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MEMORANDUM

To: Hon. Barbara M. Quinn, Chief Court Administrator
Hon. Patrick L. Carroll III, Deputy Chief Court Administrator

From: Thomas A. Siconolfi, Executive Director

RE: Report on the use of GPS technology to monitor offenders

Overview

Purpose of the review

At your direction, I have reviewed certain aspects of the Judicial Branch's use of commercial-grade Global Positioning System (GPS) technology to monitor offenders. The review has been undertaken with 2 main purposes:

To determine if the Court Support Services Division (CSSD) is using the best available GPS technology to monitor offenders in the community; and

To determine whether or not the GPS vendor under contract to CSSD is providing an acceptable level of service and complying with contract requirements.

This review was initiated following an incident involving a high-profile sex offender wherein a violation of probation (VOP) warrant was obtained after an initial review of GPS tracking data by CSSD's GPS contractor indicated that the probationer strayed beyond approved travel limits in his neighborhood. The VOP charge was subsequently withdrawn by the State's Attorney following a further analysis of the GPS data by more qualified personnel employed by our contractor. It was determined that a poor GPS signal was present at the time of the tracking, and

therefore it was not possible to determine with certainty if the probationer had, or had not, violated his travel limitations.

This report discusses global issues that this case has brought to the forefront concerning the use of GPS technology to monitor offenders. Namely, what are the real world capabilities of GPS and are the technological difficulties encountered in this case an anomaly or common to the use of GPS in Connecticut and elsewhere? This report is not an assessment of the protocols and procedures that were followed by CSSD personnel in obtaining a VOP warrant in this specific case. That internal review is ongoing within CSSD.

Additionally, other issues surfaced during the course of this review, including the limitations posed by existing probation officer work schedules and the need for additional GPS monitoring staff. These are important issues and therefore related findings and recommendations are included in this report.

Participants in the review

In conducting this review, I have solicited input and assistance from within and outside the Branch. Those participating from within the Branch included Cortez White, Director of Materials Management in Administrative Services, Martin Libbin, Deputy Director of Legal Services and Stephen Ment, Deputy Director of External Affairs.

As well, I have spent considerable time with William Carbone, Executive Director of CSSD and many senior members of his staff who are very well versed in the technology of GPS and electronic monitoring in general. Their assistance was invaluable in helping better understand the practical issues facing probation staff as they implement GPS.

I also reviewed available national research on the use of GPS in a community supervision environment. Additionally, we have had the benefit of on-site assistance from George B. Drake, Community Corrections Program Manager with the National Law Enforcement and Corrections Technology Center, whose expertise was made available to the Branch by the National Institute of Justice (NIJ). Mr. Drake's report is provided as Attachment A to this document.

A wealth of information and background about Connecticut's use of GPS, as well as the experiences of other jurisdictions, has been accumulated in preparing this report. However, for purposes of readability, this report presents its findings and recommendations in summary form and it is not intended to serve as an in-depth guide to the technical aspects of GPS. Additional technical information can be found in Mr. Drake's report to the Branch or made available upon request. In reviewing the two reports you will find that although each was prepared independently from the other, both reports include very similar findings and recommendations.

Findings

Is CSSD using the best available GPS technology to monitor offenders in the community?

GPS, and electronic monitoring in general, can be very valuable tools that assist probation officers in supervising and monitoring offenders in the community. In contrast to perimeter-based electronic monitoring, GPS allows offenders to be tracked during periods of time that they are permitted to be away from home as well as when they are in their residence. Connecticut mirrors the nation in expanding requirements for the use of GPS to monitor sex offenders in

particular.

Although offender-based equipment and monitoring services vary among GPS vendors, all vendors obtain their data from the same network of 27 satellites operated by the Department of Defense. A review of national data indicates that there are approximately one half dozen vendors that provide the bulk of GPS monitoring services around the country. Because all GPS data comes from the same source, the primary differences among these vendors are reflected in how the GPS data is monitored and the equipment that is placed with the offender. Greater differences among jurisdictions using GPS are found in the supervision models each jurisdiction employs.

Despite its technological sophistication, GPS is not a substitute for direct supervision by probation officers. Rather, GPS is a complementary tool that helps officers do a better job of supervising probationers.

National experts have assessed the GPS monitoring technology we use in Connecticut, and they indicate that our technology is consistent with and comparable to the systems in use throughout the country.

In an ideal environment GPS can be very accurate and consistent, however topographical, meteorological and other real world issues often result in far less accuracy and consistency due to signal loss, tracking errors, equipment problems and reliance on cellular technology for receipt of monitoring information. The depiction of GPS's tracking capabilities that is often found on television or in the movies is not accurate and certainly contributes to misconceptions by the public and policymakers about GPS's ability to track and monitor offenders. Connecticut's experience with the benefits and limitations of GPS technology, as well as misconceptions about GPS's capabilities, are consistent with those of other jurisdictions for whom information is available.

Commercial-grade GPS is a horizontal tracking tool and it does not effectively track vertical movement. With this significant limitation, GPS may be better suited to tracking offender movements in suburban and rural environments than it is to urban settings where multi-level apartment style housing is common.

GPS's suitability as a crime prevention tool is limited. GPS and electronic monitoring are available in both active and passive applications. In short, the active application implies that officers will receive immediate alerts from the GPS vendor if the offender violates predetermined travel limits, while the passive application accumulates tracking data to be reviewed periodically by a supervising officer. Regardless of which configuration is used, there is a time lapse between an offender's movements and notification to probation of a possible violation. Even under the best of circumstances in an active application environment, a determined offender will have ample time to remove or disable tracking equipment and commit an offense or violate GPS limitations. GPS seems better suited to alerting a probation officer of an offender's pattern of behavior, so that an officer can take appropriate action for technical violations of the conditions of probation and perhaps forestall future criminal behavior.

Is the GPS vendor under contract to CSSD is providing an acceptable level of service and complying with contract requirements?

Since 2003 our GPS contracts have involved two different vendors. G4S Justice Services, Inc. (the primary contractor) provides installation, maintenance and removal of GPS equipment for each offender and Pro Tech Monitoring, a subcontractor to G4S, provides GPS monitoring and manufactures the equipment that is used. The scope of services portion of the contract is attached hereto as Attachment B.

Effectively and appropriately utilizing tracking data obtained from GPS is dependent upon accurate analysis of the data by skilled and trained technicians. This is a primary responsibility of the GPS contractor. In the high profile case cited above, the vendor did not have qualified individuals initially analyze the tracking data. This was a significant and unacceptable failure. The GPS contractor has been put on notice that having unqualified personnel providing GPS analysis is a breach of contract terms that, if repeated will result in termination of the contract.

Probation officers in the field report a high level of frustration with the responsiveness of our GPS provider with respect to GPS installations, repair orders and equipment problems and malfunctions. Multiple requests are often required before a field call is made. This undermines officers' confidence in GPS.

As is the case with many offender services in Connecticut, our GPS and electronic monitoring contract is utilized by multiple agencies in order to promote efficiencies and avoid competition for services. The Branch contract for GPS and electronic monitoring is utilized by both CSSD and the Department of Correction's Parole and Community Services Division. The DOC utilizes active GPS for 51 parolees compared to 27 clients on active GPS with CSSD. Additionally, the DOC has placed 150 parolees on passive GPS. CSSD uses passive GPS technology to a much smaller degree. The DOC utilizes GPS in far greater numbers than the Branch in part because they utilize GPS to monitor burglars as well as sex offenders, while the Branch presently limits GPS use almost exclusively to sex offenders, along with a handful of domestic violence offenders

Additional finding concerning present probation officer work schedules.

The present work schedule for probation officers, which is based on daytime hours, Monday through Friday, is not consistent with the goal of closely monitoring sex offenders at all times. Under the present staffing schedule, otherwise off-duty officers have a responsibility to respond to GPS alerts and monitor offender movements in the evening, overnight and on weekends and holidays. There are no probation staff assigned to a regular work schedule during the hours that offenders are most likely to violate GPS restrictions or other conditions of probation.

Recommendations

1) CSSD should continue to utilize GPS technology as an effective supplement to probation supervision until such time as a superior technology is available.

Despite its limitations and shortcomings, GPS technology remains a very valuable adjunct to probation supervision. Sex offenders and other serious criminal offenders will continue to be released to the community with often lengthy periods of probation and parole and with public

expectations that close supervision will occur. GPS provides a means to verify an offender's present location and movements to a degree that was not possible just a few years ago and provides probation officers with invaluable information that can be used to better supervise offenders and identify patterns of behavior that may be precursors to future criminal activity. Nevertheless, as proven in the recent high profile case noted above, GPS is not infallible, and information gathered in the preparation of this report indicates that technology limitations and equipment failures can be persistent and aggravating.

2) The Branch must continue to emphasize to policymakers and the public the real world capabilities and limitations of GPS and offender supervision.

As noted above, Connecticut's experiences with GPS monitoring of offenders are consistent with those of most other jurisdictions around the country that utilize GPS technology. The same frustrations and problems with equipment and tracking are widely noted, although the topography of Connecticut seems to be more problematic than most for GPS tracking and the cellular networks upon which GPS relies.

More importantly there is a general misconception about GPS and sex offender supervision. As previously stated, television and movie depictions of GPS provide an unrealistic portrayal of live tracking with a level of precision that is not remotely representative of real world GPS and offender tracking. GPS will not prevent an opportunistic offender from violating terms of probation or committing a new offense. Additionally, regular probation work schedules are limited to daytime hours and weekdays, meaning that off-duty officers are required to receive, evaluate and respond to GPS alerts.

3) Each GPS sex offender case, and perhaps other high-risk probation cases, should have a primary and secondary probation officer assigned to the case at all times to ensure the ability to review and respond to GPS alerts in a timely manner.

Present probation officers work schedules are limited to daytime and weekday hours. As noted several times previously, this results in off-duty officers having to respond to alert notices from the GPS provider. The officer receives these notices via text message. If the officer is in a cellular no-service area he will not receive the alert. If the officer is not proximate to a computer, the officer will be unable to review tracking data to determine the nature of the alert and the appropriate next steps to be taken.

Assigning a secondary officer to each case at its outset will allow officers to cover for one another when the primary officer is unreachable, or on vacation or other leave.

Note: The need for a secondary officer assignment became apparent early in this review of GPS and CSSD has already issued a directive implementing the new requirement (see Attachment C).

4) A CSSD-operated monitoring center should be established to screen GPS and electronic monitoring data and alerts and make appropriate notifications to probation officers and law enforcement authorities in the evening, overnight and on weekends and holidays. The Department of Correction should be approached to determine their interest in jointly establishing such a center, which would result in efficiencies and economies of scale.

A Branch-operated monitoring center that at a minimum operates from 3pm to 8am on weekdays

and from 3pm on Friday to 8am on Monday would address several of the problems that result from the present daytime/weekday probation officer work schedules. Most importantly, it would end the present reliance on off-duty officers to receive and assess GPS alerts.

The center can serve as an intermediary between Pro Tech, our GPS monitoring service, and the probation officer during off-duty hours. The center can receive data and alerts from Pro Tech, evaluate the information, and take appropriate follow-up action based on pre-established protocols that may include contacting the officer, contacting state or local police, or contacting the secondary officer assigned to the case if the primary probation officer is unavailable. This would relieve a substantial amount of the present burden on off-duty officers and ensure more consistent and timely review of GPS data and alerts. Officers can supply offender specific information to the center in the event that there are particular concerns that an officer determines should be monitored. The staff of the monitoring center would not need to be probation officers.

Additionally, because the Department of Correction's Parole and Community Services Division shares our GPS contract, uses GPS to a far larger degree than CSSD and appears to face many of the same off-duty issues, it is logical to explore the benefits of establishing a single center that serves both organizations. ***This recommendation will result in new costs.***

5) CSSD should establish regular evening and weekend shifts for probation officers in order to have supervision and response capabilities during hours when offenders are more likely to violate conditions of probation.

CSSD should move forward toward establishing regular work schedules that include evenings and weekends for a portion of the probation officers who supervise sex offenders, in order to provide supervision during the time that offenders are more likely to get into trouble. The current probation work schedules assign all staff to daytime hours, Monday through Friday, perhaps the least likely time for an offender to engage in restricted behaviors. The present schedule works well for court responsibilities and daytime reporting by offenders, but leaves nighttime oversight and monitoring strictly to our GPS provider, with all of the shortcomings noted throughout this report. Evening and weekend schedules would be free from other court-related duties and would provide significant opportunities for field visits and monitoring that are otherwise limited in daytime, weekday hours. Many other jurisdictions assign probation officers to evening shifts. The addition of 27 new sex offender probation officers in the spring of 2009, as provided in Public Act 08-51, presents an opportunity to implement the new schedules with a significant number of officers. ***This recommendation will result in new costs to the Branch.***

6) CSSD should review the performance of its GPS contractor to determine if the vendor is providing adequate equipment-related services and should investigate whether there are more efficient and effective ways to manage GPS and electronic monitoring equipment installation, removal and repair.

CSSD's contract for GPS and electronic monitoring includes 2 vendors, G4S Justice Services, Inc. and their subcontractor Pro Tech Monitoring. G4S is responsible for installing, removing and repairing GPS equipment in the field and Pro Tech is responsible for monitoring GPS data and providing the GPS equipment used in the field. National experts tell us that utilizing 2 vendors for a GPS application is an uncommon arrangement.

Complaints about GPS from probation officers in the field have two consistent themes: the 2-piece equipment worn by probationers fails with frequency, and often repeatedly (some are true

equipment malfunctions, others involve offenders tampering with the units and still others are functioning normally but are having GPS or cellular signal problems); and, there is consistent frustration with G4S's response to requests for installations, retrievals of equipment, and repairs. These problems undermine officers' confidence in GPS.

The GPS equipment provided to Connecticut by Pro Tech is similar to the equipment used in many other jurisdictions. While other types of equipment are available, there is little evidence that one type is vastly superior to another. However, the level of service provided by G4S seems less than satisfactory by numerous but admittedly anecdotal accounts. A thorough review of G4S's performance should be undertaken and if the negative anecdotal accounts are determined to be accurate, G4S should be put on notice that they are not in compliance with contract requirements and must improve immediately and substantially. Concurrently, CSSD should investigate whether there are better ways to manage equipment installation, removal and repair, including the possible establishment of an in-house unit that would have responsibility for these activities. ***This approach may result in a new cost to the Branch.***

7) Steps must be taken to ensure that our GPS vendor has only the most qualified persons provide analysis of GPS tracking data to CSSD personnel.

One of the most critical responsibilities of a GPS contractor is to provide accurate analysis of GPS tracking data. This data will be used by probation officers to ensure that an offender is in compliance with conditions of probation and if it appears from the GPS data that the offender is not in compliance, the officer will use the GPS information to help determine what additional steps need to be taken. Because of the implications of a false positive to an offender and a false negative to a potential victim, it is imperative that an officer receive timely and definitive information on tracking data. In the high profile case that prompted this review, it has been noted that the initial confirmation of the tracking data by our GPS contractor was provided by unqualified personnel. A review of the data the next day by more competent personnel employed by the contractor could not substantiate that a GPS violation had occurred.

This was clearly an unacceptable performance by Pro Tech. More troubling is that we have no way of knowing if faulty analysis has been provided by the contractor in the past. The GPS contractor must be put on notice that having unqualified personnel proving GPS analysis is a clear breach of contract terms and that any future occurrence will result in termination of the contract. **Note: The contractor has been notified of new protocols for reviewing and confirming GPS tracking data (see Attachment C).**

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A Review of the GPS Program of Connecticut's Court Support Services Division

Background

The National Law Enforcement and Corrections Technology Center (NLECTC) was asked to perform an independent review of the Court Support Services Division's (CSSD) offender tracking program. The Division is under the Judicial Branch of the State of Connecticut. The CSSD uses electronic monitoring equipment to supervise selected probationers. Although the statute authorizing the use of this equipment does not specify what type of offenders should be monitored electronically, CSSD currently uses both the traditional radio frequency (RF) and the Global Positioning System (GPS) devices primarily with sex offenders. Over two hundred traditional RF devices are currently deployed while less than 30 GPS tracking units are now in use.

A recent high profile case brought the integrity of the Division's GPS offender tracking program into question. On September 3, 2008, the tracking points of repeat sexual offender, David Pollitt, suggested that he strayed from his residence without authorization from CSSD. Probation staff contacted the equipment's manufacturer and asked for an interpretation of the tracking points. At first, CSSD was told the data indicated the offender had left the confines of his property. As a result, Pollitt was incarcerated for violating terms of his probation. However, after a more technical analysis of the tracking points was made, the vendor could not rule out the possibility that the errant points were actually the result of "drift", a common phenomenon that occurs when GPS signals are received in less than optimal conditions.

The local media had already extensively covered Pollitt's release from prison and his placement on probation with CSSD. The community had been informed, via numerous media outlets, that he would be placed under GPS tracking and that his every move would be closely monitored. Government officials declared that the smallest infraction of supervision rules would result in Pollitt's detention and his return to prison. When the Office of the State's Attorney concluded that probation violation charges against him were not sustainable, serious questions were raised concerning the vendor's equipment, the accuracy of GPS and the viability of the offender tracking program within CSSD. The Office of the Chief Court Administrator, determined that an independent review of the CSSD offender tracking program should be completed. Specifically, NLECTC was asked to determine if the technology that is used in Connecticut is consistent with the needs and expectations of the Division, and the community as a whole. Additionally,

NLECTC was tasked with reviewing the contract that is in place with the vendor to help assure that it properly addresses the needs of CSSD.

Review Methodology

To properly determine whether CSSD has chosen the proper technology and to assess whether the proper issues are covered in their contract with the vendor, a thorough review of the Division's offender tracking program was needed. During a site visit to Connecticut, hundreds of pages of documents were collected and reviewed. Interviews were conducted with the senior administrators of the Judicial Branch, upper and middle managers of CSSD, as well as Chief Probation Officers and front-line staff. Representatives of the vendor and the vendor's subcontractor were contacted. The request for proposal and the resulting awarded contract were reviewed. An analysis of the staffing patterns, officer compensation strategies, union issues, and officer burnout was made. Finally, a review of the Division's policies, procedures and response protocols was made. This information was assimilated and the salient elements of the review are provided within the pages of this report.

It would be outside of the scope of this report to comment on any highly technical judgments made by the vendor and/or the vendor's subcontractor. Some technical issues will be addressed with the understanding that the evaluator, although very familiar with the technology, including its capabilities, limitations and appropriate applications, is primarily analyzing the tracking program from an operational perspective.

The following topics will be discussed:

- An overview of the Pollitt case
- The stated goals and objectives of the tracking program
- The importance of establishing realistic expectations of the technology
- The organizational structure and program objectives
- A uniform response protocol
- How well the services provided contribute to meeting the program objectives
- How well the technology selected matches the tracking program objectives
- A discussion of one-piece and two-piece devices
- Emerging technologies to be considered

The Pollitt Case

Although the details of the Pollitt case are well known by now, it is important to carefully re-examine several of the facts of this incident. Rather than coming to any conclusions as to who was at fault, it is important to review even the most difficult experiences to learn how to improve the way programs are managed and how decisions are made. The Pollitt case provides an excellent opportunity to accomplish this.

Following a 2008 procurement process, Group 4 Securicor (G4S) was selected to provide the equipment and services for CSSD's electronic monitoring program. Under the terms of the contract, G4S uses a subcontractor (ProTech Monitoring, Inc.) to provide the equipment while G4S provides staff to install and retrieve the devices as offenders enter and leave the program.

David Pollitt, a probationer supervised with GPS technology, was required to remain within the confines of a two-acre residential parcel belonging to his sister. The heavily foliated land is situated in an affluent Southbury neighborhood that has many rolling hills. He is only allowed to leave the property limits to work and attend approved meetings that relate to his probation conditions. The supervising officer chose not to create a formal inclusion zone around the property. Instead, his tracking points were reviewed on a daily basis to assure his compliance with terms of his supervision.

Upon reviewing Pollitt's activities on September 3, 2008, the assigned officer noticed that between 1:00 PM and 1:21 PM a series of tracking points were plotted in a southwesterly direction extending approximately 1,200 feet from the house where Pollitt was living to a location that was well beyond the limits of the parcel to which he was restricted. At the time, he had no approved appointments or employment. At 1:27 PM, the software indicated that GPS was lost. At 1:32 PM, GPS was restored and a tracking point was plotted back at the offender's residence. Of potential significance, just one minute prior to this series of events, the system plotted what is most likely a "thrown point". At 12:59 PM a single point was plotted over 400 feet from the offender's residence followed by another point only seconds later positioning the offender back to (or near) his residence.

The officer called ProTech Monitoring for assistance in interpreting this data. An account manager fielded the call, and in the interest of time, offered an immediate opinion that the offender had left the area of his residence. A few days later, a G4S employee spoke with the corporate trainer of ProTech and asked for a written confirmation of the earlier assessment made by the account manager. The trainer, after independently reviewing the data, came to the same conclusion and provided a written statement to that effect. The Connecticut CSSD staff used this statement to obtain an arrest warrant for David Pollitt.

Meanwhile, G4S contacted ProTech's technical staff for another opinion. A more thorough technical evaluation was conducted, this time concluding that the plotted points may have been inaccurate. The CSSD staff was promptly notified of this, causing the Office of the State's Attorney to withdraw its motion to revoke Pollitt's probation. His supervision in the community resumed.

Immediately, questions arose as to how this situation could have occurred. It was first assumed, and widely reported, that the equipment was defective. Criticism of how the manufacturer misinterpreted Pollitt's tracking data was also widespread. The integrity and confidence of the entire offender tracking program was brought into question. Understandably, officials needed prompt answers to these issues so they could make any needed adjustments to the agency's supervision strategies in an informed and beneficial manner.

A senior staff member of G4S came to Connecticut to evaluate the Pollitt case firsthand. He visited the residence in question, interviewed the offender and extensively studied data generated by the equipment. His conclusions, along with those of the senior staff of ProTech Monitoring, were provided to the State of Connecticut. They include the following:

- Environmental factors (rolling hills and heavy foliage), coupled with limited GPS signal reception contributed to the points plotted being of lower confidence.

- Although the ankle tether and the base unit assigned to Mr. Pollitt had been replaced during the course of his monitoring, there was no concern raised about the GPS tracking device that was assigned. It had been used without incident or concern for approximately one year.
- A thorough technical analysis of the assigned tracking device determined that it was working properly.
- Upon meeting with Mr. Pollitt, it was noticed that the probationer was not using the belt clip that was assigned to him, but instead, he was carrying the tracking device in his front pants pocket.
- The proper orientation of the device's antennas is important to assure accurate tracking. By not using the assigned belt clip, and placing the device in his pants pocket, it is believed the offender reduced the accuracy of the tracking device. Furthermore, with the device deep in his pocket, the offender's legs and groin area could have partially shielded the reception of GPS signals, contributing to a lower accuracy of the tracking points.
- The residence where Mr. Pollitt lives is on a large two acre parcel. Mr. Pollitt was allowed to be anywhere within the boundaries of this large lot.
- The ProTech Monitoring staff members who initially received the calls concerning the Pollitt case should not have made the technical determinations as to the validity of the tracking points in question.
- The Connecticut officers placing the calls to ProTech Monitoring should have mentioned the high profile nature of the case. This may have resulted in the ProTech Monitoring employees to be less inclined to offer a quick judgment as to the validity of the violation alleged.

These findings are well thought through and not known to be disputed. G4S and ProTech Monitoring concluded that the combinations of factors in play on September 3, 2008 were significant, and may have caused a drift in the plotted location points. Procedural mistakes were acknowledged and steps have already been taken to change procedures within the companies to avoid the communication mishaps that occurred in this case.

Lessons learned from this incident include:

- Only qualified technical staff members should attempt to interpret complex tracking data.
- Although professional customer service should always be expected, supervising officers should disclose when a case in question is of high profile, and any analysis provided will be greatly scrutinized.
- Offenders should be required to wear equipment as prescribed by the manufacturer.
- Inclusion and exclusion zones, of reasonable size, should be utilized to monitor an offender's movements in addition to a daily review of the tracking points.
- Proper channels of communication must be delineated and all parties are to adhere to the protocol, especially when one or more subcontractors are employed.

Program Goals and Objectives

Offender tracking technology is now utilized in a variety of ways throughout the United States and in many jurisdictions around the world. It has been successfully used to release low risk

inmates to early parole. Jails administrators have used the technology to reduce overcrowding. Judges have sentenced thousands of defendants to periods of house arrest, enforced with GPS technology. Defendants, who might not otherwise be eligible for affordable bond, are released with a requirement to be tracked. Also, probation and parole agencies utilize the technology to enhance the level of supervision of high risk offenders or as a sanction for minor violations.

The CSSD's objective for using electronic monitoring equipment is to increase the accountability of selected offenders under the Division's supervision. The Division monitors both adult and juvenile cases. Offenders include persons sentenced through the adjudication process to a period of probation as well as pre-trial clients who are required to be monitored as a condition of release. The Division primarily uses traditional (RF) technology, but also utilizes active and passive GPS equipment on certain predatory criminals and high profile cases. Although there are no statutory requirements or policy provisions that delineate who will be monitored with the equipment, the Division has chosen to use the monitoring technology primarily with sex offenders.

The offender tracking technology (GPS), whether used in active or passive mode, can certainly make sex offenders more accountable with their day to day activities. Exclusion zones can be established to deter offenders from entering high risk areas such as schools, daycare centers and public parks. The technology can also be utilized to monitor required activities such as the offender's curfew, employment, schooling and counseling. Of the few cases that were reviewed, it was discovered that not all of the capabilities of the technology were being fully used. For example, inclusion zones were not always created around the offenders' residences, even though curfews were imposed. Templates were not made that could be applied to all the sex offenders living within the same jurisdiction. A template can contain, for example, all the schools, daycare centers and public parks in a town. Using templates can save time during the enrolment process while increasing offender accountability.

The Division may consider using offender tracking technology on other types of cases. The technology can be a very effective in reducing crimes that are time and place specific. Burglaries, home invasions, vehicle thefts and other property crimes are usually quickly reported to police with the time and location of the crime recorded. By correlating this data to the historical location tracking points of offenders under GPS monitoring, crimes can often be solved. More importantly, offenders who know that their activities will be cross-referenced with all crime scene data may chose to not commit a contemplated crime due to a near certainty of being caught.

The State of California is now using offender tracking technology to deter gang activities. Areas where gang members are known to congregate are off limits. Daily tracking points can be reviewed to determine whether fellow gang members are associating with each other. At least one manufacturer is considering the development of software that will allow an agency to define each gang member a floating exclusion zone to other gang members.

In 2005, the State of Maryland assembled a task force to address criminal offender monitoring using GPS technology. In addressing the issue of which offenders are most appropriate for this form of supervision, they concluded:

GPS's strengths lay in its ability to pinpoint the exact locations of individuals as frequently as several times a minute. For GPS to be useful, that location data, whether it is delivered in real time or after-the-fact, must be of some intrinsic value in monitoring offenders.

There is significant value in using offender tracking technology on sex offenders. They can be deterred from entering high risk areas as schools and other public places where potential victims tend to congregate. When sex crimes are reported to the police, the tracking data can be a very useful tool identifying and eliminating suspects.

It is also important to recognize there are some inherent limitations of using this technology with sex offenders. Keep in mind, many victims of sex offenders are groomed for months before an offense is committed. The victim may not file a police report due to embarrassment, shame or even a false sense of guilt. There is no research suggesting that GPS tracking can stop this secretive and predatory behavior of an offender. A motivated sex offender who is given numerous exclusion zones can simply commit the crime in a location where he is permitted. If no police report is filed, there is no chance of using the technology to tie the sex offender to the crime scene.

When considering what types of cases are most appropriate for GPS tracking, one must consider both the potential harm to the victim and the risk to the community. Even though offender tracking may be less effective in curtailing some of the activities of a sexual predator than those of a habitual burglar, stopping one vicious rape from occurring may be much more important than preventing dozens of burglaries.

The selection process of choosing offenders to be tracked is complex. Agencies should be encouraged to experiment with different strategies. If an agency is locked into one approach, it may be missing an application that is a better fit. The CSSD is fortunate that the statutes authorizing the use of offender tracking technologies gives the agency full discretion on how the equipment is utilized.

Establishing Realistic Expectations

The idea of using satellites in space to "track the every move" of offenders was lauded by many as a breakthrough technology that would stop criminals in their tracks. This is simply not realistic. Unfortunately, vendors anxious to make a sale have done little to make the public think otherwise. The truth is the technology has many limitations that should be recognized.

The State of Connecticut, like so many other jurisdictions, may have had an unrealistic expectation of what the equipment could do. When the limitations of the technology became evident in a high profile case, an immediate assumption was made that expectations were correct, but the equipment utilized must have been defective. As it turned out, the equipment in this particular case was found to be working within acceptable parameters. It was the expectations that needed to be fixed.

Improper expectations of the technology can doom a program. Field officers experience frustration when they are not getting the expected results. Administrators fight with vendors

over breaches of contract. Elected officials demand accountability. The media's reporting of events creates a firestorm causing the citizens of the state to become disgruntled with everyone involved in the process. This scenario is not unique to Connecticut. It is currently playing itself out in dozens of other jurisdictions.

Many are led to believe that offender tracking technology using GPS can track an individual 24 hours a day. GPS was designed by the Department of Defense primarily as an outdoor navigational system. Because offenders spend much of their time indoors they are often out of range of the weak GPS signals and their whereabouts often cannot be established. This leads to numerous "No GPS" alerts that frustrate the supervising officer and the offender.

It is often assumed that GPS can track offenders anywhere in the world in real time. In reality, many rural parts of the country still have little or no cellular phone service. Even though the tracking device can obtain GPS data from the satellites, an inability to communicate that information to a monitoring station causes tracking interruptions. Cellular service interruptions can be common even in the State of Connecticut where the cellular infrastructure is relatively robust.

It is often claimed that GPS devices are tamperproof. According to the editor of *The Journal of Offender Monitoring*, it would be foolish to believe that any system cannot be circumvented or undermined with the right motivation and knowledge. For the most part, circumvention techniques are still not widely known by offenders. However, there are well documented cases where offenders have exploited the vulnerabilities of devices.

Many tracking programs expect the technology to somehow stop crimes from occurring. Although it is true that the location information collected can help link an offender to a crime scene that may help a prosecutor, no system can prevent any criminal act from occurring. Even if an agency has an area designated as an exclusion zone, a motivated offender can violate that restricted area and commit a serious crime long before an agency has time to respond.

There is often an assumption that officials are monitoring all the activities of a tracked offender n real time. In fact, officers do not sit at monitoring screens and watch the live movements of offenders. Instead, the tracking software records the movements of an offender and compares those movements with the schedules and restrictions that have been created for that individual. Any variations to the schedule or any zone violations are reported to the supervising agency. This is an "exceptions-base" approach to offender monitoring, which is a very valuable tool, but differs from common public perceptions.

Many agencies are led to believe that offender tracking programs will save money. This sometimes is true, but the level of savings is often a disappointment. Agencies are often told to compare the cost of incarceration with the daily lease rate of the tracking equipment. This creates a false perception that the difference is savings realized by an agency. What is often overlooked or underestimated are the operating costs associated with the program. These are typically three to four times the cost of leasing equipment. By failing to plan for these costs, it stands to reason that a tracking program will find itself to be underfunded.

Despite these limitations, GPS can be a very valuable tool for supervising appropriate offenders.

It can offer relief to overcrowded jails, hold offenders accountable to a schedule, and even serve to deter offenders from committing new offenses. However, the capabilities of the technology are often misunderstood, resulting in unrealistic expectations and disappointment when those expectations are not met. The CSSD should fully understand the capabilities and limitations of the equipment when contemplating the future use of this technology within the Division.

The Required Organizational Structure

A glaring problem in the CSSD offender tracking program is the desire to track certain offenders with active GPS 24 hours each day while maintaining a conventional 8:00 AM to 5:00 PM, Monday through Friday staffing pattern. Upon interviewing the Chiefs and the line staff, it became apparent that even with only 24 offenders being tracked by the Division, the time needed to respond to off-hour alerts was already taking a toll. The employees interviewed were, without exception, loyal and remarkably dedicated staff. They explained that they chose to take on these specialized caseloads knowing there would be after-hours work required. Still, agencies should not require officers to be perpetually on-call. Although occasional late night telephone calls are inevitable, a program should not deprive its most dedicated employees from scheduled down time.

In April 2007, the Tennessee Board of Probation and Parole completed a study on monitoring sex offenders using GPS. The following is one of the conclusions made by the evaluators:

> *The project, while providing a valuable monitoring tool, has significantly impacted officer morale, work schedules (including increased overtime), quality of life, and turnover. Prior to GPS monitoring, officers scheduled night and weekend work as needed. GPS monitoring may require officer response at any time of the day, making officer work schedules alert-driven, and therefore unpredictable. Increased workloads and the potential 24-hour response requirements have negatively impacted GPS officer morale.*

The report went on to say that the program was unsustainable with their staffing patterns. The State of Tennessee's and Connecticut's CSSD staffing patterns are nearly identical. Although Tennessee had a higher number of offenders under GPS supervision, the principles are the same. A complete copy of the Tennessee report can be found on the Electronic Monitoring Resource Center website at: https://emresourcecenter.nlectc.du.edu/

The possibility of developing a 24/7 monitoring center in the state was discussed. While in Connecticut, this evaluator spoke with Randy Braren, the Director of Parole and Community Services. Parole is managed by the Connecticut Department of Corrections, which is under the executive branch of government. CSSD is a division of the judicial branch. Mr. Braren's officers supervise hundreds of offenders who are on offender tracking. He expressed a sincere interest in sharing resources with CSSD to create a monitoring center. It should be remembered that such a center could handle the after-hour alerts generated by both the GPS cases and the traditional RF offenders monitored by CSSD and the parole division.

A monitoring center would not solve all of the human resource issues that GPS tracking creates. However, understanding that a large percentage of alerts can be handled by making a simple

telephone call to the offender's residence, the volume of after-hours calls ultimately going to the supervising officer can be significantly reduced.

There also appears to be an opportunity to partner with Parole and Community Services in developing a collective database of tracking points that can be used in a statewide crime scene correlation program. The Connecticut Department of Public Safety has all police reports stored on searchable digital media. By using the combined tracking data from the state's probation and parole agencies, many leads can be generated on unsolved crimes.

A Uniform Response Protocol

Upon interviewing the Chiefs and line staff, it was evident that there is a willingness to promptly respond to alerts as they are generated by the offender tracking system. However, there was not a clear understanding of what response was appropriate for differing events. The employees stated that they "use their best judgment" or "do what is needed" to resolve a situation. Policy 4.14, Section 5 (A-C) provides some guidelines on how an officer is to respond to a violation. The first paragraph (A) requires that curfew violations, zone infractions, loss of GPS, movement without GPS, failure to respond to a text message, movement out of range of GPS device, or tampering with the equipment will be responded to in accordance with CSSD Policy 4.22 (Response to Non-Compliance). Policy 4.22 provides direction on how to proceed with the violation paperwork, including timelines for reports and graduated sanctions that should be considered, but does not address the immediate actions an officer should take.

The only language in either policy that gives direction to an officer on what to do immediately upon learning of a violation is Policy 4.14 Section 5(C). It requires officers to consider "when appropriate" five specific responses. They are:

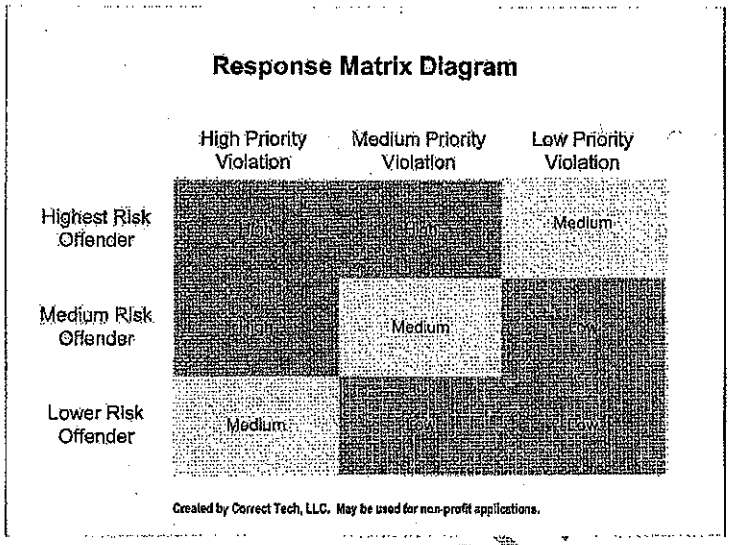
1. A telephone call to the client's residence or last known tracked point, if available, to determine the client's whereabouts.
2. Text message to the client via the GPS unit.
3. An on-site inspection of the client's residence or last known tracked point.
4. A call to the home of the victim.
5. Notification to the police.

The policy provides no guidance to the officer as to when these actions would be appropriate, but instead, seems to give total discretion to the supervising officer. Also, there is no mention of which violations should be considered more serious. In fact, some of the vendor's violations are missing from Paragraph A.

The policy indicates the officers shall respond to "the specific risk that the client presents to the community". Although that is appropriate, the policy lacks sufficient detail to assist the officer in recognizing what level of risk requires a certain action.

The Division should consider implementing a more comprehensive response protocol that assists officers in making appropriate and consistent responses in the event of program violations. The first step in developing such a protocol is to list all of the possible alerts that the system can produce. These violations should be ranked as having "High", "Medium" or "Low" priorities. A

simple response protocol would delineate steps to take for each of these levels of violation. A more complex (and perhaps more appropriate) protocol considers the risk of the offender before determining the appropriate response. For example, a very high risk offender who commits a violation of medium priority will still have the highest level response. See the matrix below:



Agencies have a tendency to rank too many violations as being a high priority and are also likely to place too many offenders in the highest risk group. This results in most of the alerts requiring the highest level of response. Agencies that do this may quickly realize they lack the resources to live up to the protocols that they have imposed upon themselves. It is much better to have lesser responses required by a policy that can be met or exceeded, than to have unrealistic responses required that the staff cannot possibly meet.

Finally, response protocol policies should not be written in such a way as to remove all judgment from the supervising officer. They should serve as a guide to point the officer in the general direction as to what response should be first considered. If an officer can clearly and convincingly articulate why a lesser response was deemed appropriate in a specific situation, the officer should not be chastised for using sound judgment.

Service Provider Review

During the interviews, there was much discussion over the disappointment officers felt toward the quality of service they were receiving from the primary vendor. Specifically, the staff felt the vendor was unreliable in the installing and retrieving of equipment. This was a common theme in nearly every interview. Officers told of many situations where offenders waited for installers who never came. The staff related that many times the installers repeatedly failed to keep their appointment, causing a significant inconvenience to the offender, the offender's family, and to the assigned officer. Such delays in the commencement of tracking could also have an impact on public safety.

The Request for Proposal dated February 11, 2008 requires the successful bidder to install and

troubleshoot equipment "at sites identified by the Judicial Branch within 24 hours notice, 7 days per week". A G4S representative confirmed these response timeframes are required by the contract. It is suggested that the Court Administrator discuss this issue with the vendor and require that the terms of the contract be adhered to.

Because many of the offenders being monitored are juveniles, a parent or guardian must be present before an installation can be made. Although the CSSD staff blames the vendor for most of the installation delays, a possible explanation offered by G4S for many of the untimely installations may be caused by the parents' of the juvenile offenders not making themselves available for an appointment.

There was a consensus among the Chiefs interviewed that having the vendor install and retrieve the equipment is important. Two Chiefs felt that in light of the problems with the vendor installing the equipment, it would be easier if the line staff assume this responsibility. Five other employees felt line staff was too overworked to place this added responsibility on them. One Chief felt there was no problems with the vendor, and indicated that installations and retrievals were done on a timely basis.

Evaluating the Selected Technology

Agencies regularly ask NLECTC staff what the best offender tracking equipment is on the market. There is no simple answer to that question. A number of questions must be answered before the best vendor match can be found for an agency. They include:

- What are the objectives of the program?
- Does the agency want active or passive tracking (or both)?
- Will the agency also use RF monitoring?
- What is the agency's budget for the program?
- What are the staffing patterns for the program?
- Will the agency work with multiple vendors or with only one?
- Is there cell phone coverage throughout the jurisdiction?
- Which cell phone service provider has the best coverage?
- Will the agency use the program to alert victims?
- Does the jurisdiction have urban canyons, high rise residences or subways?
- Is program security or officer convenience more important (one-piece versus two-piece)?

Only after an agency has answered these questions can the list of manufacturers be narrowed to the few that are the most appropriate. Vendors recognize that the needs and priorities of programs vary significantly. They have established a business plan and have developed a product line that they believe will give them a competitive advantage when bidding for certain accounts. At the same time, their product(s) may only marginally meet the needs of other customers. Therefore, agencies must give careful consideration to their program objectives and carefully evaluate the bids before selecting a vendor.

The CSSD has selected a vendor which is a good match for their program needs. The one contract provides for RF equipment, active and passive tracking devices and a service contract that provides equipment installation and pickup. The manufacturer of the tracking equipment

offers multiple cellular carriers to provide for good coverage in the state. Both one-piece and two-piece tracking devices are available under the terms of the contract.

There has been some concern voiced about interruptions in GPS signal receptions, especially when an offender is indoors. There is a vendor that offers a tracking device that performs better in compromised tracking environments, but that vendor does not currently provide many of the other features that CSSD needs.

One piece versus two-piece devices

Agencies must carefully choose whether one-piece or two-piece tracking devices are most appropriate for their program.

There are many benefits to a one-piece unit. The one-piece devices allow for less inventory of equipment. There is no need to tether the tracking device to another device to assure the equipment is with the offender. "Bracelet Gone" alarms sometimes overwhelm an agency's staff. With a one-piece unit, these reports are eliminated. Also, there is no requirement of an offender to remember to carry a device with him/her at all times. Offenders are often irresponsible and are not likely to consistently comply with a requirement to always have an unattached tracking device with them. One manufacturer of a two-piece device has incorporated technology in the bracelet (tether) that recognizes when it is out of range from the tracking unit. The bracelet will vibrate, giving the offender a friendly reminder to keep his tracking unit with him.

Most one-piece units currently do not offer the same level of security offered by the best two-piece units on the market. Two-piece units equipped with motion sensing technology can tell if the tracking device is at rest. This is important to know when an offender enters a structure and GPS is lost. If the device is at rest and the offender is in range of the device, the offender's location can be established with a high degree of certainty. Because most offenders spend a majority of their time indoors, this is no small issue. One-piece devices cannot use this technology. Even when an offender wearing a one-piece device is sleeping, his/her leg will frequently be moving.

Most one-piece tracking devices rely totally on cell phone communications and are of little value in some rural areas where there is no nearby cell phone coverage. Due to a lack of cell coverage, many of these offenders could only be tracked passively with devices that have a landline option for downloading data. One manufacturer of a one-piece device offers an optional downloading device that is connected to a landline. When an offender returns home, his data is downloaded via an RF link to the device which then sends the data to the monitoring center using the offender's home telephone landline.

Frequency reception and propagation are typically better with a unit that is worn at waist level. Generally, the higher the tracking device is from the ground, the better the propagation will be. That is why one positions a TV antenna on the roof, not in the basement. One-piece units worn at the ankle are also more frequently subjected to unintentional shielding. For example, when driving a vehicle, the ankle-worn device is under the dashboard and only a short distance from the engine block. This is not an advantageous place for RF reception and transmissions to occur.

Intentional shielding is much easier with a one-piece device. By simply placing a layer of aluminum foil over the device, offenders can interrupt GPS reception. Most one-piece units are especially vulnerable to this type of shielding. Although two-piece devices can also be shielded, severing the RF link between the tracking device and the ankle tether is likely to occur simultaneously, creating a pair of alarms that will alert the officer of a serious problem.

To combat this form of spoofing, some manufacturers of one-piece units monitor the cell tower activity that is generated during the tracking process. Since cell signals are more difficult to shield, a unit's movement can often be detected if the cell phone signal is received by a new cell tower. However, this is neither a reliable nor accurate means of determining location. An offender could travel a significant distance before his device's cell phone signal is heard by a different tower. In a rural area where there is only one nearby cell tower, an offender could wander around an entire community with his movements undetected. It is also possible for a compliant offender to be wrongly accused of traveling with no GPS by simply moving from one side of a building to another. Even if a cell tower is several miles further away, if there is a direct line of sight to that tower while a closer one is blocked, a stronger cell signal could be received by the more distant tower. Using this approach as a means of determining location is far from precise. At best, location accuracy can be measured in thousands of feet.

There are currently two vendors offering a one-piece unit that utilizes another location technology that claims to track much better in shielded conditions. Using Advanced Forward Link Trilateration (AFLT) as the backup location methodology, multiple cell towers are used to pinpoint the location of a receiver. It is available only with CDMA cellular service. The NLECTC recently reviewed this equipment. Although some shortcomings were discovered during the review, the equipment did perform very well in most moderately shielded environments. Accuracy was typically within 50 feet.

Charging a one-piece unit typically requires an offender to attach a device to his bracelet that is plugged into a wall outlet. The offender must remain relatively stationary for one or two hours. Offenders are often noncompliant resulting in a high number of battery alerts and interruptions in tracking. One vendor has answered this problem by offering a detachable/swappable battery. When one battery goes low it can be exchanged with a second battery that is on a charger. This is a clear improvement over the other method. However, when this equipment was reviewed, the battery swapping process was found to be a little challenging.

The objective of the agency is paramount when deciding which type of device to use. If program security and passive tracking in rural areas is paramount, the two-piece devices may be the best bet. However, if reducing nuisance alarms, minimizing inventory headaches, and making life simpler for the supervising officer are the priorities, try using a one-piece tracking device. It is important to remember the tradeoffs. No device will meet all of an agency's needs, but one of the two will likely be a better match.

Emerging Location Technologies

The technology used to monitor offenders in the community is evolving quickly. Many improvements to the equipment are being developed and will be available to agencies within the months and years to come. In order to assure that CSSD continues to utilize the best and most

appropriate technology for tracking its offenders, the agency should keep abreast of emerging technologies as they are introduced to the marketplace.

Much of the research and development efforts for improving offender tracking devices are focused on improving indoor tracking capabilities. In addition to AFLT (mentioned above) other technologies are emerging.

Rosum Corporation, of Mountain View CA, has developed a technology that uses the time difference of arrival (TDOA) of television and FM radio signals to calculate location. Although the company has successfully demonstrated the technology in other applications, it has not yet been successfully deployed in offender tracking devices, but it does seem promising.

A Melbourne, FL firm called Locus Location Systems, has developed a technology that uses its state's public safety radio towers to pinpoint a tracking device. Their technology is similar to that of Rosum's, except the state's public safety communication network is utilized.

Virtual Technologies, of Oakland, MI, has developed a tracking system that utilizes three-axis accelerometers to estimate location when GPS is degraded or unavailable. The system detects the motion, rate of acceleration and direction of the tracking device. It is not yet used with offender tracking applications.

Soon, location technologies will use WI-FI or WI-MAX wireless networks to establish location. Also, the Europeans, Russians, and Chinese will soon all have their own satellite navigational systems that will work like GPS. Manufacturers have already developed chip sets that will use these new navigational satellites to enhance the capability of the current GPS system.

A few offender tracking companies are now offering "beacons" that can be used with one-piece devices that will serve to monitor an offender within the confines of a house or an apartment. Most one-piece devices can only monitor an offender's presence within a large inclusion zone, allowing the offender to travel to neighbors undetected. This is especially troublesome in high rise apartment structures. The beacon technology can greatly narrow the inclusion zones.

Conclusions

After an analysis of the CSSD offender tracking program, the following recommendations are offered:

- Implement the lessons learned recommendations outlined on page 4 of this report.
- Establish realistic expectations of the technology's capabilities with staff, judges, legislators, government executives, the media and the general public.
- Create a monitoring center that screens after-hour alerts. This can be done in cooperation with the state's parole division to maximize efficiency.
- Develop a crime scene correlation program by partnering with the state's parole division and the public safety department.
- Consider using offender tracking equipment on additional classes of offenders.
- Develop a uniform response protocol so officers can more consistently respond to alerts as they occur.

- Meet with the vendor to discuss contractual requirements of providing timely installations and equipment retrievals.
- Review the subcontractor's one-piece tracking device.
- Review a tracking device that offers a supplemental location technology such as AFLT.
- Remain informed of emerging technologies in order to assure CSSD continues to utilize the most appropriate technology for the monitoring of their offenders.

This report was prepared by George B. Drake on behalf of the National Law Enforcement and Corrections Technology Center, a program of the National Institute of Justice, United States Dept. of Justice at the University of Denver. NLECTC reserves the right to share this document with other agencies for educational purposes.

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ELECTRONIC MONITORING SERVICES

SECTION II - SYSTEM SPECIFICATIONS

1. **REQUIREMENTS OVERVIEW**

The equipment proposed must be flexible and provide for a variety of applications for adult and juvenile clients. Multiple levels of monitoring and reporting are requested to meet the various needs of both the Judicial Branch and Executive Branch (DOC and BOP). Respondents must propose a solution that provides for comprehensive electronic monitoring services for home detention, client tracking and curfew sanctions. The proposed systems must signal and identify a variety of events, including but not limited to; the arrival and departure of the client, equipment tampering, client location, exclusion zone violations, inclusion zone violations and equipment malfunction. Services must include, but shall not be limited to; training, delivery and equipment installation including management of telephone installations, maintenance and retrieval of equipment, monitoring of clients, service calls, production of various reports and the collection of fees. (State regions are shown on Exhibit C.)

2. **EQUIPMENT**

A. The Contractor shall furnish all equipment required to perform services outlined herein and to make the proposed system fully operational, which shall include, but not be limited to: transmitters, receivers, tracking devices, recorders, bracelets, telephones, batteries, etc.

B. Equipment proposed must be the manufacturer's latest generation technology and shall have proven use as verified by the respondent's references.

C. Any proposed equipment assigned to the clients must be tamper proof. Electronic devices must have a unique coding scheme not used in any other commercially available products.

D. Random Frequency (RF) Tracking

1. Transmitters (Where Proposed)

- Must be small and lightweight and not unduly restrict the activities of the clients.
- Must be shock resistant, water and moisture proof, and function reliably under normal atmospheric and human environmental conditions.
- Must detect, register, and report the following events, at a minimum, to the home monitoring unit for prompt communication to a central monitoring station:
  a. Tampering or removal of the transmission devices (where used).
  b. Tampering or simulating the transmission signal.

2 Receivers – (Where Proposed)

- Must be capable of full communications to the central monitoring station through common telephone lines or a reliable signal if utilizing a cellular unit.
- Must have a backup battery, which provides a minimum of 24-hour continuous operating power for all functions. The backup battery shall be automatically rechargeable upon restoration of power and have a built in surge protector.
- Must detect, report and store, with date/time stamp, the following events at a minimum, and promptly communicate them to the central monitoring station:
  a. Arrival of client within the range of the home monitoring unit receiver.
  b. Departure of client out of range of the home monitoring unit receiver after a preset programmable time interval.
  c. Removal of the device from the client.
  d. Tampering or simulating the coded signal by a unit other than client□s own unit.
  e. Loss and/or restoration of the home□s commercial power.
  f. Loss and/or restoration of the telephone service.
  g. Tampering or attempting to open housing.
  h. Low battery condition of communication devices, including transmitter and/or receiver.

E. Global Position System (GPS) Tracking

- Where applicable, conform to the same guidelines specified under RF Tracking of this section.
- Provide passive and active GPS.
- Provide both one and two piece GPS units.
- Utilization of up to date mapping software.

3. CENTRAL MONITORING STATION

For both RF and GPS, the Contractor must have, maintain, and operate a central monitoring station and all other equipment required for the complete supervision of all electronic monitoring devices. At minimum, the central monitoring station shall:

A. Provide monitoring services and customer support 24 hours per day, 7 days per week, including holidays.

B. Provide a toll free telephone hot line for Judicial Branch support and inquiries.

C. Have monitoring center staff and technical assistance representatives fully trained and certified by the original equipment manufacturer in all monitoring center systems, operations, policies and procedures, and home monitoring equipment.

D. Have a sufficient number of workstations to accommodate data entry, data changes, report printing and other functions without disrupting the monitoring process.

E. Provide an uninterruptible power supply (UPS) for an instantaneous backup power source to prevent the loss of information and data for up to 12 hours duration.

F. Backup data on a daily basis to prevent data loss due to system or power failure.

G. Internet Capabilities
- Must allow access to client tracking and monitoring information through the internet.
- Must provide notification of violation via the internet.
- Allow for remote access of internet information.
- Allow referring agent at a minimum to, enroll, modify, terminate, generate reports, or otherwise perform client case activities.

Note: Additional weight will be given Contractors who can perform RF and GPS web based functions on the one platform.

4. ALTERNATIVE/ADDITIONAL SYSTEMS

Respondents may submit pricing for alternatives and or additional monitoring systems for evaluation and consideration by the Judicial Branch. Alternative monitoring systems may include but not be limited to the monitoring options outlined in Paragraphs A-C below.

The Judicial Branch reserves the right to test and or contract for one or more proposed alternatives, at its discretion, throughout the term of this contract.

A. Remote Alcohol Testing
- This system must be able to detect and measure levels of alcohol.
- Provide for in-home testing as well as remote testing off site and field staff offices.
- Provide a system for client recognition and verification.
- Provide a system for violation notification.

B. Mobil Monitoring Unit

- Must be able to identify a specific signal for each client being monitored with in a specified range.
- If possible, this unit should not only provide a serial number of the client, but name as well.
- Must provide download capability.

NOTE: The Judicial Branch has recently implemented an Internet System. Although this is not a requirement for award of this contract, preference may be given to those Contractors whose product is internet compatible.

C. 800 Telephone Technology

- Provide client-tracking capability via telephone from any location 24 hours a day 7 days a week.
- Must provide client recognition and verification.

5. REPORTING REQUIREMENTS

The Contractor shall provide monthly statistical reports that will include, but not be limited to the following: the number of clients added/removed by date and location, the number of indigent hookups/removals by date and location, the number of lost/damaged units, the number of tampers, billing/fee collection, the number of active participants for RF and GPS broken down by referral source, and the number of violations. All information should be regional, able to be broken down by office location, or state wide in aggregate form.

The system proposed must include one simple to read report format that accommodates various levels of monitoring and reporting. The system must be flexible so that changes to the reporting format can be made if requested by the Judicial Branch.

6. MONITORING OF VIOLATIONS

Notification of client incidents shall be sent in multiple formats (i.e. beeper, text message, fax, phone, or email) as requested by the supervising officer. The Contractor shall provide a system that allows for notification parameters to be pre-programmed on a per client and/or per officer basis. Notification time frames may range from immediate (15 minutes from detection) to next business day notification. The notification policy for client violations must be flexible and provide for multiple distinct levels of security.

7. REPAIR OF EQUIPMENT

The Contractor shall be responsible for the repair and maintenance of all equipment provided under this contract (including battery replacement). The Contractor must provide on-site repair or replacement of all equipment within 24 hours (7 days a week) from the time a service call is requested.

8. **SERVICE REQUIREMENTS**

The Contractor must have an office in Connecticut to conduct all business and communications between State representatives and program participants. The Contractor shall be responsible for the following:

A. Equipment Installation

- In all cases, the Contractor shall install and field test equipment and set the range of detection in accordance with the environment at the client's residence or referral agent's office.
- The Contractor shall not provide equipment to a client or third party for self-installation.
- The Contractor shall manage and coordinate the installation of all telephones, telephone lines and data lines as required at the client's residence.
- The Contractor shall notify both the referring agent and/or the supervising officer when initial hookup is completed.
- The Contractor shall repair the equipment at the client's residence or referral agent's office.
- Equipment installation shall be in accordance with the service time frames specified in Paragraph 8G.
- ALL Juvenile installations/service requests require the presence of a parent or guardian.

B. Equipment Retrieval - The Contractor shall be responsible for retrieval of all equipment from the client's residence, unless specific arrangements have been made in advance to allow the client to drop off the equipment at a field office for pickup by the Contractor. This shall not relieve the Contractor of its retrieval responsibilities.

C. Establishment of Telephone Blocks - The Contractor shall be responsible for obtaining all available telephone call blocking measures for telephone services provided to indigent clients referred under this contract. Any charges which result from the Contractor's failure to obtain an available block shall be paid by the Contractor.

D. Range of Detection for Equipment - The Contractor shall set the range of detection for the equipment installed in each client's residence according to the environment of the residence. The range and its operating distance shall not be disclosed to the client.

E. Equipment Loss or Damage - The Contractor shall be liable for equipment loss or damaged during the contract term. The Judicial Branch does not collect restitution for these units.

F. Contractor Not to Withhold Service - Under no circumstances shall the Contractor deny or withhold services or equipment to a client referred by a Judicial Branch agent without the knowledge and consent of the Judicial Branch.

G. Service Time Frames - The Contractor must provide:

- Monitoring services and customer support 24 hours per day, 7 days per week.
- Installation and troubleshooting of equipment at sites identified by the Judicial Branch within 24 hours notice, 7 days per week. If a phone installation is required, final hook-up shall be within 24 hours of the phone installation.
- Installations for juveniles must be completed within 8 hours of notification or installation of a phone line.
- No installations shall occur after 8:00pm with out prior approval from the referring agent.
- Telephone line installation – every effort shall be made by the Contractor to assure phone line installation is completed expeditiously.
- In the event of a delay in a telephone installation, a cellular model should be available for use.

H. Complaint - Inquiry Process - The Contractor in conjunction with the Judicial Branch, shall design and implement a Complaint-Inquiry process for addressing and documenting all complaints and inquiries regarding the Contractor's service and/or equipment. Any changes in Contractor's service and/or equipment require prior approval by the Judicial Branch.

I. Client - Handout
The Contractor shall develop an instructional handout for clients in English and Spanish. Such handout must be clear and concise in its content and printing and shall provide contact information in case of questions or problems.

J. User Manual - The Contractor shall develop an information manual for the Judicial Branch employees. The manual, at minimum, shall address all procedures and contact information.

K. Communications in Spanish - The Contractor must have the capability to provide Spanish speaking installers when required. The percentage of clients that require Spanish speaking installers is approximately 5%.

L. Court Testimony – Although rarely required, the Contractor must testify regarding individual participant activity and provide expert testimony regarding the monitoring equipment technology and its use.

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M. Training - The Contractor must provide training services to Judicial Branch employees and Judicial Branch contractors as required. Training must include, at minimum, an operational overview of the equipment; procedures for initiating/enrollment, terminating and changing the parameters of the monitoring function; interpreting system reports; and process for responding to violations. Training can not be conducted for all members at one time, regional sessions will be required. The Contractor shall provide on-going training, as required, throughout the term of the contract.

N. Collection of Fees - The Contractor, when ordered by the Judicial Branch, will be required to collect and be accountable to the Judicial Branch for fees collected from clients for the provision of services. Contractor must provide a monthly report of fees collected. Client fees collected during the month are deducted from the next monthly invoice. Fees are not prepaid.

If a client is ordered to pay, but does not, the referring officer should be notified and may take further action.

9. EQUIPMENT UPGRADES

Whenever the Contractor announces the availability of new equipment of superior performance to the equipment provided under this contract, the Judicial Branch shall have the option to replace its equipment with the newly announced equipment without increasing the per client costs quoted under this contract.

State of Connecticut

JUDICIAL BRANCH

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Memo To: CSSD Staff

From: William H. Carbone
Executive Director- Court Support Services

Date: September 25, 2008

Subject: Interim Protocol: Global Position Satellite (GPS) – Supervision and Reporting Instructions

CSSD is presently reviewing policies and procedures to make certain we obtain expert monitoring / tracking analysis and accurate information about GPS monitoring results from our contractor Group 4 Securicor (G4S) and the GPS subcontractor Pro Tech Monitoring. Until our policies are revised, this interim protocol is to be implemented immediately. Supervisors must ensure that this protocol is reviewed and understood by CSSD staff responsible for GPS supervision.

1) All GPS cases, whether active or passive, will be reviewed each day by the CSSD employee (probation or bail) responsible for the supervision of the GPS condition.

2) In all cases where GPS is utilized, the Supervisor will designate a second employee, other than the employee to whom the case is assigned, to provide daily monitoring and review of the case when the primary employee is unavailable. If both the primary and secondary employee are unavailable at the same time, it the responsibility of the Supervisor to assure the review of the GPS movement, alerts and any other report information each day. (This includes weekends and Holidays.)

3) If a CSSD employee receives an alert and/or possible violation notification, the CSSD employee must respond in an appropriate manner within 24 hours.

4) If a CSSD employee has a routine inquiry related to any monitoring report(s), equipment or any other information related to GPS services, the employee should contact Pro Tech Monitoring staff by phone @ 888-858-9938.

5) If the employee is requesting expert monitoring / tracking analysis, the employee should consider the information being analyzed and case circumstances and determine if graduated sanctions are appropriate until the expert monitoring / tracking analysis is complete and reviewed by CSSD.

6) In order to obtain an expert monitoring / tracking analysis report from G4S, the CSSD employee will need to complete the following steps.

   a. Send an e-mail to the following contact points and include confirmed receipt requested:
      i. Jesus Borroel, G4S Asst Manager @ jesus.borroel@us.g4s.com
      ii. Helm of G4S 24/7 Monitoring Center @ monitoring_center@us.g4s.com (please note the underscore "_" between monitoring and center)
      iii. Supervisor of CSSD employee making the request

   b. Subject line must state: **"URGENT REQUEST for Expert Analysis"**

   c. The e-mail must include the following:
      i. The requesting employee's first and last name
      ii. The requesting employee's office address
      iii. The requesting employee's office telephone number
      iv. The requesting employee's mobile phone number
      v. The requesting employee's e- mail address
      vi. Client's first and last name
      vii. Transmitter number
      viii. Date(s) and time(s) in question
      ix. Areas of concern (may include but not limited to: tracking location, monitoring location, GPS reception, cellular reception)

7) G4S will provide a response as soon as possible, but no later than 24 hours from date of receipt. However, depending on the amount of data interpretation (30 days, 60 days etc.) or analysis of the equipment, additional time may be required. In these instances, G4S staff will notify the requesting party the next business day of the approximate time required to complete the analysis.

8) Upon receipt of the expert monitoring / tracking analysis report from G4S, the CSSD employee must confirm receipt of the expert monitoring / tracking analysis report via reply e-mail. Reports should be reviewed with the CSSD employee's supervisor before any action is taken.

If you have any questions concerning this protocol, please contact Program Manager Michael Aiello at 860 721 2185 or Chief Probation Officer William Anselmo at 860 721 2151. Thank you for your cooperation with this matter.