



Jack Wagner, Auditor General Special Report

July 2008

Using GPS technology to track sex offenders: Should Pennsylvania do more?

Introduction; purpose of report. This report discusses how **global positioning system** technology, or **GPS**, can be used to keep better track of sex offenders who skirt registration requirements or who are sexually violent predators.

In early June 2008, **Pennsylvania had lost track of 923 of the approximately 9,800 sex offenders** listed by name and address on the Megan's Law Web site maintained by the Pennsylvania State Police. We based this determination on the outdated verification dates that were posted on the Web site.

Two of the missing offenders were sexually violent predators, the most serious category of sex offenders.

Since the primary purpose of a Megan's Law registry is to provide a means of protecting the public by letting community residents know where sex offenders live, Pennsylvania should not lose track of even a single registrant.

Highlights

- ◆ In early June 2008, there were approximately 9,800 sex offenders listed on the Megan's Law Web site registry of the Pennsylvania State Police. Of those registrants, more than 240 were classified as sexually violent predators.
- ◆ Also in early June 2008, 923 sex offenders had non-current verification dates, indicating that these offenders had evaded registration requirements.
- ◆ At least 33 states use GPS technology to track the movements of certain sex offenders.
- ◆ Pennsylvania's Megan's Law permits state and county probation and parole authorities to track offenders by GPS as part of their supervision requirements.
- ◆ 14 Pennsylvania counties said they use GPS technology to supervise some sex offenders. Officials from 11 of those 14 counties found GPS to be an effective supervision tool.
- ◆ Pennsylvania should revise current law as necessary to require GPS monitoring for sex offenders caught after failing to register with state or local police as required, and also for sexually violent predators whose victims are children.

Background: Pennsylvania's version of Megan's Law.

Megan's Law is named for Megan Kanka, a seven-year-old New Jersey girl who was brutally raped and murdered in 1994 by a twice-convicted sex offender who had moved across the street from the Kanka family. The family had no knowledge of the neighbor's past offenses and believes that Megan's death could have been prevented had the offenses been known.

The public outcry following Megan's murder led to the adoption of a "Megan's Law" by the federal government, every state, and the District of Columbia within two years. Pennsylvania's General Assembly passed its original version of Megan's Law in 1995.

The Pennsylvania State Police is the lead state agency to administer the law and maintain the Web site, www.pameganslaw.state.pa.us, by posting information such as each offender's name, home address, work and/or school address, photograph, height, weight, eye color, aliases, vehicle description, the type of sex crime(s) committed, and, for offenders convicted after November 30, 2006, whether the offender's victim is a minor.

Keeping registration information current is left in large part to the sex offenders themselves. Most are required to verify their addresses only once a year by responding to a letter from the State Police. The much smaller subset of "sexually violent predators" is required to verify registration information **four times each year** because they have been deemed by the courts to be more likely to engage in violent sex offenses.

There were more than 240 sexually violent predators listed on the Web site on June 2, 2008. Of those sexually violent predators, 31 who were convicted *after* November 30, 2006, were listed as having victims who are

minors. Based on our review of the offense descriptions for the sexually violent predators convicted *before* that date, we determined that at least 33 of those registrants had preyed on minors.

Previous audits revealed problems with keeping track of some of the registered sex offenders. Two years ago, on May 1, 2006, the Department of the Auditor General released a special performance audit, *The Administration of Megan's Law in Pennsylvania: Third Report*, in which we reported the significant challenges faced by the State Police in its administration of Megan's Law for the period of January 24, 2005, through November 22, 2005. Audit reports that we issued from earlier periods also had revealed challenges. **A particularly serious issue discussed in the third report was that 700 sex offenders had evaded the State Police's scrutiny by failing to register their whereabouts as required.**

We also reported that the State Police could not know with certainty whether the current Megan's Law registrants were actually living at their registered addresses. The uncertainty occurred because the sex offenders themselves were responsible for reporting their own addresses, and police officers were not required to visit those addresses to prove who really lived there.

Too many sex offenders with whereabouts unknown. In early June 2008, as part of our follow-up work related to the previous reports, we reviewed the information posted on the Megan's Law Web site for every listed registrant. Our objective was to use the information on the

Web site to determine whether all offenders had verified their addresses as often as Megan's Law requires.

Our specific methodology entailed looking at the posted "verification date" for each sex offender. That date is important because, on its Web site, the State Police explains that, "[t]o be compliant with verification requirements, the verification date must be within the past 12 months for sex offenders and within the past 3 months for sexually violent predators." Based on that criteria, we were able to determine—that is, presuming the State Police had posted dates accurately—that sex offenders with posted verification dates older than 12 months had not verified their addresses within that previous year as required. Similarly, we could determine that sexually violent predators with posted verification dates older than 3 months had not verified their addresses quarterly as required.

Our review revealed that, of the approximately 9,800 listed sex offenders, there were 923, or almost ten percent, who did not have current verification dates. Even worse, **152 of those offenders had no verification date listed at all**; instead, each verification date was posted as "None listed in this registry."

Given the definition and significance of the verification dates, the public could reasonably conclude not only that 923 sex offenders were "missing," but also that 152 of those offenders may have been missing for several years.

Solution available? Part of our follow-up work after releasing our May 2006 audit report has included researching what the State Police or other law enforcement agencies

could do to keep better track of sex offenders, deter them from avoiding registration requirements, and step up the supervision of those caught after failing to register.

Our research led us to the use of electronic monitoring, and more specifically, the use of global positioning system technology, as a supervision tool.

What is GPS? A global positioning system can pinpoint a person's physical location using satellites in orbit. These satellites continuously transmit position and time signals, which can be detected by a GPS receiver.

GPS technology has many applications, including those in aeronautics and government, for example, and more recently in private use for travelers who use GPS to obtain driving directions.

In the corrections field, GPS technology can be used by probation and parole officers to supervise criminals released into the community. The officers can track the criminals by viewing a computer screen to pinpoint offenders' movements throughout each day.

How often the movements can be viewed—whether minute by minute as they occur or instead at the end of a day, for example—depends whether the system is considered active or passive:

Active. Using active GPS technology, officers can track an offender's movements almost at the same time they are occurring, whether minute by minute or in other selected intervals. Cellular communications transmit the collected GPS data to a surveillance

center and, in turn, to the officers.

Passive. Using passive technology, the supervising officer cannot view an offender's movements at the actual time they occur because the GPS device records and stores the movements but does not immediately transmit the data. At a later time, such as the end of each day when the offender returns to his or her home base with the tracking device, the supervising officer can retrace the offender's whereabouts after the fact by playing the recorded movements back.

There is also a hybrid system that combines the active and passive usages. Primarily operated in the passive mode, the system can be switched to active monitoring at any time by the supervising officer. Moreover, if the passive system records offenders entering locations from which they are restricted, the passive system converts automatically to active mode.

GPS systems are sold by various technology vendors throughout the world. Typical system components assigned to an offender include the following:

- ♦ **A small transmitter** is attached to the offender's ankle using a tamper-resistant band.
- ♦ **A small tracking device**, which the offender must keep nearby at all times, keeps a continuous electronic connection to the ankle bracelet unless the two become separated by about 150 feet. The tracking device records and stores data to show the offender's movements/locations as frequently as minute by minute. If the offender moves too far from the tracking device, the electronic connection to the ankle bracelet is broken and a violation message is sent to the surveillance center and on to the

supervising law enforcement officers. Today's tracking devices typically weigh less than one pound, including their batteries.

- ♦ **A base unit** is kept in the offender's home. This unit plugs into a standard power outlet, has a backup battery, and is connected to the offender's telephone line. When the offender is home, he or she recharges the tracking device by placing it into the base unit (recharge time is about 4 to 6 hours). When in passive mode, the base unit then transmits the recorded tracking data to the surveillance center and on to the supervising law enforcement officers.

Several companies also offer a one-piece GPS system, in which the tracking device is self-contained within an ankle bracelet, thereby eliminating the need for the offender to carry a separate device. Cellular communications transmit the offender's location data to the surveillance center and the supervising law enforcement officers, eliminating the need for a telephone line. The ankle bracelet is re-charged by plugging it into an electrical outlet.

The technology and equipment are evolving constantly and have come a long way since first used in the corrections field in the mid-1990s. At that time, the tracking device was the size of a large briefcase. Experts predict that equipment will eventually become even smaller than now and that, like cell phones and computers, the technology will advance further as well.

What do other states do with GPS monitoring? In Pennsylvania, Megan's Law allows—but does not require—sex offenders to be monitored

using GPS technology. Specifically, the law allows the Pennsylvania Board of Probation and Parole, as well as county probation authorities, to “impose supervision conditions that include offender tracking through global positioning system technology.” (See 42 Pa.C.S. § 9798.3.)

We contacted the 49 other states to determine what they are required to do, if anything, with GPS monitoring of sex offenders. We also elicited information about other states’ actual practices regarding such monitoring, whether or not the monitoring is required by law.

Laws vary. Regarding the laws, our research found that laws in other states vary greatly. Some states mandate GPS tracking of certain sex offenders, while others simply allow law enforcement officials to use their own discretion to monitor offenders. We identified at least 24 states¹ whose laws appear to *require* the electronic monitoring of certain sex offenders. The length of time for which electronic monitoring is required varies, but it can be as long as the offender’s lifetime. The current laws of at least 14 states² appear to require certain offenders to be electronically monitored for the rest of their lives. We were able to confirm our interpretation of many of these states’ laws by interviewing relevant state officials.

In California, the state’s lifetime electronic monitoring law has been the subject of

¹ Arizona, California, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Massachusetts, Michigan, Missouri, Montana, New Jersey, New Mexico, North Carolina, Oklahoma, Rhode Island, South Carolina, Texas, Virginia, West Virginia, and Wisconsin. Laws in Alabama and Arkansas are less clear, according to our research, but officials from both states told us those states require such monitoring even though it is not in use at this time.

² California, Florida, Georgia, Indiana, Kansas, Louisiana, Massachusetts, Michigan, Missouri, North Carolina, Oklahoma, Rhode Island, South Carolina, and Wisconsin.

public debate. News reports have claimed that, soon after the state started requiring the monitoring, hundreds of offenders were instead spared from that requirement because the state had not designated an agency to track them once they completed their periods of parole.

Practices also vary. Regarding state *practices* (not necessarily required by law), we found through our conversations with state officials and through other research that, as of September 2007, at least 33 states were using GPS technology to monitor sex offenders, including Pennsylvania, as discussed on pages 6 and 7 of this report.³ Officials from nine other states⁴ reported they were not currently using GPS but were monitoring some sex offenders using a house-arrest form of electronic monitoring. Such technology can tell if an offender is within a certain distance from his house but cannot track the offender’s movements outside of that designated area.

We also found that several states have conducted pilot programs, including Tennessee, Nevada, and, most recently, New Jersey, as follows:

Tennessee. Tennessee’s Board of Probation and Parole attempted to evaluate the impact of GPS monitoring on sex offender recidivism. While it found no statistically significant differences in recidivism for those monitored by GPS as opposed to those offenders who were not monitored by GPS, the agency found GPS

³ Arizona, California, Colorado, Connecticut, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Tennessee, Texas, Virginia, Washington, and Wisconsin.

⁴ Alabama, Arkansas, Hawaii, Maine, Montana, Utah, Vermont, West Virginia, and Wyoming.

to be a positive tracking tool that provided officers with greater information for use in supervising sex offenders.

Nevada. Officials from Nevada's Department of Public Safety found through a pilot program begun in late 2005 that GPS is a technologically sound monitoring tool. According to the officials, GPS monitoring is the highest form of monitoring available short of incarceration and can radically improve the awareness of an offender's daily activities.

New Jersey. Most recently, in December 2007, the parole board in Megan Kanka's home state of New Jersey released the results of its own GPS pilot program. The board found that GPS monitoring "allowed officers to discover and take swift action when sex offenders were living in unauthorized residences, violating the terms of Megan's Law, or coming into areas frequented by their former victims."

Pennsylvania had a pilot program several years ago that pointed out the need for improved technology. Between late October 2005 and June 2006, the Pennsylvania Department of Corrections and the state's Board of Probation and Parole tested active GPS units from five different companies in five different geographical areas in the state. The intention was to evaluate various aspects of the technology, including the software and its reporting capabilities, satellite signal tracking, and time delays in reporting offender locations.

According to a report provided to us by the Department of Corrections, the pilot program did not work well because of various problems, including the fact that GPS technology at the time was not as

advanced as it is today. Specifically, the agencies concluded that the problems with the technology would have to be addressed prior to full implementation of any GPS monitoring in the future.

Our research shows that GPS technology has vastly improved since the pilot program was conducted. For example, satellite signals are captured more quickly, battery life has improved, and progress is being made so that offenders' movements can be better tracked indoors.

Regarding the positive outcomes that Pennsylvania reported from its pilot program, the outcomes reported then would be the same today, including the ability to locate an offender in almost real-time, the ability of some equipment to communicate directly with the offender, and the ability of the systems to notify the agencies of violations within a reasonable time frame.

County use of GPS technology in Pennsylvania has been successful. Unlike the less positive results of the state's pilot program, we found that certain Pennsylvania counties have been successful in their use of GPS technology. One county, in fact, has used GPS for almost ten years.

We learned about the successes by contacting probation and parole officials in 27 counties between mid-January and late March 2008 to inquire how, if at all, they used GPS to supervise sex offenders. We chose 26 counties based on the Pennsylvania Board of Probation and Parole's 2006 annual statistical report that identified the 26 counties as using GPS technology to monitor offenders in general (that is, not just sex offenders). We contacted the

GPS usage in Pennsylvania counties as of April 2008	
Type of usage	# of counties
Currently supervising sex offenders	14
Currently supervising other types of offenders	9
Supervised offenders with GPS in the past	3
Never used GPS, developing its GPS program	1
Total	27

additional county based on the recommendation of a probation official in one of the 26 counties.

Among the 14 counties that said they used GPS tracking for sex offenders, there were approximately 60 sex offenders being monitored, from a low of one per county to a high of 12. Of the 60 sex offenders, there were three sexually violent predators being monitored by GPS.

The counties' GPS programs had common elements:

- ◆ **Process to place offenders on monitoring.** The counties using GPS indicated that offenders are placed on GPS supervision based on court orders and/or decisions of probation and parole officials.
- ◆ **Sources of funding.** All counties using GPS for sex offenders indicated that the offenders paid for the program at a price of between \$5 and \$20 each day for the monitoring. Several counties said they charge one-time "hook-up" fees as well, which range from \$30 to \$50.

Officials from **11 of the 14 counties using GPS technology to monitor sex offenders said that their programs were effective supervision tools.** The officials said that funding had not been an issue thus far

because most offenders were able to pay the costs. The officials also said their workloads were generally manageable, most likely due to smaller county caseloads.

On the negative side, we found some county officials who said that GPS monitoring has been ineffective. The officials cited technological problems such as loss of satellite signals in rural areas (thereby making it impossible to track the offenders' movements) and poor battery life. One official also reported problems with the offenders themselves, saying that they were always "messing" with the equipment.

A **dvantages outweigh disadvantages.** As the result of our conversations with officials in Pennsylvania counties and in other states, we have determined that the **advantages** of using GPS technology to supervise certain sex offenders are significant enough to implement usage statewide.

- ◆ **GPS is the highest level of supervision available short of incarceration.** With GPS, officers can monitor the movements of a sex offender at nearly the same time those movements occur, 24 hours a day, 7 days a week. No other method of supervision offers such detailed tracking capabilities.
- ◆ **GPS data can be used in court.** According to our interviews with law enforcement officials and GPS vendors, the technology can indicate either that an offender was or was not at the scene of a crime.
- ◆ **GPS can serve as a deterrent to criminal behavior.** Sex offenders know that their movements are being tracked and monitored.

- ◆ **GPS is cost-effective.** When used as an alternative to incarceration, GPS monitoring saves the county or state money because the offenders are paying a daily fee for their tracking, as opposed to taxpayers paying costly fees for incarceration.

By going beyond the traditional house-arrest form of electronic monitoring, GPS technology gives law enforcement officers the ability to monitor whether a sex offender is following the rules of his/her supervision. Officials can determine whether offenders are abiding by their curfews and whether they are avoiding going near restricted locations such as schools and child care centers.

Regarding **disadvantages**, nearly everyone with whom we spoke noted that GPS monitoring is not a magical solution for offender supervision. The technology is not foolproof because it is driven by satellite signals that can be lost in rural areas, inside buildings, and even in densely populated locations. If the signal is lost, the offender cannot be tracked until the signal is restored.

It should also be noted that GPS monitoring can be time consuming for officials, who must consistently monitor offenders' location data and respond to violations.

Finally, it is important to have an offender's cooperation, which is easiest to achieve from offenders who want to live at home with GPS supervision rather than to live in prison without GPS supervision. Uncooperative offenders have been known to elude supervision by cutting off ankle bracelets, allowing equipment batteries to run down, or finding ways to block the satellite signal, but probation and parole officials have found ways to minimize these risks and/or punish those violators, including incarceration.

Conclusions. As our follow-up work to our May 2006 Megan's Law audit has indicated, of the approximately 9,800 sex offenders listed on the Megan's Law Web site in early June 2008, almost 10 percent appeared to avoid the scrutiny of state and local police by evading registration requirements. Pennsylvania could improve its tracking of convicted sex offenders by searching aggressively for the lost offenders and then using GPS technology when the offenders are found.

Pennsylvania should also look at the successes of other states and of its own counties who have found GPS monitoring to be effective. Despite the known flaws, GPS monitoring can be a results-effective supervision tool and should be used as a supplement to other types of supervision, such as in-person visits with the offender, numerous telephone contacts, and on-site employment verifications. Although those latter methods can certainly be effective, not one of them gives supervising officials the ability to monitor sex offenders from afar. Even the earlier form of electronic monitoring—ankle bracelets used for house-arrest situations—is limited because it cannot track the movements of an offender away from the designated home base.

GPS technology cannot prevent a crime from occurring or show exactly what the offender is doing, but it can provide critical, verifiable information either to place a sex offender at the scene of a committed crime or to rule the offender out. Moreover, it can serve as a deterrent.

A probation officer with the Tennessee Board of Probation and Parole summarized his thoughts this way: "Without GPS, I feel like someone took away my glasses. No, I don't see perfect[ly] with them, but it's better than [not seeing at all]."

Recommendations. Based on our research, we make the following recommendations regarding statewide implementation of GPS technology to monitor certain convicted sex offenders:

1. The Pennsylvania State Police and the Board of Probation and Parole should request that the General Assembly amend Megan’s Law to require five years of GPS monitoring for offenders who are caught after failing to register their whereabouts as required.

2. The Pennsylvania State Police and the Board of Probation and Parole should request that the General Assembly amend Megan’s Law to require at least five years of GPS monitoring for all sexually violent predators whose victims are children.

The Department of the Auditor General stands ready to assist the State Police, the Board of Probation and Parole, the General Assembly, and others in further assessing how modern technology can address the problems inherent in sex offender supervision, thereby enhancing public protection.

About our methodology: This special report is not an audit report. Using the same information available to the general public, we conducted our own research and used readily accessible information from the online Megan’s Law registry maintained by the Pennsylvania State Police. By combining that information with our technical knowledge of the Megan’s Law process and the related administrative challenges, we developed this report to provide a management tool for use by the State Police and others. We may also use this report as a planning tool for a future special performance audit.

GPS success stories. What impact has GPS tracking had thus far? Below are portions of news stories or other reports that we found online.

April 22, 2008, story (excerpt)
San Luis Obispo Tribune, San Luis Obispo, CA

“A registered sex offender was arrested after allegedly asking children in Morro Bay and Los Osos if they wanted to get into his car to see his snake bite wound. ... The children fled and told their parents, who then called the Sheriff’s Department. The next day, [the offender] allegedly approached children three separate times in Morro Bay and tried to talk to them, according to sheriff’s officials. [The offender] is a registered sex offender and was wearing a GPS tracking device. Investigators said they were able to track his movements to corroborate the children’s accounts. [The offender] is in County Jail on various charges.”

November 11, 2006, story (excerpt)
KABC, Los Angeles, CA

“A high-risk sex offender was arrested after being tracked by GPS to a Los Angeles elementary school campus, but no children were hurt, police said Saturday. ... Under the terms of parole, sex offenders are generally not allowed on school campuses. [The offender] is monitored by an electronic ankle bracelet and his parole agent was notified of the violation by an LAPD officer with the Real Time Analysis and Critical Response Division.”

more on next page

February 18, 2008, story (excerpt)
WUSA 9, Washington, D.C.

“DC police have taken a man into custody in connection with two sexual assault cases that occurred along Georgia Avenue, Northwest, on Wednesday. ... Court officials say one of their release officers thought they recognized [the man] in a surveillance picture that had been released by DC Police on Thursday. On Friday, they tracked [the man’s] movements and allegedly placed him at the scenes of both incidents, using the GPS tracker in the ankle bracelet worn by [the man] as part of his supervised release. ... [The lead electronic monitoring technician for Court Services and Offender Supervision Agency said] the [GPS] technology is invaluable because the evidence can’t be refuted. ‘It’s very difficult for an individual when you have a tool like that for him or her to actually lie when they’re looking at the screen and the screen tells the truth,’ he says.”

December 5, 2007, pilot program report (excerpt)
New Jersey State Parole Board, Trenton, NJ

“A total of 225 sex offenders have been subject to GPS monitoring in New Jersey since the program began. Significantly, only one of these high-risk sex offenders has been charged with a new sex crime while under GPS supervision. The sex offender was arrested at the crime scene, a rape that occurred in April 2006. Even if the sex offender had left the scene, however, GPS data was available to pinpoint his presence at the time and place of the crime, and was ready to serve as a vital aid to the investigation.”

November 17, 2005, story (excerpt)
KABC, Los Angeles, CA

“A paroled sex offender tracked to a grade school parking lot, doll shop and amusement park through electronic monitoring became the first person arrested under an Orange County pilot program, officials said today. ... [A regional parole administrator] said the amazing thing is ‘how specific this technology is. The parole agent was able to determine an exact location and duration of [the offender’s] whereabouts, which allowed us to make an arrest before a crime had occurred’... .”

December 13, 2006, story (excerpt)
KBAK-TV, Bakersfield, CA

“...offenders have been returned to prison because parole violations were spotted using the GPS program. [An agent] says he noticed something suspicious by one of his offenders on the program. ‘He had a pattern, on Tuesday nights he went to a particular residence. ... The second time I saw that, I went to the residence and discovered that children resided at that residence.’ The offender’s conditions of parole said he could not be around children. He was returned to prison.”