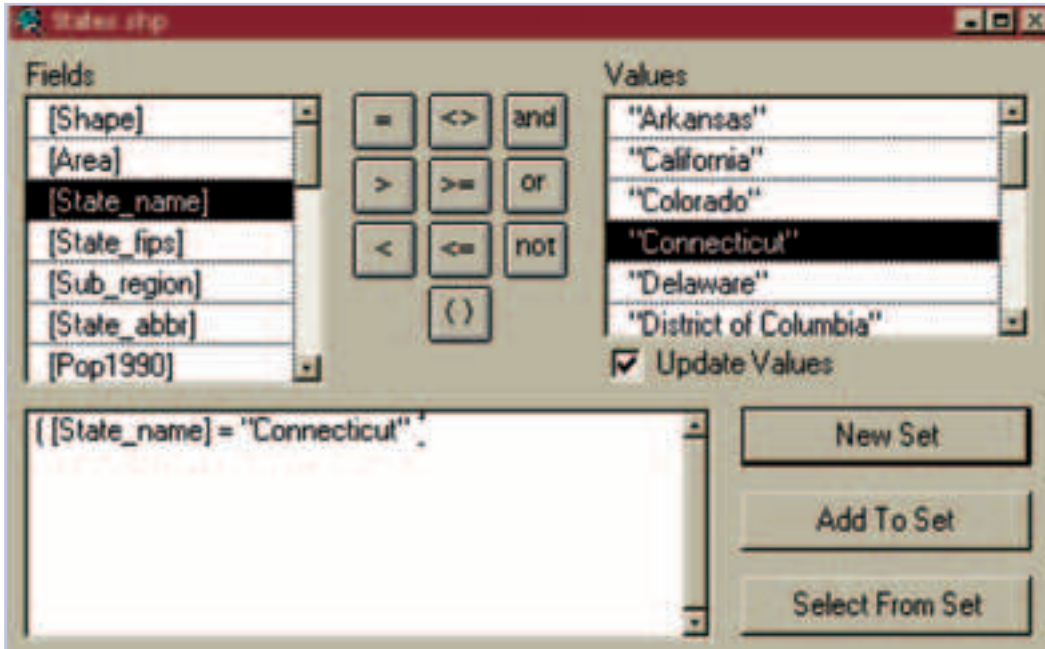
### What Are the Needs and Goals of Our Agency?

To build a GIS system to address the needs of your agency, you must first identify those needs. How will you use GIS? Will you use it to support management decisions, to evaluate existing initiatives and projects, and/or as a predictive modeling tool to identify the location of future subgrants? You can use a GIS system for all of these purposes and more, but knowing what you want to do before you begin will help you define the data needed to support the application.

### What Types of Queries Do We Want Supported by the GIS Application?

If you purchase an off-the-shelf GIS software package, the system likely will contain an ad hoc<sup>14</sup> type of querying capability. In other words, any data that you have loaded or integrated into the system can be accessed and queried. However, you may choose to customize the application to address your specific needs. For example, here are two types of query options: One is the ad hoc query used by ArcView 3.1 (exhibit 17) and the other is a screen shot of a customized query<sup>15</sup> built for Connecticut's New Haven Police Department (exhibit 18).

As you can see, a generic query builder is much more flexible but requires more technical expertise and knowledge about the data. A customized query builder requires less training but is more data restrictive. The user only has access to the data fields defined by the

**Exhibit 17: Ad Hoc View Used by ArcView 3.1**

drop-down menu. In the New Haven query menu, users can access several tables but are limited to the particulars of the crime, date, age, time, and day of the week. However, the tables contain much more information than what the menu is displaying (exhibit 18).

### **What Are Base Maps and Where Can We Get Them?**

Base maps are the foundation of a GIS. Typically, they comprise a street centerline and a geographic backdrop such as the census tract, ZIP Code, and/or county and state boundaries. Street centerlines of almost every city, state, or region can be purchased from vendors or downloaded free from the Internet by accessing the U.S. Census Bureau TIGER Files at [www.census.gov](http://www.census.gov). TIGER (Topologically Integrated Geographic Encoding and Referencing) is a nationwide, seamless, digital map. Most city information systems departments or planning departments also have centerline files they may be willing to share, especially with other government agencies or nonprofit organizations. These locally generated centerline files tend to be more accurate and detailed because they are created at the local level and are updated more often than the Census Bureau's.

### **What Additional Data Needs To Be Collected To Support the Application?**

In addition to using your own data, you may want to integrate additional data from other sources, such as census figures, law enforcement data, and transportation information. VOCA administrators may choose to collect and share information across state boundaries and between compensation and assistance programs to minimize repetition and duplicate

## Exhibit 18: Customized Query for the New Haven Police Department

The screenshot shows a web-based query interface titled "Incidents and Offenders". It features several input fields and checkboxes for filtering data. The "Select Source to Search" dropdown is set to "Crime Incidents" and "Status" is set to "All". The "Select Charge(s)" dropdown is open, showing "Arson - Related", "Assault - Other", and "Blackmail - Extortion". There are checkboxes for "Enter State(s)/Code(s)", "Select Day(s) of Week" (with "Fr", "Sa", and "Su" selected), "Enter Date Range" (with "Month: Jan", "Day: 1", "Year: 1999"), "Enter Time Range" (with "Hour: 02", "Min: 15", and "am/pm"), "Enter Age Range" (with "Start Age: 17" and "End Age: 17"), and "Enter a Title" (with "Assault"). A "Query" button is located at the bottom center of the form.

efforts. Some agencies will share information about a case or a person depending on how relevant it is to their agency and privacy concerns. Of course, any information shared should not be identifiable to a specific individual. The only instance in which this should occur would be if more than one agency is working with

crime victims and the information sharing is allowed by state law or by informed consent of the victims.<sup>16</sup>

### What Are Our Data Formats and How Can We Integrate Disparate Datasets?

Mapping systems can integrate various data formats.<sup>17</sup> However, the most common format is that of a database file, a file extension ending in *.dbf*. Fortunately, most spreadsheet tables can be converted easily to database files to make them ready for integration into a GIS. You can usually convert them by choosing "save as" under the file drop-down menu of your software, choosing a *.dbf* file extension, and following the steps prompted by the application.

### Privacy and Confidentiality

NIJ's MAPS, through a contract with the Institute for Law and Justice (ILJ), developed the guide *Privacy in the Information Age: Guidelines for Sharing Crime Maps and Spatial Data* to address privacy and data confidentiality when using GIS. The report is available for downloading from ILJ's Web site at [www.ilj.org](http://www.ilj.org), and hard copies are available from NIJ. The guidelines discuss options and requirements for addressing privacy, confidentiality, and data sharing and address concerns about the dissemination of geocoded data and the balance between the public's right to know and the victim's right to privacy. The report outlines some of the mechanisms and techniques used to protect privacy and provides Web resources for online mapping efforts.

Although creating a database warehouse for GIS would involve the input of a multitude of data, it would eliminate redundant data collection by agencies. A VOCA database could contain information on crime incidents, victims and offenders, locations of subgrantee recipients, compensation recipients, victim services programs, census data, and jurisdictional and state boundaries. Obviously, data from various organizations will exist in differing formats, but recent technologies make data conversions very easy.

### **Is Our Data Accurate and Timely?**

It is critical that you know your data before using it in GIS. For example, does your community have a Martin Luther King Boulevard? If so, how is it listed? MLK Blvd., Martin Luther King Street, MLK Jr., or another variation? All these options are correct, but their variation may create difficulties when you try to geocode your data. This is a problem many users face when they begin to use their data in a spatial environment. Most agencies have been collecting address-level data for years. Generally, the quality of this data has been left to the discretion and integrity of the person entering the data. The accuracy and standardization of this data will contribute to the overall ease or difficulty with which the data is integrated into your GIS. Another issue to consider is the timeliness of data. Street files may only need to be updated once a year, depending on the construction in the community, but records containing crime incidents, arrests, and claims and subgrant award data may need to be updated more frequently.

### **What Are Our Hardware and Software Requirements?**

Some of the above questions can be answered by staff members who are familiar with the data your agency collects. However, when it comes to hardware and software requirements, it is better to consult with information technology (IT) professionals who can help you define your GIS requirements based on your business needs and budget. IT professionals can help identify the technical needs involved with implementing a GIS. For example, a GIS can be implemented on the Internet, the Intranet, or as a stand-alone application loaded on an agency's personal computer (PC). IT professionals can tell you whether you should add more PCs to your department, install larger transmission lines for faster data transfers, or increase the RAM (random-access memory) and hardware space on your existing PCs. They can also evaluate your assets. Do you have an Intranet that can be used, firewalls in place for confidential data, or other types of security that can be accessed such as password-protected applications? Other issues to be addressed in a needs assessment include training for users, the experience of support personnel, system maintenance, and software licenses.

The GIS package purchased for your program will have greater use if it is compatible with that of other agencies' data. For efficiency's sake, purchase software that can easily export and import GIS files into the appropriate software packages. VOCA administrators and



subgrantees within the same state should purchase systems that use the same format for storing data to significantly reduce duplication of effort.

Building a GIS from scratch takes time, effort, and experience, but with today's off-the-shelf desktop mapping applications, developing and customizing a system to address specific organizational goals is relatively routine.

## **Training Resources Available**

### **Information and Training**

Three publicly funded agencies offer free training courses to help law enforcement personnel master crime-mapping technology. VOCA administrators can also take these courses and adapt the information to victim services planning.

The Crime Mapping and Analysis Program (CMAP) at the University of Denver in Colorado offers a 2-week introductory course and courses in more advanced applications. For course schedules and other information, contact Noah Fritz by phone at 1-800-416-8086, by fax at 303-871-2500, or by e-mail at [nfritz@du.edu](mailto:nfritz@du.edu). The CMAP Web site address is [www.nlectc.org/cmap](http://www.nlectc.org/cmap).

The Carolinas Institute for Community Policing (CICP) offers courses that emphasize crime mapping technology as an element of community policing. The courses are offered in six cities throughout North and South Carolina in both technical and nontechnical formats. The technical portion is appropriate for crime analysts; the nontechnical portion is appropriate for officers, administrators, and community members. For course schedules and other information, contact Linda Waddell at CICP, Charlotte-Mecklenburg, North Carolina, Police Department, by phone at 704-336-4899, by fax at 704-336-7799, or by e-mail at [pdlw@mail.charmeck.nc.us](mailto:pdlw@mail.charmeck.nc.us).

Mapping and Analysis for Public Safety (MAPS), in collaboration with the Office of Community Oriented Policing Services, offers training in crime mapping through Regional Community Policing Institutes. The center offers four courses that are appropriate for police officers, crime analysts, community members, and researchers.

Tuition is free and training is held at Regional Community Policing Institutes throughout the country. The courses can be downloaded from the MAPS Web site. To learn about how to become a trainer, how to host training classes, or how to take the training, contact Richard Lumb, CICP Director, Charlotte-Mecklenburg Police Department, by phone at 704-336-2162, by fax at 704-336-7799, or by e-mail at [rlumb@cmpd.ci.charlotte.nc.us](mailto:rlumb@cmpd.ci.charlotte.nc.us).

The courses include

**Crime Mapping for Community Policing and Problem Solving** (4 hours): geared toward officers, community members, and others who are interested in the basics of crime mapping.

**Mapping for Managers** (4 hours): geared toward administrators and managers who want to know about crime mapping, what to ask for, and what to expect.

**What Is Crime Mapping?** (8 hours): geared toward analysts, officers, community members, and others who want a more in-depth look at crime mapping.

**Integrating GIS Into an Organization** (8 hours): geared toward analysts, officers, and others who are playing a role in implementing crime mapping in their agency.

## Other Resources

Other resources are available to help administrators of crime victim services in their efforts to use crime-mapping technology. The following programs are available to provide onsite technical assistance on GIS to VOCA administrators.

### Technical Assistance

The Justice Information Systems Technical Assistance Program provided through SEARCH offers technical assistance to state and local justice agencies in how to acquire, develop, manage, improve, and integrate their automated information systems. SEARCH works with individual justice agencies (such as a police department implementing a new records management system or a court acquiring a new case management system) and with multidisciplinary groups of justice agencies to help them plan for and integrate their information systems at state, local, and regional levels. For more than 20 years, SEARCH programs have provided both onsite and in-house, no-cost technical assistance to justice agencies throughout the country. For more information, go to [www.search.org/tech-assistance/default.asp](http://www.search.org/tech-assistance/default.asp).

### Criminal Justice Statistical Analysis Centers

The Justice Research and Statistics Association (JRSA) is a nonprofit organization created in 1974 to promote the use of research in policy decisions and to facilitate the exchange of criminal justice information among states. JRSA's 50 constituent Statistical Analysis Centers are located in almost every state and territory, where they conduct objective analyses to meet planning needs and address statewide policy issues. The association also maintains a clearinghouse of state criminal justice research and programs, conducts multistate research, provides training and technical assistance, and convenes national conferences.

## **University Statistics and Research Center**

An alternative resource for consultation could be a statistics and research center at a nearby college or university. Some examples are undergraduate or graduate schools of public administration, social work, criminal justice science, and public health.

## **University Statistics and Research Internships**

Agencies that are interested in using crime mapping may want to recruit interns from the local university or college to help them in administrative and strategic planning efforts.

## **Funding GIS Development and Technical Assistance**

### **VOCA**

A major OVC responsibility is to administer the Crime Victims Fund, which is derived from fines and penalties paid by federal criminal offenders. Nearly 90 percent of the money collected each year is distributed to states to help fund their victim assistance and compensation programs. These programs help victims and their families.

Through the State Compensation and Assistance Division, OVC administers two formula/block grant programs: Victim Assistance and Victim Compensation. During the past decade, these two programs have improved the accessibility and quality of services to crime victims nationwide.

Approximately 10,000 community-based organizations across the Nation provide services to crime victims. VOCA victim assistance funds, awarded to states each year, support 4,000 such organizations. Priority must be given to victims of sexual assault, domestic violence, and child abuse. In addition, state grantees must give priority to underserved victims of violent crime, such as survivors of homicide victims and victims of assault, robbery, burglary, hate crimes, drunk drivers, fraud, and elder abuse, among others.

All states and territories receive an annual VOCA victim assistance grant. Each state, the District of Columbia, and the territories of the U.S. Virgin Islands and Puerto Rico receive a base amount of \$500,000. The territories of American Samoa, Guam, and the Northern Mariana Islands each receive a base amount of \$200,000. Additional funds are distributed based on population.

In addition, all 50 states, the District of Columbia, the U.S. Virgin Islands, Puerto Rico, and Guam have established victim compensation programs. Each year, OVC offers eligible programs a grant equal to 40 to 60 percent of the amount the program has awarded to crime victims from state revenue sources in the previous year. Every compensation program

reimburses victims for crime-related expenses, such as medical costs, mental health counseling, funeral and burial costs, and lost wages or loss of support when other financial resources such as private insurance or restitution are not available. The program must be operated by a state or territory and offer compensation to victims and survivors of victims of compensable crimes, including crimes involving terrorism, drunk driving, and domestic violence.

Each state VOCA grantee may retain up to 5 percent of each year's grant to administer VOCA victim assistance and compensation grant programs. State administrative dollars may be used to expand, enhance, and/or improve the state's previous level of effort in administering the VOCA grant programs at the state level and to support activities and costs that affect the delivery and quality of services to crime victims throughout the state. In this context, VOCA administrative funds may be used to support GIS efforts, such as purchasing software, attending relevant training and technical assistance meetings, and paying salaries and benefits for staff and consultants' fees to administer a GIS project.

### **Byrne Funds**

The Bureau of Justice Assistance has one discretionary program, the Byrne Discretionary Grant Program. Under this program, technical assistance and training grants can be awarded to states, local units of government, Indian tribes and tribal organizations, individuals, educational institutions, private nonprofit organizations, and private commercial organizations. Some discretionary awards are competitive, with a limited amount of funds made available to a number of potential recipients. Byrne discretionary funds are awarded directly to criminal justice agencies and private nonprofit organizations to support a comprehensive range of developmental and demonstration projects, technical assistance and training, and public awareness activities and publications.

### **STOP Violence Against Women Formula Grants**

The STOP (Services\*Training\*Officers\*Prosecutors) Violence Against Women Formula Grants Program promotes the development and implementation of effective, victim-centered law enforcement, prosecution, and court strategies to address violent crimes against women. The program is dedicated to the development and enhancement of victim services that involve victims of domestic violence, sexual assault, and stalking.

Technology initiatives are encouraged under the STOP formula program and may include "Developing, installing, or expanding data collection and communication systems, including computerized systems, linking police, prosecution, and the courts or for the purpose of identifying and tracking arrests, protection orders, violations of protection orders, prosecutions, and convictions for violent crimes against women, including the crimes of sexual assault and domestic violence."<sup>18</sup>

# NOTES

1. A collection of data organized specifically for rapid search and retrieval.
2. A spatial or geographic identifier refers to a location that can be defined geographically (e.g., street addresses, block groups, neighborhoods, police districts, state or county boundaries).
3. A census tract is a boundary created by the U.S. Census Bureau that divides counties into subdivisions that usually range in population from 2,500 to 8,000.
4. A polygon is any shape that is totally enclosed (e.g., circle, square) or any irregular shape that can be defined, such as census tracts, state or county boundaries, and school districts.
5. When a database is linked to the graphics software, integrated disparate datasets are referred to as layers of information because they are displayed in map form.
6. Features are items such as schools, roads, bus stops, churches, or service providers referenced in a query.
7. A street centerline refers to the GIS street file with street name and block ranges attached in a database.
8. Cartography is the art or science of making maps.
9. For more information about crime mapping, visit the MAPS Web site at [www.ojp.usdoj.gov/nij/maps](http://www.ojp.usdoj.gov/nij/maps).
10. Spatially contextualizing the data refers to layering information in an attempt to reveal new or previously unrecognized relationships that exist between disparate datasets, such as crime and public housing.

11. The Community Policing Beat Book software was developed under a cooperative agreement between NIJ and ESRI. The application, user manual, and relevant documents can be downloaded at [www.ojp.usdoj.gov/cmrc/tools/welcome.html](http://www.ojp.usdoj.gov/cmrc/tools/welcome.html).
12. Although the general walking distance to a bus route is approximately  $\frac{1}{4}$  mile, this distance depends on various factors, such as age, neighborhood conditions, and accessibility for people with disabilities.
13. Networking takes into consideration one-way streets, speed limits, and traffic congestion. This technique is used by MapQuest.
14. Ad hoc is a user-defined query that allows you to select specific data from all of the data integrated into the GIS.
15. A customized query is one that is predefined based on user needs; the user does not have access to all data.
16. Data sharing information can be found at [www.search.org/integration/pdf/ExchangePoints.pdf](http://www.search.org/integration/pdf/ExchangePoints.pdf).
17. Examples of different data formats that a GIS can integrate include text files generated from word processors such as WordPerfect, Microsoft Word, and WordPad; spreadsheet files generated from software such as Excel, Quattro Pro, and Lotus; and .dbf files such as Access, Paradox, and dBASE V.
18. Violence Against Women Office, *STOP Violence Against Women Formula Grant Program Fiscal Year 2002 Application Guidelines*, U.S. Department of Justice, Violence Against Women Office, 2001.

# BIBLIOGRAPHY

Crime Mapping and Data-Driven Management Task Force. 1999. *Mapping Out Crime: Providing 21st Century Tools for Safe Communities*. Washington, DC: U.S. Department of Justice, National Partnership for Reinventing Government.

Green, S.W. 1990. "Approaching Archaeological Space." In *Interpreting Space: GIS and Archaeology*, edited by Kathleen M.S. Allen, Stanton W. Green, and Ezra B.W. Zubrow, 3–8. New York, NY: Taylor & Francis.

Harries, Keith D. 1999. *Mapping Crime: Principle and Practice*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, National Institute of Justice, Crime Mapping Research Center.

Kelling, George L. 1997. *Fixing Broken Windows, Restoring Order and Reducing Crime in Our Communities*, 19. New York, NY: Simon & Schuster.

La Vigne, Nancy, and Julie Wartell. 1998. *Crime Mapping Case Studies: Successes in the Field* (Volume 1). Crime Mapping Research Center, Washington, DC: Police Executive Research Forum.

La Vigne, Nancy, and Julie Wartell. 2000. *Crime Mapping Case Studies: Successes in the Field* (Volume 2). Crime Mapping Research Center, Washington, DC: Police Executive Research Forum.

Mamalian, Cynthia, and Nancy La Vigne. 1999. *The Use of Computerized Crime Mapping by Law Enforcement: Survey Results*. Research Preview. Washington, DC: U.S. Department of Justice, Office of Justice Programs, National Institute of Justice.

Robinson, Arthur H., Joel L. Morrison, Phillip C. Muehrcke, A. Jon Kimerling, and Stephen C. Guptill. 1995. *Elements of Cartography*. Sixth Edition. New York, NY: John Wiley & Sons, Inc.

Weisburd, David, and Tom McEwen. 1997. "Crime Mapping Crime Prevention." In *Crime Prevention Studies* (Volume 8). Monsey, NY: Criminal Justice Press.



## ADDITIONAL RESOURCES

Antenucci, John, Kay Brown, Peter Crosswell, Michael Kevany, with Hugh Archer. 1991. *Geographic Information Systems: A Guide to the Technology*. New York, NY: Van Nostrand Reinhold.

Block, Carolyn and Lynn Green. 1994. *The Geoarchive Handbook: A Guide for Developing a Geographic Database as an Information Foundation for Community Policing*. Chicago, IL: Illinois Criminal Justice Information Authority.

Block, Carolyn, and Margaret Dabdoub. 1993. *Workshop on Crime Analysis Through Computer Mapping Proceedings: 1993*. Chicago, IL: Illinois Criminal Justice Information Authority.

Block, Carolyn, and Louise Miller. 1983. *Manual for the Pattern Description of Time Series, Part 1: Guide to Pattern Description*. Chicago, IL: Illinois Criminal Justice Information Authority.

Boggs, Sarah L. 1965. "Urban Crime Patterns." *American Sociological Review* 30:899–908.

Brantingham, Paul J., and Patricia L. Brantingham. 1981. *Environmental Criminology*. Prospect Heights, IL: Waveland Press.

Brantingham, Paul J., and Patricia L. Brantingham. 1984. *Patterns in Crime*. New York, NY: Macmillan.

Clarke, Keith C. 1997. *Getting Started With Geographic Information Systems*. Upper Saddle River, NJ: Prentice Hall.

Clarke, Keith C. 1995. *Analytical and Computer Cartography*. Englewood Cliffs, NJ: Prentice Hall.

- Dent, Borden D. 1990. *Cartography: Thematic Map Design*. Dubuque, IA: William C. Brown.
- Eck, John, and David Weisburd. 1995. *Crime and Place*. Monsey, NY: Willow Tree Press.
- Evans, David J., and David T. Herbert. 1989. *The Geography of Crime*. London, England: Rutledge.
- Fotheringham, Stewart, and Peter Rogerson. 1995. *Spatial Analysis and GIS*. Bristol, PA: Taylor & Francis.
- Haining, Robert. 1990. *Spatial Data Analysis in the Social and Environmental Sciences*. New York, NY: Cambridge University Press.
- Harries, Keith D. 1974. *Geography of Crime and Justice*. New York, NY: McGraw-Hill.
- MacEachren, Alan 1995. *How Maps Work: Representation, Visualization, and Design*. New York: Guilford Press
- Monmonier, Mark. 1991. *How to Lie With Maps*. Chicago, IL: University of Chicago Press.
- Monmonier, Mark. 1993. *Mapping It Out*. Chicago, IL: University of Chicago Press.
- Onsrud, Harlan J., and Gerard Rushton. 1995. *Sharing Geographic Information*. New Brunswick, NJ: Center for Urban Policy Research.
- Rengert, George F., and John Wasilchick. 1985. *Suburban Burglary: A Time and Place for Everything*. Springfield, IL: Charles C. Thomas.
- Simpson, Jeff L. 1989. *Applied Community Research Monograph C3: Visual Display of Statistics*. Alexandria, VA: American Chamber of Commerce Researchers Association.
- Tufte, Edward R. 1983. *The Visual Display of Quantitative Information*. Cheshire, CT: Graphics Press.
- Tufte, Edward R. 1990. *Envisioning Information*. Cheshire, CT: Graphics Press.
- Tufte, Edward R. 1997. *Visual Explanations*. Cheshire, CT: Graphics Press.
- Weisburd, David, and Tom McEwen. 1997. *Crime Mapping & Crime Prevention*. Monsey, NY: Willow Tree Press.

# GLOSSARY

**Ad hoc query:** A query fashioned from all available data integrated into the GIS.

**Cartography:** The art or science of making maps.

**Census tract:** A boundary created by the U.S. Census Bureau that divides counties into populations ranging from 2,500 to 8,000.

**Customized query:** A predefined query based on user needs, used with systems in which the user does not have access to all data.

**Database:** A collection of data organized especially for rapid search and retrieval.

**Dataset:** When a database is linked to the graphics software, integrated disparate datasets are referred to as layers of information because they are displayed in map form.

**Polygon:** Any shape that is totally enclosed (e.g., circle, square) or any irregular shape that can be defined, such as census tracts, state or county boundaries, and school districts.

**Spatial data:** Data that are identified with a geographical location, such as x-y coordinates in latitude and longitude, state plane coordinates, street addresses, census tracts, counties, and ZIP Codes.

**Spatial or geographic identifier:** A location that can be defined geographically (e.g., street addresses, block groups, neighborhoods, police districts, state or county boundaries).

**Street centerline:** Lines on a map that represent roads; the yellow dashes that separate a two-way street.



# FOR FURTHER INFORMATION

## **Office for Victims of Crime**

U.S. Department of Justice  
810 Seventh Street NW.  
Eighth Floor  
Washington, DC 20531  
202-307-5983  
Fax: 202-514-6383  
Web site: [www.ojp.usdoj.gov/ovc](http://www.ojp.usdoj.gov/ovc)

## **Mapping and Analysis for Public Safety**

National Institute of Justice  
U.S. Department of Justice  
810 Seventh Street NW.  
Seventh Floor  
Washington, DC 20531  
202-514-3431  
Web site: [www.ojp.usdoj.gov/nij/maps](http://www.ojp.usdoj.gov/nij/maps)

## **Web Links**

Bureau of Justice Statistics  
[www.ojp.usdoj.gov/bjs](http://www.ojp.usdoj.gov/bjs)

Center for International Science Information Network  
[www.ciesin.org](http://www.ciesin.org)

CyberInstitute short course on GIS  
[www.ngdc.noaa.gov/seg/tools/gis](http://www.ngdc.noaa.gov/seg/tools/gis)

Digital chart of the world  
[www.maproom.psu.edu/dcw](http://www.maproom.psu.edu/dcw)

Digital maps  
<http://magic.lib.uconn.edu>

EROS Data Center, the clearinghouse for U.S. Geological Survey digital data  
<http://edc.usgs.gov>

Federal Bureau of Investigation  
[www.fbi.gov](http://www.fbi.gov)

Federal Geographic Data Committee  
[www.fgdc.gov](http://www.fgdc.gov)

Federal Justice Statistics Resource Center  
[fjsrc.urban.org](http://fjsrc.urban.org)

Geophysical data  
[www.ngdc.noaa.gov/ngdc.html](http://www.ngdc.noaa.gov/ngdc.html)

GIS datasets put together by ESRI for the production of live maps  
[www.esri.com/data/mapdata/index.html](http://www.esri.com/data/mapdata/index.html)

GIS dictionary  
[www.geo.ed.ac.uk/agidict/welcome.html](http://www.geo.ed.ac.uk/agidict/welcome.html)

GIS education and training  
<http://campus.esri.com>

GIS FAQs  
[www.census.gov/geo/www/faq-index.html](http://www.census.gov/geo/www/faq-index.html)

GIS Guide for the Neophyte  
[http://ice.ucdavis.edu/local/gis/gis\\_primer.html](http://ice.ucdavis.edu/local/gis/gis_primer.html)

GIS links: Free datasets, standards, U.S. Geological Survey sites, U.S. Census Bureau, etc.  
[www.pipeline.com/~rking/gis.htm](http://www.pipeline.com/~rking/gis.htm)

GIS Support Center

[www.state.oh.us/das/das/gis/](http://www.state.oh.us/das/das/gis/)

Global Resource Information Database

[www.grid.unep.ch](http://www.grid.unep.ch)

Map FAQs, products and support data

[www.mapfacts.com](http://www.mapfacts.com)

MARIS spatial data

[www.maris.state.ms.us](http://www.maris.state.ms.us)

Massachusetts GIS site and geographic databases

[www.magnet.state.ma.us/mgis/massgis.htm](http://www.magnet.state.ma.us/mgis/massgis.htm)

National Archive of Criminal Justice Data

[www.icpsr.umich.edu/nacjd](http://www.icpsr.umich.edu/nacjd)

National Center for Victims of Crime

[www.ncvc.org](http://www.ncvc.org)

National Organization for Victim Assistance

[www.try-nova.org](http://www.try-nova.org)

Natural Resources Research Information Pages

[www4.ncsu.edu/~leung/nrrips.html](http://www4.ncsu.edu/~leung/nrrips.html)

Pennsylvania State University, access to spatial data of Pennsylvania

[www.pasda.psu.edu](http://www.pasda.psu.edu)

South Carolina Department of Natural Resources GIS Data Clearinghouse Home Page

[www.dnr.state.sc.us/gisdata/index.html](http://www.dnr.state.sc.us/gisdata/index.html)

Thematic maps

[www.oseda.missouri.edu](http://www.oseda.missouri.edu)

University of California at Berkeley online map collection and links to other data and map sources

<http://library.berkeley.edu/EART>

University of Edinburgh, Scotland, GIS reference database and an elevation data catalog  
[www.geo.ed.ac.uk/home/gishome.html](http://www.geo.ed.ac.uk/home/gishome.html)

University of New Mexico Earth Data Analysis Center  
<http://edac.unm.edu>

U.S. Census Bureau  
[www.census.gov](http://www.census.gov)

U.S. Geological Survey digital map data  
<http://geology.wr.usgs.gov/wgmt/digdata.html>

U.S. Geological Survey on transferring data between systems without any loss  
<http://mcmcweb.er.usgs.gov/sdts/whatsdts.html>

Victim Assistance Online  
[www.vaonline.org](http://www.vaonline.org)

### **General Web Resources for Training Seminars and Conferences\***

[www.urisa.org/meetings.htm](http://www.urisa.org/meetings.htm)

<http://msdis.missouri.edu>

[http://magicweb.kgs.ukans.edu/magic/magic\\_net.html](http://magicweb.kgs.ukans.edu/magic/magic_net.html)

[www.nsgic.org](http://www.nsgic.org)

[www.mapinfo.com](http://www.mapinfo.com)

[www.esri.com/events](http://www.esri.com/events)

[www.ojp.usdoj.gov/cmrc/training/welcome.html](http://www.ojp.usdoj.gov/cmrc/training/welcome.html)

[www.nlectc.org/nlectcrm/cmaptrain.html](http://www.nlectc.org/nlectcrm/cmaptrain.html)

[www.nijpcs.org/upcoming.htm](http://www.nijpcs.org/upcoming.htm)

[www.usdoj.gov/cops/gpa/tta/default.htm](http://www.usdoj.gov/cops/gpa/tta/default.htm)

<http://giscenter.isu.edu/training/training.htm>

[www.alphagroupcenter.com](http://www.alphagroupcenter.com)

\*As listed in *Crime Mapping News*, spring 2000, volume 2, issue 2.





---

## **Using Geographic Information Systems To Map Crime Victim Services**

For copies of this monograph and/or additional information,  
please contact

OVC Resource Center  
P.O. Box 6000  
Rockville, MD 20849-6000  
Telephone: 1-800-627-6872 or 301-519-5500  
(TTY 1-877-712-9279)

Or order OVC publications online at <http://puborder.ncjrs.org>.  
E-mail questions to [askovc@ojp.usdoj.gov](mailto:askovc@ojp.usdoj.gov).  
Send your feedback on this service to [tellncjrs@ncjrs.org](mailto:tellncjrs@ncjrs.org).

Refer to publication number NCJ 191877.

For information on training and technical  
assistance available from OVC, please contact

OVC Training and Technical Assistance Center  
10530 Rosehaven Street, Suite 400  
Fairfax, VA 22030  
Telephone: 1-866-OVC-TTAC (1-866-682-8822)  
(TTY 1-866-682-8880)