

Appendix K

Police Department



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1 Police Department

1.1 Agency Overview

The mission of the Baltimore County Police Department is to enforce the laws and ordinances of the state and county, safeguard life and property, prevent and detect crime, preserve the peace, and protect the rights of all citizens. The Department manages 2,439 personnel, 27 K-9 dogs, 828 vehicles, and 31 facilities. The Department role is to police 3,021 miles of roadway, 785,600 citizens, and 612 square miles. From June through December 2005 there were 16,746 arrests made and 302,238 calls for service. The Baltimore County Police Department is divided into three bureaus. Those bureaus are the Operations Bureau, the Administrative and Technical Services Bureau, and the Community Resources Bureau. Each Bureau is comprised of multiple divisions that serve Baltimore County in different capacities.

Operations Bureau

The Operations Bureau is broken into four divisions. Those divisions are the Western Patrol Division, the Eastern Patrol Division, the Criminal Investigations Division, and the Support Operations Division. The Patrol Divisions main objectives are to provide comprehensive police services that prevent and reduce crime in their designated areas. The Criminal Investigations Division is charged with investigating crimes that have already occurred and is comprised of the Persons Crimes, Property Crimes, and Vice/Narcotics Sections. The Support Operations Division manages the Special Services Section.

Administrative and Technical Services Bureau

The objective of the Administrative and Technical Services Bureau is to establish appropriate response protocols for management of critical incidents resulting from any hazard, terrorism, natural disaster, or man-made disaster. This bureau is broken into the following divisions: Administrative Services Division, Forensics, Records, Employment and Training Division, and Information Technology Division. The Administrative Services Division manages the Crime Analysis Section, Budget Management Section, Personnel Section, Materials and Facilities Section, and the Planning and Research Section. The Forensic, Records, Employment, and Training Division include the Forensic Services Section, the Records Section, Employment Section, and Training Section. The Information Technology Division provides IT support to the department and includes the following teams: Programming and Database Management, PC Network Support, and Mobile Projects.

Community Resources Bureau

The Community Resources Bureau has one division, the Community Resources Division. The Community Resources Division manages the Youth and Community Section and the School Resources Section.



The following Police Department programs were included in this study:

- Homeland Security
- Command and Control
- Traffic Accident Analysis
- Public Safety Indicators
- Collaborative Supervision and Focused Enforcement (CSAFE)
- Tactical Crime Analysis
- Scanning and Forecasting
- Traffic Stop Data Collection
- Database Management

1.2 Agency Study Participants

Agency personnel contributed to the study by completing the short form online survey, participating in interviews, and providing miscellaneous data to support information provided throughout the report.

Thirteen people completed the online short form survey, which was used to determine each person’s role within the department and determine if these individuals were using GIS to support their activities. Each of the short form responses has been included in the appendix of this document. The following personnel completed the online short form survey:

| Short Form Respondent |
|------------------------------|
| Chad Cameron |
| Gennet Medhin |
| Kim Lankford |
| Carl Koprowicz |
| Mark Demski |
| Mike Leedy |
| Nina Skinner |
| Philip Canter |
| Sam, Helms |
| Sgt. John Young |
| Terry Tanguilig |
| Tricia Amburgey |
| Wenjuan Lu |

Table 1 - Short Form Respondents



Twelve individuals participated in interviews conducted over several weeks in November 2006. These individuals are:

| Interviewee |
|--------------------|
| Phil Canter |
| Carl Koprowicz |
| Chad Cameron |
| Gennet Medhin |
| Mark Demski |
| Samuel Helms |
| Terry Tanguig |
| Wenjuan Lu |
| Tricia Amburgey |
| Kimberly Lankford |
| Mike Leedy |
| Nina Skinner |

Table 2 – Interviewees



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2 Cost/Benefit Information

This section outlines the annual costs and benefits that are associated with GIS use and maintenance within the Police Department. The total benefits and costs have been summarized in the table below, which are discussed in further detail in the remainder of this section.

| Summary – Total Annual GIS Benefits | |
|--|---------------------|
| Time Benefits: | \$278,797.70 |
| Other Benefits: | \$0 |
| Total Annual Benefits: | \$278,797.70 |
| Summary - Total Annual GIS Costs | |
| Total Annual Costs: | \$101,584.81 |
| Summary - Total GIS Cost/Benefit | |
| Total GIS Cost/Benefit: | \$177,212.89 |

Table 3 – Annual Agency Cost and Benefit Summary

This table only includes benefits that are associated with capital returns and does not consist of other benefits such as more accurate information, faster response times, etc. A detailed review of all qualitative benefits realized by GIS users will be documented and analyzed in the Enterprise volume of the report.

2.1 Annual Agency Cost

The Police Department contributes a relatively large amount to the cost of supporting the Enterprise GIS for Baltimore County. This agency maintains many GIS datasets, little operational costs, and carries approximately one half of a fulltime employee equivalent of GIS staff performing database maintenance activities. The total annual agency cost to support all of these elements is \$101,584.81.

| |
|--|
| Total Agency GIS Cost: \$101,584.81 |
|--|

Details of each of the cost issues are discussed in the sections below.



2.1.1 Annual Operational Costs

There are two types of operational costs associated with supporting GIS activities in the agency: training costs and supply costs.

The Police Department assists the education of personnel within the agency by offering internal training. These costs for preparing for this training are outlined in the table below:

| Type of Training | Annual Cost |
|-----------------------------|-------------------|
| Training Class | \$1,600.00 |
| Total Training Costs | \$1,600.00 |

Table 4 - GIS Training Costs

The following costs represent the Police Department GIS hardware and supply costs related to the use of GIS in the agency:

| Hardware, Software & Supplies Items | Annual Costs |
|-------------------------------------|-------------------|
| Plotter Paper, Ink & Print Heads | \$3,150.73 |
| Dell GIS Computers | \$1,335.00 |
| Total Supply Costs | \$4,485.73 |

Table 5 - GIS Supply Costs

2.1.2 Annual Resources (GIS Staff)

The agency contains eleven staff members that perform some activity that supports GIS for the agency. This assistance includes GIS database development efforts, as well as GIS application installation, configuration, and support. \$39,243 is spent annually to support the personnel associated with GIS maintenance activities (these data layers are listed in section 3.1.4), which is based on the salary and overhead of each GIS personnel multiplied by the percentage of time performing GIS maintenance activities. These individuals are listed in the table below, along with the percentage of time allocated to GIS maintenance activities. This percentage does not represent time spent using GIS technology, but rather database development and maintenance that supports GIS activities.

| GIS Personnel | % Allocated to GIS Maintenance Activities |
|----------------|---|
| Philip Canter | 3% |
| Carl Koprowicz | 5% |
| Mike Leedy | 15% |



| GIS Personnel | % Allocated to GIS Maintenance Activities |
|----------------------------------|--|
| Terry Tanguilig | 3% |
| Gennet Medhin | 3% |
| Chad Cameron | 4% |
| Nina Skinner | 3% |
| Tricia Amburgey | 6% |
| Sam Helms | 3% |
| Kim Lankford | 3% |
| Wenjuan Lu | 7% |
| Total GIS Personnel Cost: | \$39,423 |

Table 6 – Annual GIS Personnel Costs

2.1.3 Annual Enterprise Costs

Each of the costs for providing the enterprise GIS have been totaled for the county and distributed among each of the county agencies relative to the number of users in each agency. These costs have been categorized as operating cost, or the cost that is expended to provide GIS support and resources (such as database management, infrastructure, software licensing etc.), and capital costs, which reflect the cost of purchasing GIS data (such as Orthophotography or Contours). The total annual operating cost for the County GIS enterprise is \$859,717.21 and the total annual capital cost is \$272,000.00. The Police Department has a relatively moderate number of GIS users, 11 (or 4.95% of the total users in the county). Annual enterprise costs have been proportionately distributed to Police Department based on this 4.95% factor. These costs are calculated as \$42,598.60 in operating costs and \$13,477.48 in capital costs, totaling \$56,076.08. Each of these figures has been provided in the table below.

| # of Users | % of Total Users | Factor of Operating Cost Applied to Agency | Factor of Capital Cost Applied to Agency | Total Annual Enterprise Cost Applied to Agency |
|-------------------|-------------------------|---|---|---|
| 11 | 4.95% | \$42,598.60 | \$13,477.48 | \$56,076.08 |

Table 7 – Annual Enterprise GIS Costs



2.2 Agency Benefit Assessment

The Police Department has seen significant benefits from GIS usage in relation to the size of the department and in comparison to other agencies within the county of similar magnitude. GIS has been used to solve complex spatial problems and support mapping efforts, providing both qualitative and quantitative benefits to the agency. These are discussed in the following sections.

2.2.1 Existing GIS Benefits

The existing benefits realized by the Police Department have been determined for each program by analyzing the effort needed to perform a task with GIS in comparison to the time spent without GIS. This examination allows each benefit to be measured in terms of time, which has been then recomputed to dollars that are realized annually. Each of the existing benefits that are currently being realized has been summarized by program below and has been aggregated to give an annual dollar figure. These benefits are discussed in more detail in section 4. All dollar amounts are based on a flat rate of \$33.95 per hour.

| Program | Traffic Accident Analysis |
|-------------------------|---|
| Description | Provide geographic information to Field Operations and Traffic Resource Management regarding traffic accidents and motor vehicle violation charges. |
| Time Benefits (Annual) | \$14,259 (420 hours) |
| Other Benefits (Annual) | N/A |
| Total Benefits | \$14,259 |

| Program | Collaborative Supervision and Focused Enforcement (CSAFE) |
|-------------------------|---|
| Description | Analysts assist field personnel in defining communities targeted for CSAFE funding by State government. This task is influenced by PSI maps. All maps are maintained in RCAGIS. |
| Time Benefits (Annual) | \$14,259 (420 Hours) |
| Other Benefits (Annual) | N/A |
| Total Benefits | \$14,259 |



| Program | Command and Control |
|-------------------------|---|
| Description | Provide geographic support to Command and Control for specific incidents. Used for significant weather events or extraordinary criminal incident. |
| Time Benefits (Annual) | N/A (This program could not be performed without GIS) |
| Other Benefits (Annual) | N/A |
| Total Benefits | N/A (This program could not be performed without GIS) |

| Program | Homeland Security |
|-------------------------|---|
| Description | This program provides geographic support to police personnel involved in Homeland Security. Maps are made that include aerial photographs, building footprints, and highway networks. GIS supports Homeland Security exercises and assists in disaster prediction and producing "dignitary protection" maps. They also provide some support to our Homeland Security operations in the form of maps and aerial photographs that are used for drills and exercise. |
| Time Benefits (Annual) | \$2,546.25 (75 Hours) |
| Other Benefits (Annual) | N/A |
| Total Benefits | \$2,546.25 |

| Program | Public Safety Indicators |
|-------------------------|--|
| Description | Produced quarterly, analysts provide maps showing communities experiencing high amounts of violent crime, maintenance of order calls for service, drug arrests, and juvenile offender place of residence. A composite map showing all four indicators is also produced. Information is used for Strategic Planning programs, community policing, and outreach programs. All maps are maintained in RCAGIS. |
| Time Benefits (Annual) | \$ 38,024.00 (1120 hours) |
| Other Benefits (Annual) | N/A |
| Total Benefits | \$ 38,024.00 |



| Program | Scanning and Forecasting |
|-------------------------|---|
| Description | Analysts monitor internal and external factors that directly/indirectly influence Department's ability to deliver police service. |
| Time Benefits (Annual) | \$42,268.05 (1245 hours) |
| Other Benefits (Annual) | N/A |
| Total Benefits | \$42,268.05 |

| Program | Tactical Crime Analysis |
|-------------------------|---|
| Description | Crime has a geographic component that is often one of the first known attributes of an incident. Analysts map incident locations, recovery locations, offender place of residence, and other geographic information that may relate to a crime pattern or series. |
| Time Benefits (Annual) | \$133,219.80 (3924 hours) |
| Other Benefits (Annual) | N/A |
| Total Benefits | \$133,219.80 |

| Program | Traffic Stop Data Collection |
|-------------------------|--|
| Description | This program is mandated by the State of Maryland (Article 25-113 Annotated Code) that results in the collection of driver demographics, and circumstances leading to and following the stop. Traffic stops are georeferenced to reporting areas and aggregated to posts. The department uses this information to determine the demographics associated with traffics stops for posts and officers. Data has been analyzed in response to allegations of racial or sexual profiling. |
| Time Benefits (Annual) | \$34,221.60 (1008 hours) |
| Other Benefits (Annual) | N/A |
| Total Benefits | \$34,221.60 |

Table 7 - Existing GIS Benefits by Program



| Total Annual GIS Benefits Summary | | | |
|---|------------------------|------------------------------|----------------------------------|
| Time Benefits Summary (By Activity): | Hours Saved | Labor Rate (Avg.) | Annual Time Benefits |
| Traffic Accident Analysis | 420 | \$33.95 | \$14,259.00 |
| Collaborative Supervision and Focused Enforcement (CSAFE) | 420 | \$33.95 | \$14,259.00 |
| Command and Control | N/A | \$33.95 | N/A |
| Homeland Security | 75 | \$33.95 | \$2,546.25 |
| Public Safety Indicators | 1120 | \$33.95 | \$ 38,024.00 |
| Scanning and Forecasting | 1245 | \$33.95 | \$42,268.05 |
| Tactical Crime Analysis | 3924 | \$33.95 | \$133,219.80 |
| Traffic Stop Data Collection | 1008 | \$33.95 | \$34,221.60 |
| | | | |
| Total Time Benefits: | 8,212 | \$33.95 | \$278,797.70 |
| Other Benefits Summary | | | |
| (By Activity): | | | Annual Other Benefits |
| | | | |
| Total Other Benefits: | | | \$0.00 |
| Grand Total Annual Benefits: | | | |
| | | | \$278,797.70 |

Table 8 – Total Annual GIS Benefits



Each of the benefits for the activities listed in section 4 have been depicted in the figure below, which provides a clear picture of the areas that are receiving the most benefits from GIS usage.

Police GIS Benefits

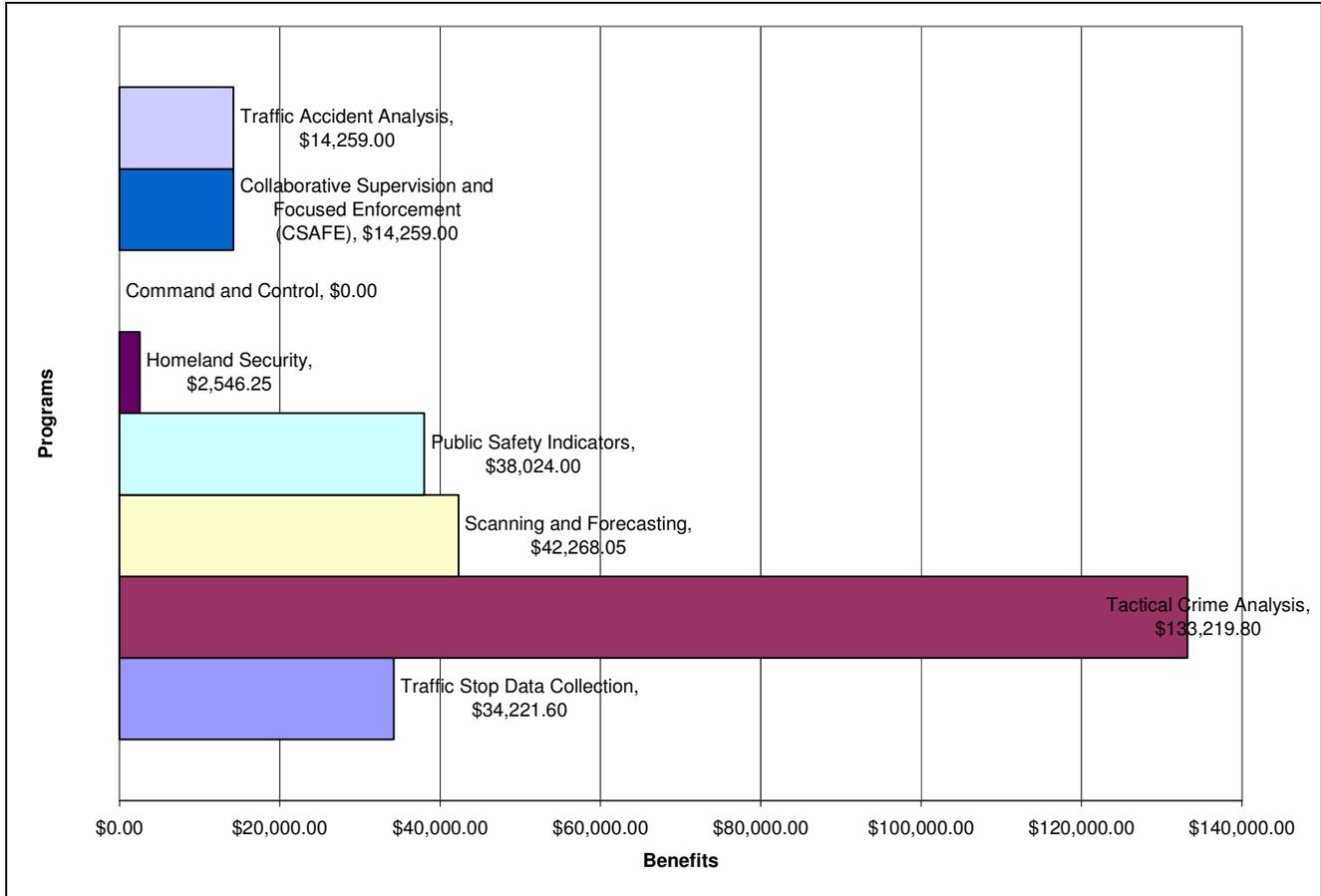


Figure 1 – Police Department GIS Benefits

The Tactical Crime Analysis program has managed to receive more benefits than the rest of the programs. Public Safety Indicators, Scanning and Forecasting, and Traffic Stop Data Collection programs each see similar moderate benefits, and the rest of the programs see smaller benefits.



3 GIS Utilization and Recommendations

3.1 GIS Utilization Analysis

GIS is being used extensively within the Police Department to support divisions throughout the agency in a variety of mapping and spatial analysis needs. These GIS-related activities often involve complex modeling, investigation, and analysis that have positioned the agency as one of the most sophisticated and competent users within the county and have gained the agency recognition across the country. Personnel appear to be adequately trained to handle the various requests from the agency, datasets are being effectively developed and incorporated into activities, and commercial-off-the-shelf software and customized applications are being used to support mapping and analysis. There has been significant investment in GIS within the agency that has greatly incorporated the system into most of the business processes within the agency.

3.1.1 GIS Personnel

GIS specialists and GIS-trained personnel are prominent within the Police Department. These personnel are located in the Administrative and Technical Services Bureau and act as a centralized GIS support group for the entire agency. There are approximately 15-20 individuals that handle most of the GIS analysis and map production, providing ample assistance for the needs of the department. Currently, the database development and maintenance activities are distributed throughout all personnel in the unit.

The Police Department has already invested in providing GIS training through the Computer Training Center in the Office of Information Technology for its staff. The following shows a breakdown of the levels of training and the number of staff that have received training at that level:

| Basic Training (DataQuery, ArcView) | Mid-Level (ArcGIS Intro) | Advanced (ArcGIS 8x or higher) |
|--|-------------------------------------|---|
| 7 | 10 | 26 |

The majority of the classes provided to the department have been for advanced GIS training, corresponding to the complex analysis being performed within the agency.

3.1.2 GIS Data Usage

The Police Department uses many of the GIS datasets provided by OIT’s ArcSDE services via the County WAN, in addition to datasets developed and maintained within the agency. These datasets are used in a variety of ways. The datasets used by five (5) or more of the agency’s programs are listed in the table below:



| GIS Data Layer | Used by # Programs |
|---|--------------------|
| AddressPoints (View) | 8 |
| County Boundary | 8 |
| Police Precincts | 8 |
| Police Reporting Areas | 8 |
| Police Stations | 8 |
| Roads | 8 |
| Street Centerlines | 8 |
| Land Use 2002 | 8 |
| Landuse | 6 |
| Parole and Probation Residence Locations | 6 |
| Tax Parcel | 6 |
| Census Blocks (2000) | 6 |
| Department of Correction Releases | 5 |
| Orthophoto (2002) | 5 |
| Orthophoto (2005) | 5 |
| Regional Road Centerline (City and surrounding jurisdictions) | 5 |

Table 8 - Data Usage

3.1.3 GIS Applications Usage

The GIS personnel within the Police Department have utilized most of the enterprise GIS applications provided by OIT. ArcGIS and ArcGIS Extensions are each being used by all of the programs within the agency to support business processes. This software appears to be effectively used where incorporated and personnel are proficient with these programs. ArcGIS version 9.0, service pack 3 (SP3) is the current County standard that is deployed throughout the various agencies. MapInfo is used for GIS activities as well. The agency also used several spatial analysis and statistical packages, including GeoDa and CrimeStat. Web mapping services, such as ArcIMS and MyNeighborhood, are only used by two programs within the agency.

3.1.4 GIS Database Maintenance

GIS data maintenance responsibilities are also considerable. The Police Department creates and maintains many datasets that are mostly created by geocoding addresses from nonspatial databases. The department is responsible for maintaining the following layers in support of the enterprise GIS:



| Dataset | Description | Update Frequency | Location | Complete |
|--|--|------------------|----------|----------|
| Traffic Accident Citation Locations | Record identifies citation locations by address or street intersection (point). Used to determine where and when interdiction (radar) is recommended. | Monthly | Local | Yes |
| Accident Locations | Record identifies accident location by address or street intersection (point). Used to construct weighted links showing number of accidents along road sections. Maps produced monthly for command staff. | Monthly | Local | Yes |
| Arrest Data | Arrest records associated with a person charged with a crime. Multiple records may be associated with one individual depending on the number of charges related to a particular incident. Record includes address location of arrest (point) and address location of home (point). | Monthly | Local | Yes |
| Calls for Service | Incident record containing reporting areas (polygons) and addresses (points). Used to measure police workload, Responses time studies, redistricting, and public safety indicators. | Weekly | Local | Yes |
| CSAFE areas | Polygons that identify neighborhoods and communities that have high amounts of crime and service demand ("hot spots"). Department receives State funding to focus resources and services in CSAFE areas. Reports on crime produced quarterly to the State. | Quarterly | Local | Yes |
| Department of Corrections Home Addresses | Point file showing the home address location of individuals released from Department of Corrections. Record includes offense types, date of release, and parole agent. Used to monitor criminal activity possibly related to offenders released from DOC. | Daily | Local | Yes |
| Liquor License Establishments | Point file-showing location of all liquor license establishments. Used to explore relationships between DUI and arrests. | Yearly | Local | Yes |
| Motor Vehicle Theft Recovery Locations | Record identifies the address or intersection of a recovered vehicle (point). Recovery location can be linked to a theft location to determine possible egress routes. | Daily | Local | Yes |
| Offense Data | Incident record associated with a reported crime event. Used to identify crime locations by reporting area (polygon) and address (point). Record includes types of crimes, dates, and times. | Monthly | Local | Yes |
| Parole and Probation Home Addresses | Point file showing the home address location of individuals on parole or probation. Record includes offense types, date of release, and parole agent. Used to monitor criminal activity possibly related to offenders on parole/probation. | Monthly | Local | Yes |



| Dataset | Description | Update Frequency | Location | Complete |
|--------------------------------|--|------------------|----------|----------|
| Points of Interest | Point file corresponding to address location of governor's parents' home, county executive home, and county executive's parents' home. | Yearly | Local | Yes |
| Police Posts | Polygons that define a primary service area for police on patrol. Post boundaries consist of one or more reporting areas. Defined according to workload, response times, and community boundaries. Post boundaries vary by three 8-hour shifts, although boundaries could change every hour depending on service demand. Data Verification and/or Update are performed on a regular cycle. CALEA standard. | Twice per year | Local | Yes |
| Police Precincts | Polygons identifying the boundaries of commands in Field Operations. Each precinct is commanded by a Captain, with authorized strength ranging from 70-150 officers. Boundaries are realigned as shifts in population and officer workload change, or new facilities are added. Data Verification and/or Update are performed on a regular cycle. CALEA standard. | Twice per year | Local | Yes |
| Police Reporting Areas | Polygons identifying the smallest areal unit used by police to report statistics. Size and shape are largely influenced by land use. Reporting areas used by CAD to dispatch police to address locations. Used in dispatch plan and nearby files, cross-referenced to address block face file. Data Verification and/or Update are performed on a regular cycle. CALEA standard. | Twice per year | Local | Yes |
| Potential Target Locations | Point file showing potential target locations. Includes convenience stores, banks, buildings under construction, and fast food restaurants. | Yearly | Local | Yes |
| Registered Child Sex Offenders | Point file that identifies home addresses of individuals arrested and prosecuted for committing a sex offense with a child. | Monthly | Local | Yes |
| Registered Sex Offenders | Point file that identifies home addresses of registered sex offenders in Maryland. Only Baltimore County and Baltimore City addresses are geocoded, but tabular data includes offenders residing throughout the State. | Monthly | Local | Yes |
| School Addresses | Point file showing the location of all public schools in Baltimore County. Point locations are buffered and registered sex offenders residing within buffer areas are noted. Analysts also produce detailed reports on calls for service and crime in and around schools. | Yearly | Local | Yes |
| Sensitive Locations | Point file that identifies potential terrorist targets. Includes phone towers, hospitals, schools, etc. | Yearly | Local | Yes |



| Dataset | Description | Update Frequency | Location | Complete |
|------------------------------------|---|------------------|----------|----------|
| Strategic Planning Areas | Polygons that identify neighborhoods and communities specifically targeted by precinct commanders for problem solving and community policing activities. Areas are influenced by Public Safety Indicator maps. | Quarterly | Local | Yes |
| Tactical Crime Locations | Tactical data record for burglaries, motor vehicle thefts, and robberies. Identifies reporting area (polygon) and address (point) location of offense. Record includes details about the crime, including suspect information, date/time ranges, type of offense, and modus operandi. | Daily | Local | Yes |
| Field Investigation Reports (FIRS) | Location of Field Investigations | Daily | Local | Yes |
| Traffic Stop Data | Record identifies location of traffic stop by address (point) or reporting area (polygon). State mandated program that collects data on driver's race, gender, age, and type of moving violation. Used to identify racial profiling. | Monthly | Local | Yes |
| Victimization | Record identifies crime victims by address location (point). Includes information on age, type of crime, gender, and race/ethnicity. Used to identify whether crime victims cluster geographically by age, race, or ethnicity. | Monthly | Local | Yes |

Table 9 - Agency Data Maintenance

The cost of maintaining each of these data layers is discussed in section 2.1.2.

3.1.5 Assessment of Business Process with GIS

GIS is being effectively used to support most of the business processes within the agency. GIS has been used for many years, and with the aid of capable staff, has been intelligently incorporated into the workflow of most activities. Many of the business processes currently utilizing GIS would not be performed at the same level without the existence of GIS.

GIS involvement in each of these activities business processes are discussed in the table below.

| Program | Business Process Assessment |
|---------------------------|---|
| Traffic Accident Analysis | GIS is used to map the locations of various types of accidents and associated data, in order to analyze patterns and series of these phenomena. |



| Program | Business Process Assessment |
|---|---|
| Collaborative Supervision and Focused Enforcement (CSAFE) | Analysts assist field personnel in defining communities targeted for CSAFE funding by State government. |
| Command and Control | GIS is used to support the map and data needs of the Command and Control center when critical events occur. |
| Homeland Security | GIS is occasionally used to support the map and data needs of the Homeland Security department. |
| Public Safety Indicators | Analysts assist field personnel in defining communities targeted for CSAFE funding by State government. This task is influenced by PSI maps. All maps are maintained in RCAGIS. |
| Scanning and Forecasting | GIS is used to analyze the current capabilities of enforcement and to determine where resources may need to be allocated. |
| Tactical Crime Analysis | GIS is used to understand the spatial distribution of crimes throughout the communities of the county, in order to help distribute resources effectively. |
| Traffic Stop Data Collection | GIS is used to analyze the geographic nature of traffic stops, in order to help ensure that these stops are being conducted justly. |

Table 10 - GIS Integration with Business Processes, by Program

The involvement of GIS in specific activities is discussed more thoroughly in section 4. There are several ways that GIS could be used to integrate the system more fully into business processes, which are discussed in detail in section 3.2.4.

3.2 GIS Needs Assessment

3.2.1 Applications

There are several custom applications that could be developed to support the business processes of the Police Department, which are discussed below.

- **Address Verification and Correction Software** – Most of the data maintenance and analysis/mapping activities involve some sort of geocoding activity. This process is currently encumbered by the accuracy of the address data that is used to perform the geocoding. An address verification and correction software package could find and correct many of these errors, reducing the time spent performing these geocoding activities.
- **Redistricting Software** – The boundaries of several polygon datasets within the department are continually updated. These boundaries are revised to reflect changes in some underlying data, such as the number of crimes or population. An application could be incorporated that automatically creates new boundaries based on some input data, decreasing the amount of time spent manually updating these features.



3.2.2 Data

There are several datasets that could be developed to support the needs of various programs in the Police Department. Some of these datasets are listed in the table below. These datasets may also provide value to other agencies.

| Dataset | Limitation | Activities That Could Benefit From Data |
|------------------|---|---|
| Address Points | Currently, the Address Points are being verified for accuracy as a part of the Facilities Geodatabase Field Verification project. | <ul style="list-style-type: none"> • Traffic Accident Analysis • Collaborative Supervision and Focused Enforcement (CSAFE) • Command and Control • Homeland Security • Public Safety Indicators • Scanning and Forecasting • Tactical Crime Analysis • Traffic Stop Data Collection |
| Building Heights | Does not exist | <ul style="list-style-type: none"> • Homeland Security • Command and Control |

Table 11 - Datasets That Need to be Created

3.2.3 Training

Most of the analysts that are hired do not have any GIS background. Each of these personnel appears to be effectively trained in the GIS applications that are used to accomplish the spatial analysis and map production activities within the department. There were no training activities found that are needed to significantly improve the GIS use within the department.

3.2.4 Best Practices

Two ways were initially determined for the Police Department to take advantage of best practices that have been implemented by other agencies or counties with similar business processes. These are:

- **Data Storage** – All non-sensitive spatial data stored on local drive should be transferred to the enterprise ArcSDE database, which would promote information sharing with other agencies. If connectivity will not support a direct connection, the databases could be uploaded to the enterprise server on a regular cycle to support information sharing between agencies.
- **Access Web Mapping Services** – Real-time data provided from state and federal government agencies could be accessed from web mapping services. This would allow for data that is continually updated to be accessed as these updates are performed. These web-mapping services could be incorporated into existing GIS applications, or accessed from an internet mapping application provided by the county through ArcIMS.



- **Address Point Geocoding** – The geocoding process used within the agency currently relies on street centerline data to provide a geographic location to address data. The process geocodes based on the theoretical location of an address using a percentage of the distance along the address range of a street segment. The accuracy of these geocoded locations could be improved by using the address points provided by the county as source data. These points would provide a better approximate location of the address, taking into account the actual location of the building being geocoded.

3.2.5 Communication and Agency Coordination

Communication within the Police Department appears to be effective. All agency requests for mapping and spatial data needs are filtered through the Analysis Section located in the Administrative and Technical Services Bureau, which creates a “project” record that is used to track the progress of these requests as they are assigned and completed. This helps formalize the communication between different bureaus and promotes coordination between personnel with the department. The Police Department leadership participates in the Baltimore County GIS Committee.

3.3 Recommendations

The Police Department could further benefit from GIS in several ways. This section outlines recommendations that can be implemented in the short-term and mid-term to enhance the agency’s GIS usage and further take advantage of the enterprise system provided by the county. These will in turn reduce time and money spent on activities performed by the Police Department and increase the level of service provided to customers. Since many of the department’s responsibilities have a spatial component, benefits can be gained in several ways from using GIS within the agency.

3.3.1 Short-term Recommendations & Potential Benefits

There are several undertakings that should be implemented in the near term to improve GIS usage within the agency and meet the needs that were outlined in the previous section. These recommendations are categorized by activities that can be quickly deployed with little effort and by activities that require a greater investment but are greatly needed. Each of these recommendations are discussed below. See section 4 for more detailed recommendations to support individual activities.

3.3.1.1 Quick Deployment

The following recommendations have the potential to provide additional benefits to the agency and can be implemented with few additional resources:

Opportunity 1: Serve Data to Enterprise

Of the many datasets that are developed and used by the Police Department, a few are served to the Enterprise ArcSDE database within OIT. There are many other datasets developed that are not available to the enterprise. Some of these should not, because of security reasons, be served to the public or personnel external to the agency. However, there are some datasets that



could be used by the public, such as crime and registered sex offenders locations, that could be made available to the enterprise. This would allow for users to have better access to this information and potentially decrease the amount of time spent by personnel within the agency handling data requests.

Opportunity 2: Improve ArcGIS Licenses Accessibility

The Police Department has many users that need access to the ArcGIS licenses provided to the enterprise from OIT. These licenses need to be continually accessed to handle the day-to-day business processes, as well as critical time-sensitive activities that require immediate response. Currently, the department has problems accessing all of the licenses needed for each analyst. Because of the nature of the work performed by the department, licenses should be dedicated, either through the enterprise or through standalone files, to each analyst in the department. A separate license manager could be set aside for this department's use, in order to ensure that the application is available in critical periods. An analysis of license availability and utilization should be conducted to identify if the County should invest in additional licenses or minimize conflicts by making specific licenses privately available to the Police Department.

Opportunity 3: Leverage the Facilities Geodatabase

Baltimore County is developing an enterprise, countywide Facilities Geodatabase that will be accurate and maintained and have the addresses, business names, and use codes for almost all facilities in Baltimore County (commercial, industrial, etc.) This database was compiled to be spatially accurate and a source for the field compilation was the CoStar and Reference USA databases. With this database having all address locations, commercial, industrial, residential and other facility classifications, it will provide needed information for the Police Department. This database could replace the "Potential Target Locations" database currently maintained by the agency, since these locations will be included in the facilities dataset. This could reduce time and money spent on data maintenance. The address points within the database could also be used to improve geocoding operations. These points would provide a better approximate location of the address than the current method, taking into account the actual location of the building being geocoded.

3.3.1.2 Additional Investment Opportunities

Opportunity 1: Improve Geocoding Operations

The Police Department relies heavily on geographic data with addresses. This address data is currently geocoded with the MapInfo geocoding engine, which gives X, Y coordinates to each record. This process is currently time consuming, since the address data that comes from many sources is not standardized. An address validation and correction application should be purchased to determine if the address is valid and correct any discrepancies in the data. This software package could benefit these activities, since less time would be spent correcting and formatting address data. This application could also be used by other agencies in the county that rely on geocoding operations.



Group 1 currently provides a software package that would offer these solutions. Group 1 is also one of the only companies that is using address points for geocoding purposes. A partnership might be possible between the county and this software provider, offering a maintained address point file in exchange for geocoding software.

3.3.2 Mid-term Recommendations & Potential Benefits

Opportunity 1: Increase Network Speed

The WAN used to connect to the enterprise ArcSDE database provided by OIT is cumbersome, preventing data from being used effectively. This connection should be investigated and potentially increased to allow for faster communication between the Police Department office and OIT. This will allow for personnel to use the data services provided by the county, as well as post data to the enterprise that has been created within the department. This will save time spend managing data dumps, increase the accuracy of the data by providing users up-to-date data, and improve collaboration between county agencies.

Opportunity 2: Incorporate Redistricting Application

An application should be purchased that will help with redefining boundary datasets that are currently being maintained within the department. This application could develop new boundaries to enumeration units and administrative areas based on some underlying point or aerial data. This application could save time spent manually defining these areas and could optimize the areas to effectively distribute the population of data evenly.

Opportunity 3: Additional Personnel

A GIS technician could be hired that would handle all of the data compilation and maintenance activities currently handled by analysts. Although there does not appear to be constraints on productivity or insignificant resources for GIS activities, a dedicated GIS technician could free up analysts for analysis, and centralize all data maintenance to activities to one source. This could provide savings to the agency by reducing the rate at which data maintenance activities are performed. This could also allow for the analysts to focus more energy into turning the data into information and continue to maximize and expand benefits for the Police Department.



4 Programs and Activities

Each of the interviews conducted with agency officials and personnel were used to compile information about the business processes used for each program within the agency, as well as look at how GIS is being used and benefits are being realized.

Each program is described below, listed with GIS-related funding and mandates, as well as any social or political benefits that are being seen as a result of using GIS. The associated products, customers served, and data/ applications used are also discussed. Activities have also been included under their associated programs, along with the process with and without GIS used to complete this activity, benefits that have been realized, and recommendations for additional GIS implementation where appropriate.



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4.1 Traffic Accident Analysis

| | | |
|---|--|--|
| Program: Traffic Accident Analysis | | |
| Primary Point of Contact: | | |
| Phil Canter | | |
| Overview: | | |
| Provide geographic information to Field Operations and Traffic Resource Management regarding traffic accidents and motor vehicle violation charges. | | |
| Funding: | | |
| There is no external funding for this program. | | |
| Mandates: | | |
| There are no GIS-related mandates associated with this program. | | |
| Political Benefits: | | |
| Traffic complaints are usually the primary concern raised by communities. Most requests for statistical information are completed by the Traffic Accident analyst assigned to the Analysis Section. Information is forwarded to the appropriate police commands for action. | | |
| Social Benefits: | | |
| GIS enhances communication with outside agencies and helps officers position themselves closer to accident-prone areas. | | |
| Products/Services: | | |
| <ul style="list-style-type: none"> • DUI, fatality, and accident maps • Geocoded data | | |
| Customers: | | |
| <ul style="list-style-type: none"> • Office of Substance Abuse • Office of Planning • Office of Community Conservation • Local Management Board • Health Department | | |
| Data (Enterprise Layers are Listed in Bold): | | |
| <ul style="list-style-type: none"> • AddressPoints (View) • County Boundary • DUI Arrest Locations • Land Use 2002 • Landuse • Liquor Store License Locations | <ul style="list-style-type: none"> • Parcel Based Landuse • Police Precincts • Police Reporting Areas • Police Posts • Police Stations • Regional Planning Districts • Roads | <ul style="list-style-type: none"> • Street Centerlines • Traffic Analysis Zones • Traffic Accident Locations • Traffic Signal and Calming Layers |



Applications Used:

- ArcGIS (Standard)
- ESRI Extensions
- Map Info
- CrimeStat

Associated Activities:

- 4.1.1 Traffic Accident Analysis - Driving Under Influence (DUI) maps
- 4.1.2 Traffic Accident Analysis - Traffic accident maps



4.1.1 Traffic Accident Analysis - Driving Under Influence (DUI) maps

| | | | | | |
|--|----------------------|------------|------------------------------|-----------------------------|---|
| Activity: Traffic Accident Analysis - Driving Under Influence (DUI) maps | | | | | |
| Primary Point of Contact: | | | | | |
| Phil Canter | | | | | |
| Overview: | | | | | |
| Analysts map out street segments showing number of incidents involving DUI arrests and DUI related accidents. Traffic demand models are used in conjunction with this information to determine where traffic is coming from and going to, and what the impact would be for interdiction points along specific routes of travel. This information is used to identify possible DUI interdiction points. | | | | | |
| Interviewee(s) Providing Information: | | | | | |
| Phil Canter, Sam Helms, Wenjuan Lu, Tricia Amburgey | | | | | |
| Process with GIS: | | | | | |
| Addresses of DUI incidents are geocoded, giving the location of these incidents as X, Y coordinates. These are associated with a street segment. Maps are produced within GIS that include this information, as well as supporting basemap data. | | | | | |
| Process without GIS: | | | | | |
| Each address would need to be associated to a street using a relational database join. The results of this join would need to be aggregated for each street. Hardcopy maps would need to be gathered and copied and pasted to create a map of the area of interest. These maps would need to be symbolized or annotated with the results of the street segment aggregation. | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | |
| <ul style="list-style-type: none"> • High | | | | | |
| Benefits to Using GIS for this Activity: | | | | | |
| <ul style="list-style-type: none"> • GIS helps personnel understand the spatial characteristics of DUIs, aiding in prevention and detection of these events. • GIS saves time and money spent on data creation, map compilation, and analysis. | | | | | |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) |
| 84 | 42 | 42 | 4 | 168 | \$ 5,704.00 |
| Annual Benefit: \$ 5,704.00 | | | | | |
| Areas for Improvement: | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | |



New Opportunities:

- An application could be developed that automatically calculated the number of DUIs per street segment. This application would geocode the DUI addresses and associate them to a street segment. The total number of DUIs per street segment could be tied to an attribute of the street segment, which could be used to annotate or symbolize a map.
- GPS could be used in the field to give the location of DUI events. This would give a more accurate location of the events than are currently created, which would allow for more accurate analysis to be performed. This would save time spent by the analyst performing geocoding operations, since these coordinates could be ingested directly into the GIS.

Benefits of Pursuing New Opportunities:

- GIS could save money spent geocoding data and producing maps.
- GPS could provide greater accuracy to spatial information.
- GPS could save time and money spent geocoding.



4.1.2 Traffic Accident Analysis - Traffic accident maps

| | | | | | |
|---|----------------------|------------|------------------------------|-----------------------------|---|
| Activity: Traffic Accident Analysis - Traffic accident maps | | | | | |
| Primary Point of Contact: | | | | | |
| Phil Canter | | | | | |
| Overview: | | | | | |
| Analysts map out street segments showing number of traffic accidents, traffic complaints, and DUI incidents. Street segments are thematically mapped by number of accidents. Information is provided to Field Operations on a monthly basis, or by request. Information is used to identify accident abatement locations. | | | | | |
| Interviewee(s) Providing Information: | | | | | |
| Phil Canter, Sam Helms, Wenjuan Lu, Tricia Amburgey | | | | | |
| Process with GIS: | | | | | |
| Addresses of incidents and complaints are geocoded, giving the location of these incidents as X, Y coordinates. These are associated with a street segment. Maps are produced within GIS that include this information, as well as supporting basemap data. | | | | | |
| Process without GIS: | | | | | |
| Each address would need to be associated to a street using a relational database join. The results of this join would need to be aggregated for each street. Hardcopy maps would need to be gathered and copied and pasted to create a map of the area of interest. These maps would need to be symbolized or annotated with the results of the street segment aggregation. | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | |
| <ul style="list-style-type: none"> • High | | | | | |
| Benefits to Using GIS for this Activity: | | | | | |
| <ul style="list-style-type: none"> • GIS helps personnel understand the spatial characteristics of incidents and complaints, aiding in prevention, mitigation, and detection of these events. • GIS saves time and money spent on data creation, map compilation, and analysis. | | | | | |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) |
| 42 | 21 | 21 | 12 | 252 | \$8,555.00 |
| Annual Benefit: \$8,555.00 | | | | | |
| Areas for Improvement: | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | |



New Opportunities:

- An application could be developed that automatically calculated the number of incidents and complaints per street segment. This application would geocode the addresses and associate them to a street segment. The total number of incidents and complaints per street segment could be tied to an attribute of the street segment, which could be used to annotate or symbolize a map.
- GPS could be used in the field to give the location of traffic accidents. This would give a more accurate location of the events than are currently created, which would allow for more accurate analysis to be performed. This would save time spent by the analyst performing geocoding operations, since these coordinates could be ingested directly into the GIS.

Benefits of Pursuing New Opportunities:

- GIS could provide a better understanding of the spatial nature of the events analyzed.
- GPS could provide greater accuracy to spatial information.
- GPS could save time and money spent geocoding.



4.2 Collaborative Supervision and Focused Enforcement (CSAFE)

| | | |
|---|---|---|
| Program: Collaborative Supervision and Focused Enforcement (CSAFE) | | |
| Primary Point of Contact: | | |
| Phil Canter | | |
| Overview: | | |
| Analysts assist field personnel in defining communities targeted for CSAFE funding by State government. This task is influenced by PSI maps. All maps are maintained in RCAGIS. | | |
| Funding: | | |
| There is no external funding for this program. | | |
| Mandates: | | |
| There are no GIS-related mandates associated with this program. | | |
| Political Benefits: | | |
| There are significant political benefits to this program. CSAFE communities are intensively targeted for crime mitigation. PSI maps show spatial relationships between CSAFE communities and neighboring communities. Reductions in crime for CSAFE areas have beneficial effects on surrounding communities. Direct relationship between decreasing crime and improvements in quality of life. | | |
| Social Benefits: | | |
| GIS provides enhanced communication with external agencies. The additional resources available to CSAFE communities likely have some social benefit since these areas tend to be economically depressed, high service demand neighborhoods. | | |
| Products/Services: | | |
| <ul style="list-style-type: none"> • Maps | | |
| Customers: | | |
| <ul style="list-style-type: none"> • Office of Substance Abuse • Office of Planning • Office of Community Conservation • Local Management Board • Health Department | | |
| Data (Enterprise Layers are Listed in Bold): | | |
| <ul style="list-style-type: none"> • AddressPoints (View) • Census Blocks (2000) • Commercial Revitalization Districts • Community Associations • County Boundary | <ul style="list-style-type: none"> • Department of Correction Releases • Land Use 2002 • Landuse • Parole and Probation Residence Locations | <ul style="list-style-type: none"> • Police Precincts • Police Reporting Areas • Police Stations • Roads • Street Centerlines • Tax Parcel |



| Applications Used: | | | | | | | | | | | | | | | | | |
|---|----------------------|------------|------------------------------|-----------------------------|---|------------------------------|----------------------|------------|------------------------------|-----------------------------|---|-----|----|-----|---|-----|-------------|
| <ul style="list-style-type: none"> • ArcGIS (Standard) • ESRI Extensions • Map Info • CrimeStat | | | | | | | | | | | | | | | | | |
| Associated Activities: | | | | | | | | | | | | | | | | | |
| None | | | | | | | | | | | | | | | | | |
| Process with GIS: | | | | | | | | | | | | | | | | | |
| GIS is used for analysis to produce maps and geographic data. | | | | | | | | | | | | | | | | | |
| Process without GIS: | | | | | | | | | | | | | | | | | |
| Hardcopy maps would need to be gathered and copied and pasted to create a map of the area of interest. The results of this manual process could not be posted to an enterprise system for distribution and use. | | | | | | | | | | | | | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • High | | | | | | | | | | | | | | | | | |
| Benefits to Using GIS for this Activity: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • GIS saves time and money spent compiling maps. • GIS helps with distribution of maps and communication. | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Staff Hours w/o GIS (Manual)</th> <th>Staff Hours with GIS</th> <th>Difference</th> <th>Annual # Iterations Per Year</th> <th>Total Hours Saved Using GIS</th> <th>Annual Time Savings Benefit (Based on \$33.95/hr)</th> </tr> </thead> <tbody> <tr> <td>140</td> <td>35</td> <td>105</td> <td>4</td> <td>420</td> <td>\$14,259.00</td> </tr> </tbody> </table> | | | | | | Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | 140 | 35 | 105 | 4 | 420 | \$14,259.00 |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | | | | | | | | | | | | |
| 140 | 35 | 105 | 4 | 420 | \$14,259.00 | | | | | | | | | | | | |
| Annual Benefit: \$14,259.00 | | | | | | | | | | | | | | | | | |
| Areas for Improvement: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • The WAN connection speed could be increased so that the DataQuery application and associated data could be used more. This would save time and money spent using the DataQuery application. This would also allow for better access to existing GIS data. • More ESRI enterprise licenses could be made available from OIT. Currently the agency is not able to procure all of the licenses that it needs at one time. Providing additional licenses would allow all personnel within the agency to use GIS and see associated benefits. | | | | | | | | | | | | | | | | | |
| New Opportunities: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • None determined | | | | | | | | | | | | | | | | | |
| Benefits of Pursuing New Opportunities: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | | | | | | | | | | | | | |



4.3 Command and Control

| | | |
|--|---|---|
| Program: Command and Control | | |
| Primary Point of Contact: | | |
| Phil Canter | | |
| Overview: | | |
| Provide geographic support to Command and Control for specific incidents. Used for significant weather events or extraordinary criminal incident. | | |
| Funding: | | |
| There is no external funding for this program. | | |
| Mandates: | | |
| There are no GIS-related mandates associated with this program. | | |
| Political Benefits: | | |
| There are no political benefits associated with using GIS for this program. | | |
| Social Benefits: | | |
| GIS helps saves lives by predicting flooding & being able to warn citizens early. GIS was used to track & find Palzinski. GIS helps communication between agencies by providing maps of areas. | | |
| Products/Services: | | |
| <ul style="list-style-type: none"> • Maps | | |
| Customers: | | |
| <ul style="list-style-type: none"> • Office of Substance Abuse • Office of Planning • Office of Community Conservation • Local Management Board • Health Department | | |
| Data (Enterprise Layers are Listed in Bold): | | |
| <ul style="list-style-type: none"> • AddressPoints (View) • County Boundary • Department of Correction Releases • Land Use 2002 • Landuse • Parole and Probation Residence Locations • Police Precincts • Police Reporting Areas • Police Stations | <ul style="list-style-type: none"> • Roads • Street Centerlines • Tax Parcel • Buildings • Cell Tower Sectors • Cell Towers • FEMA Maps • Flood Insurance Maps (FEMA) • Forest Cover – 1996 & 2000 • Orthophoto (2005) | <ul style="list-style-type: none"> • Polling Places • Post Offices • Pumping Stations • Railroads • Regional Road Centerline (City and surrounding jurisdictions) • Rural Waters • Streams and Ponds • Synagogues • Transmission Lines |



| Applications Used: | | | | | | | | | | | | | | | | | |
|---|----------------------|------------|------------------------------|-----------------------------|---|------------------------------|----------------------|------------|------------------------------|-----------------------------|---|-----|---|-----|---|-----|-----|
| <ul style="list-style-type: none"> • ArcGIS (Standard) • ESRI Extensions • Map Info | | | | | | | | | | | | | | | | | |
| Associated Activities: | | | | | | | | | | | | | | | | | |
| None | | | | | | | | | | | | | | | | | |
| Process with GIS: | | | | | | | | | | | | | | | | | |
| Maps are created within GIS to show various geographic phenomenon to support the needs of the command and control center. These maps are made as on an as-needed basis, as incidents occur. | | | | | | | | | | | | | | | | | |
| Process without GIS: | | | | | | | | | | | | | | | | | |
| This process would not be done without GIS, since these events require maps to be produced rapidly. | | | | | | | | | | | | | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • High | | | | | | | | | | | | | | | | | |
| Benefits to Using GIS for this Activity: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • GIS allows for maps to be created in a timely fashion. • GIS data allows for users to understand the geographic distribution of features that could not be done with hardcopy maps, allowing for greater spatial analysis and problem solving. • Facilitates agency coordination. | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Staff Hours w/o GIS (Manual)</th> <th>Staff Hours with GIS</th> <th>Difference</th> <th>Annual # Iterations Per Year</th> <th>Total Hours Saved Using GIS</th> <th>Annual Time Savings Benefit (Based on \$33.95/hr)</th> </tr> </thead> <tbody> <tr> <td>N/A</td> <td>6</td> <td>N/A</td> <td>1</td> <td>N/A</td> <td>N/A</td> </tr> </tbody> </table> | | | | | | Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | N/A | 6 | N/A | 1 | N/A | N/A |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | | | | | | | | | | | | |
| N/A | 6 | N/A | 1 | N/A | N/A | | | | | | | | | | | | |
| Annual Benefit: N/A (There are no benefits gained from using GIS in this activity, since the task could not be performed without GIS). | | | | | | | | | | | | | | | | | |
| Areas for Improvement: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • The WAN connection speed could be increased so that the DataQuery application and associated data could be used more. This would save time and money spent using the DataQuery application. This would also allow for better access to existing GIS data. • More ESRI enterprise licenses could be made available from OIT. Currently the agency is not able to procure all of the licenses that it needs at one time. Providing additional licenses would allow all personnel within the agency to use GIS and see associated benefits. | | | | | | | | | | | | | | | | | |
| New Opportunities: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • Real-time data is of utmost importance to this activity. Some real-time datasets are provided by federal and state governments as web mapping services, which are continually updated and accessible. These services could be incorporated into a county web mapping site, or could be used within ArcGIS to create maps from real-time data. This would save time and money spent tracking these datasets down when an event occurs. | | | | | | | | | | | | | | | | | |



Benefits of Pursuing New Opportunities:

- GIS could help save time and money spent acquiring real-time datasets.



4.4 Homeland Security

| |
|---|
| Program: Homeland Security |
| Primary Point of Contact: |
| Phil Canter |
| Overview: |
| This program provides geographic support to police personnel involved in Homeland Security. Maps are made that include aerial photographs, building footprints, and highway networks. GIS supports Homeland Security exercises and assists in disaster prediction and producing "dignitary protection" maps. They also provide some support to our Homeland Security operations in the form of maps and aerial photographs that are used for drills and exercise. |
| Funding: |
| There is no external funding for this program. |
| Mandates: |
| There are no GIS-related mandates associated with this program. |
| Political Benefits: |
| There are no political benefits associated with using GIS for this program. |
| Social Benefits: |
| GIS aids in Homeland Security. GIS helps communication between agencies by providing maps of areas. |
| Products/Services: |
| <ul style="list-style-type: none"> • Maps |
| Customers: |
| <ul style="list-style-type: none"> • Office of Substance Abuse • Office of Planning • Office of Community Conservation • Local Management Board • Health Department • Department of Homeland Security |



| | | | | | |
|---|----------------------|--|------------------------------|---|---|
| Data (Enterprise Layers are Listed in Bold): | | | | | |
| <ul style="list-style-type: none"> • AddressPoints (View) • Buildings • Cell Tower Sectors • Cell Towers • Communication Towers • County Boundary • Dams • FEMA Maps • Flood Insurance Maps (FEMA) • Land Use 2002 • Landuse | | <ul style="list-style-type: none"> • Light Rail • Orthophoto (2005) • Parole and Probation Residence Locations • Pipelines • Police Precincts • Police Reporting Areas • Police Stations • Polling Places • Post Offices • Pumping Stations | | <ul style="list-style-type: none"> • Railroads • Regional Road Centerline (City and surrounding jurisdictions) • Roads • Rural Waters • Streams and Ponds • Street Centerlines • Synagogues • Tax Parcel • Transmission Lines | |
| Applications Used: | | | | | |
| <ul style="list-style-type: none"> • ArcGIS (Standard) • ArcIMS • ArcIMS MyNeighborhood • Map Info | | | | | |
| Associated Activities: | | | | | |
| None | | | | | |
| Process with GIS: | | | | | |
| GIS applications and data are used to create maps, which are given to DHS. | | | | | |
| Process without GIS: | | | | | |
| Hardcopy maps would need to be gathered and copied and pasted to create a map of the area of interest. | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | |
| <ul style="list-style-type: none"> • High | | | | | |
| Benefits to Using GIS for this Activity: | | | | | |
| <ul style="list-style-type: none"> • GIS saves time and money spent creating maps. | | | | | |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) |
| 100 | 25 | 74 | 1 | 75 | \$2,546.25 |
| Annual Benefit: N/A | | | | | |
| Areas for Improvement: | | | | | |
| None determined. | | | | | |
| New Opportunities: | | | | | |
| <ul style="list-style-type: none"> • Building datasets could be attributed with heights, allowing for line of sight analysis to be performed and mapped. This would help position teams for dignitary protection. | | | | | |



Benefits of Pursuing New Opportunities:

- GIS could provide a better understanding of the landscape surrounding events.



4.5 Public Safety Indicators

| | | |
|--|---|---|
| Program: Public Safety Indicators | | |
| Primary Point of Contact: | | |
| Phil Canter | | |
| Overview: | | |
| Produced quarterly, analysts provide maps showing communities experiencing high amounts of violent crime, maintenance of order calls for service, drug arrests, and juvenile offender place of residence. A composite map showing all four indicators is also produced. Information is used for Strategic Planning programs, community policing, and outreach programs. All maps are maintained in RCAGIS. | | |
| Funding: | | |
| There is no external funding for this program. | | |
| Mandates: | | |
| There are no GIS-related mandates associated with this program. | | |
| Political Benefits: | | |
| There are no political benefits associated with using GIS for this program. | | |
| Social Benefits: | | |
| GIS helps identify communities in need of more public safety measures. | | |
| Products/Services: | | |
| <ul style="list-style-type: none"> • Maps | | |
| Customers: | | |
| <ul style="list-style-type: none"> • Office of Substance Abuse • Office of Planning • Office of Community Conservation • Local Management Board • Health Department • Department of Homeland Security | | |
| Data (Enterprise Layers are Listed in Bold): | | |
| <ul style="list-style-type: none"> • AddressPoints (View) • Census Block Groups (2000) • Census Blocks (2000) • Census Designated Place (2000) • Census Tracts (2000) • Community Associations • County Boundary | <ul style="list-style-type: none"> • Community Conservation Sectors • Department of Correction Releases • Orthophoto (2005) • Parcel Based Landuse • Parole and Probation Residence Locations | <ul style="list-style-type: none"> • Police Precincts • Police Reporting Areas • Police Stations • Roads • Street Centerlines • Tax Parcel |



| Applications Used: | | | | | | | | | | | | | | | | | |
|--|----------------------|------------|------------------------------|-----------------------------|---|------------------------------|----------------------|------------|------------------------------|-----------------------------|---|-----|----|-----|---|------|--------------|
| <ul style="list-style-type: none"> • ArcGIS (Standard) • ESRI Extensions • Map Info • CrimeStat | | | | | | | | | | | | | | | | | |
| Associated Activities: | | | | | | | | | | | | | | | | | |
| None | | | | | | | | | | | | | | | | | |
| Process with GIS: | | | | | | | | | | | | | | | | | |
| Data for each of the four indicators are geocoded to give a location of each occurrence. These are aggregated to a police reporting area, giving a total count for each indicator for each area. Maps and reports are produced presenting the result of the analysis. | | | | | | | | | | | | | | | | | |
| Process without GIS: | | | | | | | | | | | | | | | | | |
| The locations of incidents would need to be manually located on a hardcopy map. These points would have to then be counted for each police reporting area. Hardcopy maps would need to be gathered and copied and pasted to create a map of the area of interest. | | | | | | | | | | | | | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • High | | | | | | | | | | | | | | | | | |
| Benefits to Using GIS for this Activity: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • GIS saves time and money spent creating maps. | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Staff Hours w/o GIS (Manual)</th> <th>Staff Hours with GIS</th> <th>Difference</th> <th>Annual # Iterations Per Year</th> <th>Total Hours Saved Using GIS</th> <th>Annual Time Savings Benefit (Based on \$33.95/hr)</th> </tr> </thead> <tbody> <tr> <td>320</td> <td>40</td> <td>280</td> <td>4</td> <td>1120</td> <td>\$ 38,024.00</td> </tr> </tbody> </table> | | | | | | Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | 320 | 40 | 280 | 4 | 1120 | \$ 38,024.00 |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | | | | | | | | | | | | |
| 320 | 40 | 280 | 4 | 1120 | \$ 38,024.00 | | | | | | | | | | | | |
| Annual Benefit: \$ 38,024.00 | | | | | | | | | | | | | | | | | |
| Areas for Improvement: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • None noted | | | | | | | | | | | | | | | | | |
| New Opportunities: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • An address validation and correction software package could help improve the geocoding operations. A lot of time is currently spent correcting addresses so that they can be properly geocoded. A software package that validated these addresses against a master address list would automate this process, saving time an money | | | | | | | | | | | | | | | | | |
| Benefits of Pursuing New Opportunities: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • GIS could save time and money spent geocoding. | | | | | | | | | | | | | | | | | |



4.6 Scanning and Forecasting

| |
|---|
| Program: Scanning and Forecasting |
| Primary Point of Contact: |
| Phil Canter |
| Overview: |
| Analysts monitor internal and external factors that directly/indirectly influence Department's ability to deliver police service. |
| Funding: |
| A grant of \$100,000 was provided for the Community Profile Map. |
| Mandates: |
| There are no GIS-related mandates associated with this program. |
| Political Benefits: |
| None determined. |
| Social Benefits: |
| Post-Car Realignment improves officer safety by equalizing workload. GIS provides a platform by which communications with outside agencies is enhanced. |
| Products/Services: |
| <ul style="list-style-type: none"> • Maps |
| Customers: |
| <ul style="list-style-type: none"> • Office of Substance Abuse • Office of Planning • Office of Community Conservation • Local Management Board • Health Department • Operations Unit • Citizens |



| | | |
|---|--|---|
| <p>Data (Enterprise Layers are Listed in Bold):</p> | | |
| <ul style="list-style-type: none"> • AddressPoints (View) • Buildings • Census Block Groups (1990) • Census Block Groups (2000) • Census Blocks (1990) • Census Blocks (2000) • Census Designated Place (1990) • Census Designated Place (2000) • Census Tracts (1990) • Census Tracts (2000) • Commercial Revitalization Districts • Community Associations • Community Conservation Sectors • Congressional Districts (2002) • Councilmanic Districts (2002) • County Boundary • Department of Correction Releases • Development Plans • Enterprise Zones • Fast Food Locations • FEMA Maps • Flood Insurance Maps (FEMA) | <ul style="list-style-type: none"> • Forest Cover – 1996 & 2000 • Land Use 1994 • Land Use 1997 • Land Use 1998 • Land Use 2002 • Landuse • Light Rail • Liquor Store License Locations • Metropolitan District Line • Orthophoto (2002) • Orthophoto (2005) • PAL Centers • Parcel Based Landuse • Parole and Probation Residence Locations • Playgrounds • Police Precincts • Police Reporting Areas • Police Posts • Police CSAFE Areas • Police Public Safety Initiative Areas (PSI) • Police Business Patrol Initiative Areas (BPI) • Police Stations | <ul style="list-style-type: none"> • Proposed Land Use • Regional Planning Districts • Regional Road Centerline (City and surrounding jurisdictions) • Registered Sex Offenders • Registered Child Sex Offenders • Renaissance Opportunity Areas • Residential Building Activity • Roads • Rural Waters • School Districts - Elementary • School Districts - High • School Districts - Middle • Schools—Point Location • Streams and Ponds • Street Centerlines • Tax Parcel • Traffic Analysis Zones • Urban Rural Demarcation Line (URDL) • Zip Codes • Zoning • Zoning Overlay Districts |
| <p>Applications Used:</p> <ul style="list-style-type: none"> • ArcGIS (Standard) • ArcIMS • ESRI Extensions • Map Info • CrimeStat • GeoDa | | |
| <p>Associated Activities:</p> <p>4.6.1 Scanning and Forecasting - Demographic/Socioeconomic Community Profiles</p> <p>4.6.2 Scanning and Forecasting - Metropolitan District Maps</p> <p>4.6.3 Scanning and Forecasting - Post Car Realignment Studies</p> <p>4.6.4 Scanning and Forecasting - Response Time Studies</p> <p>4.6.5 Scanning and Forecasting - Workload Analysis</p> | | |



4.6.1 Scanning and Forecasting - Demographic/Socioeconomic Community Profiles

| | | | | | |
|--|----------------------|------------|------------------------------|-----------------------------|---|
| Activity: Scanning and Forecasting - Demographic/Socioeconomic Community Profiles | | | | | |
| Primary Point of Contact: | | | | | |
| Phil Canter | | | | | |
| Overview: | | | | | |
| Analysts express crime in relation to opportunity or risk measures, in order to get an understanding the causes of crimes. Population and housing are typically used, but there are situations that require demographic subsets such as the number of males age 15-24 years old. | | | | | |
| Interviewee(s) Providing Information: | | | | | |
| Phil Canter; Sam Helms; Wenjuan Lu; Tricia Ambergey | | | | | |
| Process with GIS: | | | | | |
| GIS is used to re-aggregate Census data and projections to police precincts to provide commanders with a profile of their service areas. Census data is also used to develop risk indexes at the block group level for strategic planning purposes. GIS is used to map these features to display the risk indices. | | | | | |
| Process without GIS: | | | | | |
| Data would have to be used within a relational database, and disaggregated based on percentage of area calculations. These results would have to be mapped on hardcopy maps and symbolized appropriately. | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | |
| <ul style="list-style-type: none"> • High | | | | | |
| Benefits to Using GIS for this Activity: | | | | | |
| <ul style="list-style-type: none"> • GIS helps understand how crime is associated with opportunity or risk measures. • GIS helps save time and money spent producing maps. | | | | | |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) |
| 160 | 40 | 120 | 4 | 480 | \$16,296.00 |
| Annual Benefit: \$16,296.00 | | | | | |
| Areas for Improvement: | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | |
| New Opportunities: | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | |
| Benefits of Pursuing New Opportunities: | | | | | |
| <ul style="list-style-type: none"> • N/A | | | | | |



4.6.2 Scanning and Forecasting - Metropolitan District Maps

| Activity: Scanning and Forecasting - Metropolitan District Maps | | | | | | | | | | | | | | | | | |
|---|----------------------|------------|------------------------------|-----------------------------|---|------------------------------|----------------------|------------|------------------------------|-----------------------------|---|----|---|----|---|----|----------|
| Primary Point of Contact: | | | | | | | | | | | | | | | | | |
| Phil Canter | | | | | | | | | | | | | | | | | |
| Overview: | | | | | | | | | | | | | | | | | |
| Baltimore County Code, Title 2, Firearms and Weapons, Paragraph 17-2-101 mandates that accurate maps are posted that show metropolitan district line in all precincts, county courthouse, and substations throughout the county. | | | | | | | | | | | | | | | | | |
| Interviewee(s) Providing Information: | | | | | | | | | | | | | | | | | |
| Phil Canter; Sam Helms; Wenjuan Lu; Tricia Ambergey | | | | | | | | | | | | | | | | | |
| Process with GIS: | | | | | | | | | | | | | | | | | |
| GIS is used to create each map. The metropolitan district boundary file is provided by Public Works, which is superimposed on small scale basemaps for each precinct. | | | | | | | | | | | | | | | | | |
| Process without GIS: | | | | | | | | | | | | | | | | | |
| Hardcopy maps would need to be gathered and copied and pasted to create a map of the area of interest. | | | | | | | | | | | | | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • High | | | | | | | | | | | | | | | | | |
| Benefits to Using GIS for this Activity: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • GIS helps save time and money spent producing maps. | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Staff Hours w/o GIS (Manual)</th> <th>Staff Hours with GIS</th> <th>Difference</th> <th>Annual # Iterations Per Year</th> <th>Total Hours Saved Using GIS</th> <th>Annual Time Savings Benefit (Based on \$33.95/hr)</th> </tr> </thead> <tbody> <tr> <td>20</td> <td>5</td> <td>15</td> <td>1</td> <td>15</td> <td>\$509.25</td> </tr> </tbody> </table> | | | | | | Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | 20 | 5 | 15 | 1 | 15 | \$509.25 |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | | | | | | | | | | | | |
| 20 | 5 | 15 | 1 | 15 | \$509.25 | | | | | | | | | | | | |
| Annual Benefit: \$509.25 | | | | | | | | | | | | | | | | | |
| Areas for Improvement: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | | | | | | | | | | | | | |
| New Opportunities: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • Metropolitan District Maps could be served as a PDF or through a web mapping service over the internet. • The Metropolitan District GIS layer would save this activity time spent cleaning up this map. | | | | | | | | | | | | | | | | | |
| Benefits of Pursuing New Opportunities: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • GIS could save time and money spent compiling maps. | | | | | | | | | | | | | | | | | |



4.6.3 Scanning and Forecasting - Post Car Realignment Studies

| | | | | | |
|---|----------------------|------------|------------------------------|-----------------------------|---|
| Activity: Scanning and Forecasting - Post Car Realignment Studies | | | | | |
| Primary Point of Contact: | | | | | |
| Phil Canter | | | | | |
| Overview: | | | | | |
| Analysts review patrol workload by time of day and redistrict posts as needed, with the objective of equally distributing service demand. | | | | | |
| Interviewee(s) Providing Information: | | | | | |
| Phil Canter; Sam Helms; Wenjuan Lu; Tricia Ambergey | | | | | |
| Process with GIS: | | | | | |
| GIS is used to determine where the patrols have been located by time of day. These are used to determine where new boundaries should be drawn. | | | | | |
| Process without GIS: | | | | | |
| Various maps would need to be gathered. These maps would need to be copied and pasted to cover the area of interest. The location of the patrol would need to be plotted on hardcopy maps. Boundaries of new districts would also need to be drawn on the maps. | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | |
| <ul style="list-style-type: none"> • High | | | | | |
| Benefits to Using GIS for this Activity: | | | | | |
| <ul style="list-style-type: none"> • GIS helps understand how crime is associated with opportunity or risk measures. • GIS helps save time and money spent producing maps. | | | | | |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) |
| 630 | 60 | 570 | 1 | 570 | \$19,352.00 |
| Annual Benefit: \$19,352.00 | | | | | |
| Areas for Improvement: | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | |
| New Opportunities: | | | | | |
| <ul style="list-style-type: none"> • A redistricting program would help determine how new district boundaries should be drawn. This software could take the patrol information as an input and find the optimal district boundaries that evenly distributed service across an area. This could save time spent formulating the boundaries for new districts. | | | | | |



Benefits of Pursuing New Opportunities:

- GIS could save time and money spent creating district data.
- GIS could help find the optimal patrol distribution.



4.6.4 Scanning and Forecasting - Response Time Studies

| Activity: Scanning and Forecasting - Response Time Studies | | | | | | | | | | | | | | | | | |
|---|----------------------|------------|------------------------------|-----------------------------|---|------------------------------|----------------------|------------|------------------------------|-----------------------------|---|-----|----|----|---|----|------------|
| Primary Point of Contact: | | | | | | | | | | | | | | | | | |
| Phil Canter | | | | | | | | | | | | | | | | | |
| Overview: | | | | | | | | | | | | | | | | | |
| Analysts compute police response times for high priority calls and identify areas having excessive times. This usually results in a reconfiguration of police posts. | | | | | | | | | | | | | | | | | |
| Interviewee(s) Providing Information: | | | | | | | | | | | | | | | | | |
| Phil Canter; Sam Helms; Wenjuan Lu; Tricia Ambergey | | | | | | | | | | | | | | | | | |
| Process with GIS: | | | | | | | | | | | | | | | | | |
| GIS is used to make maps showing the location of high-priority calls. | | | | | | | | | | | | | | | | | |
| Process without GIS: | | | | | | | | | | | | | | | | | |
| A statistical package would be used to determine where there are excessive response times. The adjustments to police post boundaries would need to be done manually and drawn on hardcopy maps. | | | | | | | | | | | | | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • High | | | | | | | | | | | | | | | | | |
| Benefits to Using GIS for this Activity: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • GIS helps save time and money spent producing maps. | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Staff Hours w/o GIS (Manual)</th> <th>Staff Hours with GIS</th> <th>Difference</th> <th>Annual # Iterations Per Year</th> <th>Total Hours Saved Using GIS</th> <th>Annual Time Savings Benefit (Based on \$33.95/hr)</th> </tr> </thead> <tbody> <tr> <td>112</td> <td>28</td> <td>84</td> <td>1</td> <td>84</td> <td>\$2,851.80</td> </tr> </tbody> </table> | | | | | | Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | 112 | 28 | 84 | 1 | 84 | \$2,851.80 |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | | | | | | | | | | | | |
| 112 | 28 | 84 | 1 | 84 | \$2,851.80 | | | | | | | | | | | | |
| Annual Benefit: \$2,851.80 | | | | | | | | | | | | | | | | | |
| Areas for Improvement: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | | | | | | | | | | | | | |
| New Opportunities: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | | | | | | | | | | | | | |
| Benefits of Pursuing New Opportunities: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | | | | | | | | | | | | | |



4.6.5 Scanning and Forecasting - Workload Analysis

| Activity: Scanning and Forecasting - Workload Analysis | | | | | | | | | | | | | | | | | |
|--|----------------------|------------|------------------------------|-----------------------------|---|------------------------------|----------------------|------------|------------------------------|-----------------------------|---|-----|----|----|---|----|------------|
| Primary Point of Contact: | | | | | | | | | | | | | | | | | |
| Phil Canter | | | | | | | | | | | | | | | | | |
| Overview: | | | | | | | | | | | | | | | | | |
| This activity computes the workload for patrol officers staffing cars and assigned posts. | | | | | | | | | | | | | | | | | |
| Interviewee(s) Providing Information: | | | | | | | | | | | | | | | | | |
| Phil Canter; Sam Helms; Wenjuan Lu; Tricia Ambergey | | | | | | | | | | | | | | | | | |
| Process with GIS: | | | | | | | | | | | | | | | | | |
| Analysts use The 911 Center CAD data to compute workload for patrol officers staffing cars and assigned posts. Service demand is aggregated to reporting areas and posts, and thematically mapped. Anomalies are identified and corrected by realigning post boundaries. | | | | | | | | | | | | | | | | | |
| Process without GIS: | | | | | | | | | | | | | | | | | |
| Analysis would be completed using a standard statistical package and database software, but results would be presented in tabular format. Adjustments to police post boundaries, primary and back up unit assignments a result of excessive workload would also be completed manually. Any changes in police posts and/or reporting area boundaries would need to be related to a centerline file for dispatch purposes. | | | | | | | | | | | | | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • High | | | | | | | | | | | | | | | | | |
| Benefits to Using GIS for this Activity: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • GIS helps save time and money spent producing maps. • GIS allows for more accurate spatial data to be produced. | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Staff Hours w/o GIS (Manual)</th> <th>Staff Hours with GIS</th> <th>Difference</th> <th>Annual # Iterations Per Year</th> <th>Total Hours Saved Using GIS</th> <th>Annual Time Savings Benefit (Based on \$33.95/hr)</th> </tr> </thead> <tbody> <tr> <td>128</td> <td>32</td> <td>96</td> <td>1</td> <td>96</td> <td>\$3,259.00</td> </tr> </tbody> </table> | | | | | | Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | 128 | 32 | 96 | 1 | 96 | \$3,259.00 |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | | | | | | | | | | | | |
| 128 | 32 | 96 | 1 | 96 | \$3,259.00 | | | | | | | | | | | | |
| Annual Benefit: \$3,259.00 | | | | | | | | | | | | | | | | | |
| Areas for Improvement: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | | | | | | | | | | | | | |
| New Opportunities: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | | | | | | | | | | | | | |



Benefits of Pursuing New Opportunities:

- None determined.



4.7 Tactical Crime Analysis

| |
|--|
| Program: Tactical Crime Analysis |
| Primary Point of Contact: |
| Phil Canter |
| Overview: |
| Crime has a geographic component that is often one of the first known attributes of an incident. Analysts map incident locations, recovery locations, offender place of residence, and other geographic information that may relate to a crime pattern or series. |
| Funding: |
| A grant of \$100,000 was provided for the Community Profile Map. |
| Mandates: |
| There are no GIS-related mandates associated with this program. |
| Political Benefits: |
| There are significant political benefits to this program. Areas experiencing elevated levels of crime are intensively targeted for crime mitigation. Reductions in crime in these areas have beneficial effects on surrounding communities. There exists a direct relationship between decreasing crime and improvements in quality of life. |
| Social Benefits: |
| GIS enhances communication with outside agencies and helps officers position themselves closer to accident-prone areas. |
| Products/Services: |
| <ul style="list-style-type: none"> • DUI, fatality, and accident maps • Geocoded data |
| Customers: |
| <ul style="list-style-type: none"> • Office of Substance Abuse • Office of Planning • Office of Community Conservation • Local Management Board • Health Department |



| | | |
|---|--|--|
| Data (Enterprise Layers are Listed in Bold): | | |
| <ul style="list-style-type: none"> • AddressPoints (View) • Buildings • Cell Towers • Census Blocks (2000) • Census Designated Place (2000) • Census Tracts (2000) • Commercial Revitalization Districts • Communication Towers • Community Associations • County Boundary • Department of Correction Releases • Development Plans • Fast Food Locations • FEMA Maps | <ul style="list-style-type: none"> • Flood Insurance Maps (FEMA) • Land Use 2002 • Landuse • Light Rail • Liquor Store License Locations • Orthophoto (2002) • Orthophoto (2005) • Parcel Based Landuse • Parks and Recreation • Parole and Probation Residence Locations • Playgrounds • Police Precincts • Police Reporting Areas | <ul style="list-style-type: none"> • Police Posts • Police CSAFE Areas • Police Business Patrol Initiative Areas (BPI) • Police Stations • Regional Road Centerline (City and surrounding jurisdictions) • Registered Sex Offenders • Registered Child Sex Offenders • Residential Building Activity • Roads • Street Centerlines • Synagogues • Tax Parcel • Warrants |
| Applications Used: | | |
| <ul style="list-style-type: none"> • ArcGIS (Standard) • Map Info • CrimeStat | | |
| Associated Activities: | | |
| <p>4.7.1 Tactical Crime Analysis - Regional Crime Analysis Geographic Information System (RCAGIS)</p> <p>4.7.2 Tactical Crime Analysis - Crime Hot Spot Maps</p> <p>4.7.3 Tactical Crime Analysis - Offender Activity Space Probability Surface Maps</p> <p>4.7.4 Tactical Crime Analysis - Crime Activity Maps</p> <p>4.7.5 Tactical Crime Analysis - Offender Travel Routes</p> | | |



4.7.1 Tactical Crime Analysis - Regional Crime Analysis Geographic Information System (RCAGIS)

| | | | | | |
|--|----------------------|------------|------------------------------|-----------------------------|---|
| Activity: Tactical Crime Analysis - Regional Crime Analysis Geographic Information System (RCAGIS) | | | | | |
| Primary Point of Contact: | | | | | |
| Phil Canter | | | | | |
| Overview: | | | | | |
| The Regional Crime Analysis was GIS application designed by US DOJ and Baltimore County Police. This application is used by analysts, police officers, and command staff to produce maps showing locations of crimes, recovery locations, and offender place of residences. CrimeStat is used to perform spatial analysis. | | | | | |
| Interviewee(s) Providing Information: | | | | | |
| Phil Canter; Carl Koprowicz; Chad Cameron; Gennet Medhin | | | | | |
| Process with GIS: | | | | | |
| Maps are compiled with GIS for various types of crimes or other point locations. Basemap data and statistical units are included in these maps. | | | | | |
| Process without GIS: | | | | | |
| Various maps would need to be gathered. These maps would need to be copied and pasted to cover the area of interest. Each crime location would need to be manually plotted on a hardcopy map. | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | |
| <ul style="list-style-type: none"> • High | | | | | |
| Benefits to Using GIS for this Activity: | | | | | |
| <ul style="list-style-type: none"> • GIS helps personnel understand the spatial characteristics of crime locations, recovery locations, and offender place of residences, aiding in prevention, mitigation, and detection of these events. • GIS saves time and money spent on data creation, map compilation, and analysis. | | | | | |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) |
| 12 | 3 | 9 | 260 | 2340 | \$79,443.00 |
| Annual Benefit: \$79,443.00 | | | | | |
| Areas for Improvement: | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | |



New Opportunities:

- An address validation and correction software package could help improve the geocoding operations. A lot of time is currently spent correcting addresses so that they can be properly geocoded. A software package that validated these addresses against a master address list would automate this process, saving time and money
- Design a new, Web based application that would allow broader distribution of application without need to purchase additional Arc licenses

Benefits of Pursuing New Opportunities:

- GIS could save time and money spent geocoding.



4.7.2 Tactical Crime Analysis - Crime Activity Maps

| Activity: Tactical Crime Analysis - Crime Activity Maps | | | | | | | | | | | | | | | | | |
|--|----------------------|------------|------------------------------|-----------------------------|---|------------------------------|----------------------|------------|------------------------------|-----------------------------|---|----|---|----|----|-----|-------------|
| Primary Point of Contact: | | | | | | | | | | | | | | | | | |
| Phil Canter | | | | | | | | | | | | | | | | | |
| Overview: | | | | | | | | | | | | | | | | | |
| Analysts geocode all tactical crime locations. Points are examined for the presence of a crime pattern or crime series. Attributes associated with point locations include modus operandi, dates, times, and suspect information. Coordinates are used for RCAGIS, but analysts will also use GIS programs to explore point distributions. | | | | | | | | | | | | | | | | | |
| Interviewee(s) Providing Information: | | | | | | | | | | | | | | | | | |
| Phil Canter; Carl Koprowicz; Chad Cameron; Gennet Medhin | | | | | | | | | | | | | | | | | |
| Process with GIS: | | | | | | | | | | | | | | | | | |
| Addresses of tactical crime locations are geocoded, giving the location of these incidents as X, Y coordinates. These points are used to analyze the distribution of tactical crimes, as well as create maps for visualization purposes. | | | | | | | | | | | | | | | | | |
| Process without GIS: | | | | | | | | | | | | | | | | | |
| Various maps would need to be gathered. These maps would need to be copied and pasted to cover the area of interest. Each crime location would need to be manually plotted on a hardcopy map. | | | | | | | | | | | | | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • High | | | | | | | | | | | | | | | | | |
| Benefits to Using GIS for this Activity: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • GIS helps personnel understand the spatial characteristics of incidents and complaints, aiding in prevention, mitigation, and detection of these events. • GIS saves time and money spent on data creation, map compilation, and analysis. | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Staff Hours w/o GIS (Manual)</th> <th>Staff Hours with GIS</th> <th>Difference</th> <th>Annual # Iterations Per Year</th> <th>Total Hours Saved Using GIS</th> <th>Annual Time Savings Benefit (Based on \$33.95/hr)</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>2</td> <td>14</td> <td>52</td> <td>728</td> <td>\$24,715.60</td> </tr> </tbody> </table> | | | | | | Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | 16 | 2 | 14 | 52 | 728 | \$24,715.60 |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | | | | | | | | | | | | |
| 16 | 2 | 14 | 52 | 728 | \$24,715.60 | | | | | | | | | | | | |
| Annual Benefit: \$24,715.60 | | | | | | | | | | | | | | | | | |
| Areas for Improvement: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | | | | | | | | | | | | | |



New Opportunities:

- An address validation and correction software package could help improve the geocoding operations. A lot of time is currently spent correcting addresses so that they can be properly geocoded. A software package that validated these addresses against a master address list would automate this process, saving time and money.

Benefits of Pursuing New Opportunities:

- GIS could save time and money spent geocoding.



4.7.3 Tactical Crime Analysis - Crime Hot Spot Maps

| | | | | | |
|--|----------------------|------------|------------------------------|-----------------------------|---|
| Activity: Tactical Crime Analysis - Crime Hot Spot Maps | | | | | |
| Primary Point of Contact: | | | | | |
| Phil Canter | | | | | |
| Overview: | | | | | |
| Analysts identify areas having unusually high concentrations of crime. During the holiday season, similar maps are made from historical data, in order to determine where crimes during this time are likely to occur. Maps are produced for each command staff and for specialized units. This information is used for directed patrol, field contacts, traffic stops, and resource deployment. | | | | | |
| Interviewee(s) Providing Information: | | | | | |
| Phil Canter; Carl Koprowicz; Chad Cameron; Gennet Medhin | | | | | |
| Process with GIS: | | | | | |
| CrimeStat is used to produce a Nearest Neighbor Hierarchical Cluster routines on different types of crime data. A surface is produced and compiled on a map that is used to visualized where hotspots of different types of crime are. ArcGIS spatial analyst extension used to produce kernel density surface maps to identify crime hot spots. | | | | | |
| Process without GIS: | | | | | |
| Various maps would need to be gathered. These maps would need to be copied and pasted to cover the area of interest. Each crime location would need to be manually plotted on a hardcopy map. Interpolation methods would need to be performed to find hotspots on maps by manually measuring the distances between points. | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | |
| <ul style="list-style-type: none"> • High | | | | | |
| Benefits to Using GIS for this Activity: | | | | | |
| <ul style="list-style-type: none"> • GIS helps personnel understand the spatial characteristics crime, aiding in prevention, mitigation, and detection of these events. • GIS saves time and money spent on data creation, map compilation, and analysis. | | | | | |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) |
| 704 | 88 | 616 | 1 | 616 | \$20,913.20 |
| Annual Benefit: \$20,913.20 | | | | | |
| Areas for Improvement: | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | |



New Opportunities:

- Spatial-temporal models could be used to determine the change in crime over time. These models, based off of methods such as cellular automata or agent based modeling, could determine how crime is moving across geographical space over time. Types of mitigation strategies could be incorporated into these models to understand how crime might be influenced as these are introduced.

Benefits of Pursuing New Opportunities:

- GIS could give an understanding of how crime is moving and how to manage this movement.



4.7.4 Tactical Crime Analysis - Offender Activity Space Probability Surface Maps

| | | | | | |
|---|----------------------|------------|------------------------------|-----------------------------|---|
| Activity: Tactical Crime Analysis - Offender Activity Space Probability Surface Maps | | | | | |
| Primary Point of Contact: | | | | | |
| Phil Canter | | | | | |
| Overview: | | | | | |
| This activity involves determining the activity space of a particular offender. Information is used for directed patrols, field contacts, surveillance, and resource deployment. | | | | | |
| Interviewee(s) Providing Information: | | | | | |
| Phil Canter; Carl Koprowicz; Chad Cameron; Gennet Medhin | | | | | |
| Process with GIS: | | | | | |
| CrimeStat's Journey to Crime routine is used to construct a probability surface of the area that represents the activity space of a criminal. This surface is mapped with relevant basemap data, in order to understand the area that the offender could be located in. Network analyst extension is used to identify potential travel routes of offenders. | | | | | |
| Process without GIS: | | | | | |
| Various maps would need to be gathered. These maps would need to be copied and pasted to cover the area of interest. The location of the crime and the offender's residence would need to be plotted on hardcopy maps. A model would need to be manually constructed on the hardcopy maps by measuring distances on the map. This method would not be as accurate as using GIS, since it could not handle many environmental variables. | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | |
| <ul style="list-style-type: none"> • High | | | | | |
| Benefits to Using GIS for this Activity: | | | | | |
| <ul style="list-style-type: none"> • GIS gives an accurate depiction of the mobility of an individual. • GIS saves time and money spent on data creation, map compilation, and analysis. | | | | | |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) |
| 64 | 8 | 56 | 3 | 168 | \$5,703.60 |
| Annual Benefit: \$5,703.60 | | | | | |
| Areas for Improvement: | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | |



New Opportunities:

- Various modes of transportation could be included in the analysis to give a better representation of the activity space of an individual. Mass transportation routes could be included as a dataset within the network. This could help give a better understanding of how transit influences an activity space.
Note: CrimeStat3 has a transportation model algorithm that allows multi-modal trip generation/assignment/distribution of offender travel. This application was used to predict and evaluate DUI travel behavior associated with traffic accidents in relation to varying interdiction strategies. Results presented at last year's TUGIS conference.

Benefits of Pursuing New Opportunities:

- GIS could give a better understanding of the areas that an individual could travel.



4.7.5 Tactical Crime Analysis - Offender Travel Routes

| | | | | | |
|--|----------------------|------------|------------------------------|-----------------------------|---|
| Activity: Tactical Crime Analysis - Offender Travel Routes | | | | | |
| Primary Point of Contact: | | | | | |
| Phil Canter | | | | | |
| Overview: | | | | | |
| This activity used GIS to show roadways that may be used by a serial offender. This information is used by Criminal Investigative Units and Patrol officers in response to a crime series. | | | | | |
| Interviewee(s) Providing Information: | | | | | |
| Phil Canter; Carl Koprowicz; Chad Cameron; Gennet Medhin | | | | | |
| Process with GIS: | | | | | |
| Analysts use Network Analyst to construct thematic maps of the roads that may be used by a serial offender. Link maps are superimposed offender activity space probability maps to improve prediction. | | | | | |
| A network algorithm is used to determine where to best situate one or a series of police, in order to cover the most roads with the available resources. | | | | | |
| Process without GIS: | | | | | |
| Various maps would need to be gathered. These maps would need to be copied and pasted to cover the area of interest. The location of the crime and the offender's residence would need to be plotted on hardcopy maps, along with the activity space model (assumed to have been created in the previous activity). The streets within the activity space would need to be manually symbolized. This would not be as accurate as the results with GIS. | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | |
| <ul style="list-style-type: none"> • High | | | | | |
| Benefits to Using GIS for this Activity: | | | | | |
| <ul style="list-style-type: none"> • GIS gives an accurate depiction of the mobility of an individual. • GIS saves time and money spent on data creation, map compilation, and analysis. • GIS helps improve allocation of resources. | | | | | |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) |
| 32 | 8 | 24 | 3 | 72 | \$2,444.40 |
| Annual Benefit: \$2,444.40 | | | | | |
| Areas for Improvement: | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | |



New Opportunities:

- None determined.

Benefits of Pursuing New Opportunities:

- None determined.



4.8 Traffic Stop Data Collection

| | | |
|---|--|--|
| Program: Traffic Stop Data Collection | | |
| Primary Point of Contact: | | |
| Phil Canter | | |
| Overview: | | |
| <p>This program is mandated by the State of Maryland (Article 25-113 Annotated Code) that results in the collection of driver demographics, and circumstances leading to and following the stop. Traffic stops are georeferenced to reporting areas and aggregated to posts. The department uses this information to determine the demographics associated with traffics stops for posts and officers. Data has been analyzed in response to allegations of racial or sexual profiling.</p> | | |
| Funding: | | |
| There is no external funding for this program. | | |
| Mandates: | | |
| There are no GIS-related mandates associated with this program. | | |
| Political Benefits: | | |
| There are no political benefits associated with using GIS for this program. | | |
| Social Benefits: | | |
| This program helps defend citizens against racial profiling. GIS provides a platform by which communications with outside agencies is enhanced. | | |
| Products/Services: | | |
| <ul style="list-style-type: none"> • Database of traffic stops • A summary statistical report that summarizes the overall characteristics and circumstances associated with drivers stopped by police for a moving violation. | | |
| Customers: | | |
| <ul style="list-style-type: none"> • Office of Substance Abuse • Office of Planning • Office of Community Conservation • Local Management Board • Health Department | | |
| Data (Enterprise Layers are Listed in Bold): | | |
| <ul style="list-style-type: none"> • AddressPoints (View) • Census Block Groups (2000) • Census Blocks (2000) • Census Designated Place (2000) • Census Tracts (2000) | <ul style="list-style-type: none"> • County Boundary • Police Precincts • Police Reporting Areas Police Posts • Police Stations • Regional Planning Districts | <ul style="list-style-type: none"> • Regional Road Centerline (City and surrounding jurisdictions) • Roads • Street Centerlines • Traffic Analysis Zones |



| Applications Used: | | | | | | | | | | | | | | | | | |
|---|----------------------|------------|------------------------------|-----------------------------|---|------------------------------|----------------------|------------|------------------------------|-----------------------------|---|-----|----|----|----|------|-------------|
| <ul style="list-style-type: none"> • ArcGIS (Standard) • Map Info • GeoDa | | | | | | | | | | | | | | | | | |
| Associated Activities: | | | | | | | | | | | | | | | | | |
| None | | | | | | | | | | | | | | | | | |
| Process with GIS: | | | | | | | | | | | | | | | | | |
| Traffic stop data is used within GIS to analyze the geographic distribution of traffic stops. GIS is used to select out traffic stops for different geographic areas, and for officers patrolling specific areas in Baltimore County. | | | | | | | | | | | | | | | | | |
| Process without GIS: | | | | | | | | | | | | | | | | | |
| The locations of incidents would need to be manually located on a hardcopy map. These points would have to be associated with relevant database attributes, and annotated or symbolized as necessary. | | | | | | | | | | | | | | | | | |
| Benefits Assessment: (H, M, L) Identify confidence level | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • High | | | | | | | | | | | | | | | | | |
| Benefits to Using GIS for this Activity: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • GIS saves time and money spent creating maps. | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Staff Hours w/o GIS (Manual)</th> <th>Staff Hours with GIS</th> <th>Difference</th> <th>Annual # Iterations Per Year</th> <th>Total Hours Saved Using GIS</th> <th>Annual Time Savings Benefit (Based on \$33.95/hr)</th> </tr> </thead> <tbody> <tr> <td>112</td> <td>28</td> <td>84</td> <td>12</td> <td>1008</td> <td>\$34,221.60</td> </tr> </tbody> </table> | | | | | | Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | 112 | 28 | 84 | 12 | 1008 | \$34,221.60 |
| Staff Hours w/o GIS (Manual) | Staff Hours with GIS | Difference | Annual # Iterations Per Year | Total Hours Saved Using GIS | Annual Time Savings Benefit (Based on \$33.95/hr) | | | | | | | | | | | | |
| 112 | 28 | 84 | 12 | 1008 | \$34,221.60 | | | | | | | | | | | | |
| Annual Benefit: \$34,221.60 | | | | | | | | | | | | | | | | | |
| Areas for Improvement: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • None determined. | | | | | | | | | | | | | | | | | |
| New Opportunities: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • An address validation and correction software package could help improve the geocoding operations. A lot of time is currently spent correcting addresses so that they can be properly geocoded. A software package that validated these addresses against a master address list would automate this process, saving time and money. • GPS could be used in the field to give the location of traffic stops. This would give a more accurate location of the events than are currently created, which would allow for more accurate analysis to be performed. This would save time spent by the analyst performing geocoding operations, since these coordinates could be ingested directly into the GIS. | | | | | | | | | | | | | | | | | |
| Benefits of Pursuing New Opportunities: | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> • GIS could save time and money spent geocoding. • GPS could save time and money spent creating spatial data. • GPS could give a more accurate location of spatial events. | | | | | | | | | | | | | | | | | |



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5 Short-form Online Questionnaires

Agency Police Department

Name Chad Cameron

Job Title Statistical Analyst

Briefly, what activity(s) do you perform within your department?

Maintain tactical crime database (RCAP). Identify crime trends. Produce Post Car Alerts and Crime Bulletins. Mapping. Suspect Lists. Geocoding. Maintain RCAGIS.

Approximately what percentage of your work week do you spend for each activity identified in question #8?

Maintain RCAP - 30% Identify Crime Trends - 20% Post Car Alerts and Crime Bulletins - 10%
Mapping - 30% Suspect Lists - 10%

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

Yes. Crime is mapped on a daily basis using our crime data and county GIS files.

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

Yes. For example our robberies are queried in GIS for 'type', 'MO', 'location', 'day of week' etc.
Our crime data is geocoded on a daily basis and imported in RCAGIS every day.

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

Yes. I use spatial analysis to determine high concentrations of robberies for the yearly Holiday Robbery Report.

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

Yes. Crime maps are generated on a daily basis. For every Crime Bulletin and Post Car Alert a hard map is produced.

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

No.

Do you perform any GIS data maintenance activities? If yes, please provide an example.

Just crime data.

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

Crime is mapped on a daily basis. In addition, at least one map is provided for every Post Car Alert and Crime Bulletin released. Maps are also produced for special requests, including aerial photos. Geocode crime data on a daily basis. Import into RCAGIS. GIS even plays a role in generating suspect lists.

What activities do you think could benefit from use of (or increased use of) GIS?

I think our patrol officers and commanders could benefit from an increased use and training in RCAGIS.

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.

GIS is used on a daily basis within this unit.



Agency Police Department

Name GENNET MEDHIN

Job Title STATISTICAL ANALYST

Briefly, what activity(s) do you perform within your department?

1.Maintain and update Rcap database 2. Identify and analyze crime patterns and trends
3.Generate Post car alerts and Crime Bulletins, 4. Generate maps using FoxPro or ArcGIS 5. Do Query using Access , FoxPro or ArcGIS.6. Prepare reports for the Weekly Trend Report and operations meeting 7.Identify and generate suspect lists 8. Communicate with detectives, police officers, the public and crime analysts in other jurisdictions

Approximately what percentage of your work week do you spend for each activity identified in question #8?

1.25% 2.15% 3.15% 4.10% 5.10% 6.10% 7.10% 8.5%

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

I use geographical layers, centerlines, databases to produce maps in arcGis.

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

I do queries on a daily basis to produce reports, identify trends or patterns.

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

I use the geocoding service to identify addresses or geocoding

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

Post car alerts Crime bulletins and crime location maps for e.g. Detectives,

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

crime data and/or maps are provided on the phone by giving the Baltimore County web site address or through the mail to the public. Crime bulletins, Post car alerts and crime data are also provided to other especially neighboring jurisdictions.

Do you perform any GIS data maintenance activities? If yes, please provide an example.

No

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

create maps for Post car alerts, bulletins, crime incident maps, geocode addresses, do queries

What activities do you think could benefit from use of (or increased use of) GIS?

Maintaing database

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.

ArcGis is being used on a daily basis in my team.We woud all benefit with more advanced training.



Agency Police Department

Name Kim Lankford

Job Title Statistical Analyst

Briefly, what activity(s) do you perform within your department?

a) Compile crime and calls for service numbers within the police dept. b) Produce various reports for reported crime and calls for service by geographic area.

Approximately what percentage of your work week do you spend for each activity identified in question #9?

a) 50% b) 50%

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

Yes, I use GIS data and databases daily. We geocode the location of each crime and each call for service. All of our reports are very geographically oriented.

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

Yes,

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

Yes, I geocode data regularly. All of our data is geographically oriented.

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

Both, I use aerial photographs that are in our computer system, I use several mapping layers, I also use the ADC book.

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

Yes, we provide data/reports to other agencies within the county and also to the public

Do you perform any GIS data maintenance activities? If yes, please provide an example.

no

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

Geocode our data. Make maps to show specific geographic areas. Make maps to show specific points.

What activities do you think could benefit from use of (or increased use of) GIS?

not sure

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.



Agency Police Department

Name Koprowicz, Carl

Job Title Statistical Supervisor

Briefly, what activity(s) do you perform within your department?

Ensure that projects are assigned appropriately and completed correctly. Produce reports when other analysts are not available. Instruct analysts how to process information in order to produce their reports. Complete Performance Evaluation, discuss performance with individual analysts, etc., etc. Too numerous to list!!

Approximately what percentage of your work week do you spend for each activity identified in question #9?

Too many functions to list. Sorry!

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

Yes! The word 'daily' is a deal breaker, here. The only thing that I can say I do daily is turn on my PC and read my e-mail. Often enough, I use orthophotos to identify whether targets being burglarized have similar features such as: 'end of unit' or 'backs up against woods.' Same goes for property maps.

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

With the caveat mentioned above regarding the word 'daily,' I query our databases to search for areas that are experiencing higher than normal criminal activity.

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

Geocoding is done by the CAU (Crime Analysis Team) daily, and almost daily by the SFU (Scanning and Forecasting Team) which provides reports to the executive officers and the public

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

I believe that Phil Canter, my boss, has already provided you with this very extensive list.

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

Upon request to other agencies, such as the Department of Social Services and Substance Abuse. The public is provided with reports including maps upon request.

Do you perform any GIS data maintenance activities? If yes, please provide an example.

I maintain a file of all addresses that are not geocodable due to bad spellings. I maintain a program that corrects for these bad spellings to facilitate the geocoding process.

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

Provide the public, other agencies, the Executive Corps of the Police Department, Community Outreach officers, the public with maps showing locations and relative distribution of police variables for which we have geographic information (crime, arrests, calls for service, population, demographics) as requested or required.

What activities do you think could benefit from use of (or increased use of) GIS?

Every time a request comes in we always consider whether GIS can be incorporated in the response. If it can be helpful in helping the requester understand the report, we include maps showing locations or relative frequencies.

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.

We simply could not perform the level of analysis we do without GIS.



Agency Police Department

Name Mark Demski

Job Title Lieutenant

Briefly, what activity(s) do you perform within your department?

Responsible for Mitigation, Preparation, Response and Recovery for natural and man made hazards

Approximately what percentage of your work week do you spend for each activity identified in question #9?

80 % is spent on planning and mitigation/ 10 % is response but number may increase during a crisis, 10 % recovery.

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

yes- may be asked to display number of residents in a certain geo area with number of county resources in that area. Currently have a map that that was GIS originated that displayed eastern baltimore county along with 100 and 500 year floodplains with census block info displayed. We also utilized a GIS produced map to show a chemical plant on a map with 1 mile increment rings to show demographics and census data along with high risk facilities in each

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

no

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

yes- but not every day. May frequently be asked to plan evacuation centers based upon proximity to storm surge and public schools

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

We utilize hardcopies for presentations and on display in the Emergency Operations Center for reference. We may also have the digital on display via lcd to the entire EOC group working a

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

Occasionally. We had GIS prepare a map of the Millers Island area to show the roads into and out of a isolated area. This map had an overlay of satellite view. The community association had this map to show to residents to review evacuation routes and obstacles

Do you perform any GIS data maintenance activities? If yes, please provide an example.

no

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

Maps with county infrastructure, identify schools, fire stations, hospitals, day cares, nursing homes etc. Place a polygon on map such as a tornado path and obtain census data so that proper planing may be conducted.

What activities do you think could benefit from use of (or increased use of) GIS?

In the EOC and community preparedness it is becoming obvious that GIS is very important. We will be placing into our Emergency Notification system. This will allow a polygon to be drawn on a map and a telephone dialer to call all residents located in polygon with a recorded message. Tracking of reported power outages, tracking of flu vicims, tracking of bioterrorism victims with closest Public Point of Distribution identified on the map.

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.

GIS has become a crucial element in Emergency Managment. The utilization of GIS is becoming more known each and every day. It has become something that we are relying upon more as we learn more about it. ring. crisis



Agency Police Department

Name Mike Leedy

Job Title Statistical Analyst

Briefly, what activity(s) do you perform within your department?

Data Entry, Programming, Quality Control, Database Maint., Mapping, Geocoding, Redistricting, Report Generation, Analysis of Crime and various other jobs as assigned.

Approximately what percentage of your work week do you spend for each activity identified in question #8?

About 100% if we include the 'other jobs as assigned.'

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

Yes Orthos and property maps are used to determine what type of location is involved when we have a crime. Orthos and Topo are used to create maps for the Tactical and Intel. Units.

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

Generally no, as our connection to the internet is tenuous. Most GIS layers are kept locally on our own servers.

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

All crimes entered into the Tactical Database are geocoded at the end of the day. Routing is sometimes used to determine possible routes used by offenders.

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

Crime location, arrestee home address, vehicle theft and vehicle recovery location are reviewed in ArcGIS and/or RCAGIS (a regional crime analysis geographic information system being developed by the Dept. of Justice.)

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

Much of our information has a Police Reporting Area associated with it. For any project (for another agency or for the public) where information is given by Reporting Area, we must also include a map to help the person requesting the information to see the area being studied.

Do you perform any GIS data maintenance activities? If yes, please provide an example.

Police Precinct and Reporting Area boundaries must be updated, split or redistricted as development occurs.

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

1. Create maps for crime bulletins/alerts 2. Locate crime hot spots. 3. Geocode crimes, arrestee home addresses, and vehicle recoveries daily. 4. Geocode other layers as needed. 5. Redistrict/modify existing layers. 6. Create thematic maps to show crime, population, police workload, etc. 7. Create maps using orthophotos/cadastral data to show specific addresses/land uses with relation to crimes being committed.

What activities do you think could benefit from use of (or increased use of) GIS?

Not sure. There seems to be a spatial component to everything that we do here. And we attempt to map everything that we can get our hands on.

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.



Agency Police Department

Name Nina Skinner

Job Title Statistical Analyst

Briefly, what activity(s) do you perform within your department?

I am responsible for analyzing the burglary cases on the East Side of the county. When a crime trend occurs, I am responsible for releasing a post car alert or crime bulletin for that activity. I am also responsible for the weekly DOC release reports.

Approximately what percentage of your work week do you spend for each activity identified in question #9?

Analyzing burglary cases: 70% DOC Release Reports: 30%

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

Yes I use ArcMap and RCAGIS to view the burglary cases for each week and determine if there are any patterns, clusters, etc

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

Yes I use ArcMap and RCAGIS to view the burglary cases for each week and determine if there are any patterns, clusters, etc

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

Yes I rely on the mapping programs to look-up the post cars numbers for the cases that warrant an alert or bulletin as well as the weekly DOC cases

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

Yes With each post car alert or crime bulletin a map of the crime trend activity is included. This map shows the current cases and their proximity to one another

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

I personally do not. My co-workers often do but I have not been assigned that task.

Do you perform any GIS data maintenance activities? If yes, please provide an example.

No

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

#NAME?

What activities do you think could benefit from use of (or increased use of) GIS?

We can continue to produce quality maps for our alerts and bulletins. Also, other departments who frequently need our services to produce maps will continue to benefit as well.

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.

Our department heavily relies on GIS technology to fully complete our tasks. The GIS programs are very beneficial for our daily routine in Crime Analysis. Other departments within the Baltimore County Police Department often come to us and request a map be made for a particular area or that we look at the crime activity in a certain region. The GIS programs are a huge help in completing those tasks.



Agency Police Department

Name Philip Canter

Job Title Chief Statistician

Briefly, what activity(s) do you perform within your department?

1. Responsible for managing the Analysis Unit comprised of four teams: Crime Analysis Team, Scanning and Forecasting Team, Traffic Stop Data Collection Team, and Traffic Analysis Team. 2. Perform a wide variety of management, analytical research, evaluative, and program development work in the areas of crime analysis, public safety, and Geographic Information Systems. 3. Coordinate and direct research activities involving data collection, data coding, data entry, and data analysis. 4. Involved in the assessment, development, enhancement, and implementation of technology solutions for law enforcement, including the evaluation of various software and hardware systems. 5. Identify new technologies to provide successful solutions to problems and to increase effective operations. 6. Assist in the preparation of reports for publication and distribution. 7. Develop training programs on analytical and computer applications, particularly in the areas of Geographic Information Systems, crime analysis, spatial analysis, and quantitative methods. 8. Provide guidance, advice, and assistance to staff, contractors, local, state, and federal agencies including the Federal Bureau of Investigation, Bureau of Alcohol, Tobacco, and Firearms, National Institute of Justice, Bureau of Justice Statistics, Baltimore-Washington High Intensity Drug Trafficking Area office (HIDTA), and Justice Research and Statistics Association. 9. Prepare and monitor the Operating Budget for the Analysis Unit. Prepare grant applications for State and Federal funding. 10. Manage over 400 projects per year.

Approximately what percentage of your work week do you spend for each activity identified in question #9?

1. 20% 2. 10% 3. 10% 4. 1% 5. 1% 6. 5% 7. 5% 8. 5% 9. 15% 10. 28%

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

Yes. Descriptive and analytical mapping of crime, offender activity, property recovery. Point maps of crime and suspect information; probability surfaces for offender activity spaces; O-D maps; polygonal thematic maps of response times, police workload, public safety indicators.

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

No.

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

Yes. Spatial analysis performed using CrimeStat, Spatial Analyst, and GeoDa for hot spot analysis, regression analysis, spatial autocorrelation, model development, probability surface

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

Yes, hard copy maps are produced routinely depending on projects. Currently working on registered sex offender maps for address confirmation and Halloween deployment. Revise digital maps for use in RCAGIS.

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

Use GIS to query data to create subset used for analysis in response to an assigned project. Maps are routinely produced as point of reference, or for analysis depending on request.

Do you perform any GIS data maintenance activities? If yes, please provide an example.

Not me, but an analyst in the Unit is assigned that responsibility.

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

Query data sets using location or database queries; response time studies, traffic accidents, workload analysis, public safety indicators, research, resource deployment, management reports.



What activities do you think could benefit from use of (or increased use of) GIS?

IMS for use in patrol cars and distribution within the police department. Automated reports for management review on crime trends and pattern analysis.

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.

GIS is invaluable to our mission. The technology is used by a variety of people. We commend the county's interest in continuing and expanding this technology.



Agency Police Department

Name Sam, Helms

Job Title Statistical Analyst

Briefly, what activity(s) do you perform within your department?

Analysis and reporting of crime data; mapping incidents of crime; maintaining data bases

Approximately what percentage of your work week do you spend for each activity identified in question #9?

100%

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

Yes. Reports many times require a ariel photo or a map of the areas where crimes have been committed

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

Yes. Must many times pull data from data bases to create maps.

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

Many times have to determine what telephone numbers are within a specific area in order to do an autodialer

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

Usually each report requires that a map accompany the report.

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

Both. Many requests from within the Police Dept and many requests from citizens wanting crime data.

Do you perform any GIS data maintenance activities? If yes, please provide an example.

No

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

Plot location of crime; outline geographic areas or maps of zip codes. Use GIS naerly every week.

What activities do you think could benefit from use of (or increased use of) GIS?

Could begin to do some research using crime data and spatial analysis techniques in addition to current activities.

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.

GIS is an excellent way to demonstrate the distribution of crime data to others in the department as well as outsiders. Not everyone relates to tablular data but usually can grasp



Agency Police Department

Name Sgt. John Young

Job Title Police Liaison Supervisor

Briefly, what activity(s) do you perform within your department?

Supervise Police Officers at the 911 Center and are in charge of the Telephone Reporting Unit at the 911 Center.

Approximately what percentage of your work week do you spend for each activity identified in question #9?

90%

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

On occasion we use them to identify certain areas of the county, especially in the 911 Center. The 911 center uses it to identify the location of cell phone callers.

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

no

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

no

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

no

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

no

Do you perform any GIS data maintenance activities? If yes, please provide an example.

no

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

none

What activities do you think could benefit from use of (or increased use of) GIS?

Patrol cars in the Police Dept.

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.

I think that mapping in the police cars would be a great addition. Anne Arundel County Police already utilize this technology. The mapping gives them directions to the call. When you get a call to a street you don't recognize, the mapping would show you how to get there. This would increase the response time by not having to take out a map and find it and the safety issue of having to drive with a map in hand. A faster response time could be the difference between life and death. I already spoke with Roger Juba from the Police Department's Mobile Projects Team about the idea. He said that it could be performed with minimal expense.



Agency Police Department

Name Terry Tanguilig

Job Title Statistical Analyst

Briefly, what activity(s) do you perform within your department?

#NAME?

Approximately what percentage of your work week do you spend for each activity identified in question #9?

-compile data: 25% -create maps: 30% (maps are involved/used in Alerts/Bulletins, suspects list) -issue Alerts/Bulletins: 25% -create suspect list 8% -provide mapping/statistical support:

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

Yes, Orthophotography is use to determine type of location (ex. commercial versus residential)

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

Queries are used to identify trends such as type of vehicles, time frame etc...

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

Yes, spatial analysis is used to find cluster patterns

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

Yes a map is attached to all Post Car Alerts/Bulletins issued. Maps are created to show to Detectives/Precincts, maps are created for reference

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

Yes, occasionally projects are done at the request of the Police or public in which creating maps are involved. I have created maps for Pct 02 Community Resource Officer for his meeting presentations. I have also produced maps that were used in court cases.

Do you perform any GIS data maintenance activities? If yes, please provide an example.

work with maintaing the RCAGIS mapping system. I am generally responsible for the integrity of the data and mapping of vehicle thefts

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

create maps to locate vehicle theft activity/trends

What activities do you think could benefit from use of (or increased use of) GIS?

monitor other types of crimes not currently being tracked by mapping such as shooting/stabbings, gang related activity, thefts from auto. etc....

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.

More GIS training to users would allow users to utilize GIS more effectively and to be used in other potential applications



Agency Police Department

Name Tricia Amburgey

Job Title Statistical Analyst

Briefly, what activity(s) do you perform within your department?

1.I handle requests from citizens as well as the sworn personnel from within our Department for various data and maps. 2.I check for recent released criminals from the Department of Corrections. 3.We release multiple quarterly projects such as a Crime Report. 4. I have worked on Post Car Realignment Projects and have been responsible for the redistricting of five Precincts.

Approximately what percentage of your work week do you spend for each activity identified in question #9?

1.50% 2.5% 3.When the data is realeased, 100%. 4.I spent about six months on the last redistricting project (realignment three Precints).

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

Yes, we create maps to accompany our requests from citizens and sworn personnel from within our Department. IE. Identifying the boundaries of a reporting area for a citizen's request. An aerial map of an area to help with an investigation of a crime for our sworn personnel.

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

Yes, we extract data to plot the burglaries (for example) in a certain area.

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

Yes, we geocode the residence of juvenile arrests which is an important focus in our Department. Also, points of locations of crimes, schools, Calls for Service, etc.

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

Yes, we print them out on a color copier or we generate maps to print on our plotter. (Our most popular size map is 34'x44'.

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

Yes, we assist other agencies with their goals. IE. The Department of Economic Development has requested the crime in the area of a potential site.

Do you perform any GIS data maintenance activities? If yes, please provide an example.

I create and translate shapefiles. If a need a layer form MapInfo, I'll translate it to a shapefile.

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

I illustrate my data in various ways such as maps of boundaries of reporting area, regional planning districts, zip codes, precincts, etc. I illustrate point data such as locations of schools, crimes, Calls for Service, etc.

What activities do you think could benefit from use of (or increased use of) GIS?

Can't think of any right now.

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.

None



Agency Police Department

Name WENJUAN IU

Job Title STATISTICAL ANALYST

Briefly, what activity(s) do you perform within your department?

Data management and analysis, creating reports, data tables and maps of crime and traffic accidents information, request from the Police Department as well as outside communities.

Approximately what percentage of your work week do you spend for each activity identified in question #8?

85%

Do you use GIS data or databases (e.g., orthophotos, topography, property maps) to perform your daily job? If yes, please provide an example.

Yes, we use files of Precincts, reporting areas, zipcode, etc

Do you use GIS applications (e.g., Data Query, MyNeighborhood websites) to perform your daily job? If yes, please provide an example.

Yes, routinely produce various maps from traffic accident information.

Do you use spatial analysis (e.g. geocoding, routing) to perform your daily job? If yes, please provide an example.

Yes, geocode address to get coordinate and select attributes from different layers

Do you use or produce hardcopy or digital maps to perform your daily job? If yes, please provide an example.

Yes, use area photo graphs to locate crime data

Do you provide data products or services to other agencies or the public? If yes, please provide an example.

Yes, to other County agencies and department and public

Do you perform any GIS data maintenance activities? If yes, please provide an example.

No

Briefly list the activities that you perform using GIS? (create maps for master plan, locate water customer addresses for work orders, etc.)

create maps; geococde addresses; spatial join;

What activities do you think could benefit from use of (or increased use of) GIS?

by mapping information using GIS, it facilitates understanding of the data.

Please provide any additional comments you have regarding the use of GIS technology by your department, agency or the County as a whole.

We already use GIS mapping extensively.