

Institutionalization of Problem Solving, Analysis, and Accountability in the Port St. Lucie, Florida Police Department

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Abstract

This report is a synopsis of results of a collaborative partnership by the Port St. Lucie, Florida Police Department (PSLPD) and Dr. Rachel Boba that has sought to increase the effectiveness of crime reduction efforts in the agency. The initiative began in 2004 and has evolved through a “practice-based evidence” approach over the last 7 years into a system of policies, procedures, practices, and products for implementing problem solving, analysis, evaluation, and accountability for effective crime reduction. The result has been the creation of a new organizational model for crime reduction called the *Stratified Model of Problem Solving, Analysis, and Accountability*. This report describes the phases of the model’s implementation in the department, explains the major events and accomplishments in each phase, presents the process and impact evaluation results, and discusses the results and their implications. Two important themes that arise from this work are that to be successful in improving crime reduction efforts police departments should: take a practice based-research approach and also ensure that strong leadership drives the organizational changes that are necessary.

Introduction

This report is a synopsis of results of a collaborative partnership by the Port St. Lucie, Florida Police Department (PSLPD) and this researcher that has sought to increase the effectiveness of crime reduction efforts in the agency. The initiative began with a single purpose, which was to institutionalize problem analysis within the PSLPD over an 18 month period. From January 2004 to May 2005, the PSLPD was one of five sites selected (with Chula Vista, California, Raleigh, North Carolina, Madison, Wisconsin, North Carolina State University) that was part of a project funded by the Office of Community Oriented Policing Services (the COPS Office) to institutionalize analysis for problem solving (North Carolina State University 2010). However, work started in 2004 continued beyond the grant period without funding. Subsequently in 2007, another grant was awarded by the COPS Office to evaluate

the implementation of an organizational model for crime reduction over the entire time period. This report presents the evaluation results of the initiative from January 2004 through December 2010.¹ Except where indicated, the statistical information reflected in the figures herein was provided by the PSLPD.

In the last 7 years, the initiative, which began by focusing on analysis for problem solving, has developed into the implementation of a system of policies, procedures, practices, and crime analysis products for problem solving, analysis, evaluation, and accountability. In other words, the PSLPD has institutionalized its crime reduction efforts with the consistent use of the problem-solving process that is driven by systematic analysis and with a structure of accountability and evaluation. The initiative has evolved through a “practice-based evidence” approach that shares the basic idea with evidence-based practice (Sherman 1998; 2002) that changes to policies and practices are directed by theoretical constructs and systematic evidence. However, the changes made through a practiced-based approach are not the outcome of artificially constructed research studies, but of collaborative interaction between the researcher and the practitioners (Boba 2010).

The practiced-based approach of this partnership has focused on bringing established research results on what “works” in crime reduction into the practical setting in order to both develop and implement systematic crime reduction, crime analysis, and accountability strategies. The primary outcome of the initiative has been the creation of a new organizational approach to crime reduction through the collaboration of the researcher and agency staff. This approach incorporates the best strategies used in traditional policing, CompStat, as well as other types of policing, such as hotspots policing, problem-oriented policing, and intelligence-led policing, and is called the *Stratified Model of Problem Solving, Analysis, and Accountability* (Boba and Santos 2011)—hereafter referred to as the “Stratified Model.” Because this report seeks to present the initiative over 7 years, instead of describing the work in detail or discussing each iteration of the Stratified Model’s development, it focuses on the overall development of the

1. Resulting in the publication entitled, “Institutionalizing Problem Solving, Analysis, and Accountability: Evaluation and Guidebook” (Cooperative Agreement #2007CKWXK007).

approach, the implementation phases of the Stratified Model, and the major accomplishments achieved by the PSLPD.

What follows in this introductory section is background information about the City of Port St. Lucie, Florida and the PSLPD as well as an overview of the Stratified Model. The subsequent sections include 1) a description of the evaluation methods and data used in this research as well as the phases of implementation, 2) an explanation of the major events and accomplishments in each period and phase of implementation, 3) a presentation of the process and impact evaluation results, and 4) a discussion of the results and their implications.

About Port St. Lucie, Florida, and Its Police Department

In January 2004, when this initiative began, the city of Port St. Lucie, Florida, was 100 square miles with a population of 111,200. As of December 2010, it was more than 120 square miles with a population of more than 164,000. It is primarily made up of single family homes and strip malls, has recently opened a large civic center complex, and has begun to draw business from the medical, bio-technology, and movie production fields. Notably, the city of Port St. Lucie has grown significantly during the last 20 years with an increase in population of about 112,000 (i.e., from 55,000 in 1990 to 164,000 in 2010). In the last 10 years, the square mileage of the city has increased from 75 square miles to more than 120 square miles (City of PSL 2011).

The city's UCR Part I Crime Rate per 100,000 in 2009 (2,559) was relatively low in comparison to other cities its size as well as to the national average (3,465) (FBI 2011). It consistently ranks within the lowest 15 percent to 20 percent of cities with more than a 75,000 population in the United States in a crime comparison analysis (Morgan, Morgan, and Boba 2010). Thus, although crime counts have increased over the last 20 years, the crime rates have decreased. During the last 7 years, the number of authorized sworn officer positions in the Port St. Lucie Police Department (PSLPD) peaked—in 2008 it was at 262; however, due to the recent economic downturn, the agency is down to 206 sworn positions as of April 2011.

Stratified Model Overview

For problem solving, analysis, and accountability to become institutionalized in a police organization, they must be an integral part of the organizational mission and its operations. Thus, the *Stratified Model* is an approach through which problem solving, analysis, and accountability processes are infused into the existing organizational structure and daily business of a police agency with the goal of enhancing the effectiveness and efficiency of crime reduction efforts that may already be occurring, but not systematically and with only sporadic accountability (Boba and Santos 2011).

The Stratified Model is based on the assumption that the problem-solving process is effective for *all* levels of problems addressed by police. The Stratified Model distinguishes among different types of problems based on their complexity, which is most easily understood in terms of the temporal nature of their development. That is, simpler problems, such as isolated incidents, are manifested over a very short period of time, where more complex problems, such as problem locations, develop over a longer period of time. Although a particular problem can sit anywhere on this continuum, in the Stratified Model, they are broken down into three temporal categories: 1) immediate problems: individual calls for service and crimes (incidents and serious incidents), 2) short-term problems: repeat incidents and patterns, and 3) long-term problems: problem locations, problem areas, problem offenders, problem victims, problem products, and compound problems.

In fact, problem complexity is interrelated in that, by systematically identifying less complex problems (e.g., immediate or short-term problems) and responding to them effectively, long-term problems can be prevented. The Stratified Model specifies that each level of problem requires a different level of analysis that is action oriented and serves to prioritize problem-solving efforts, to understand the underlying causes of a problem, to direct police response, and to evaluate response effectiveness.

The Stratified Model is also based on the assumption that the hierarchical nature of police organizations is an effective organizational structure for facilitating problem-solving

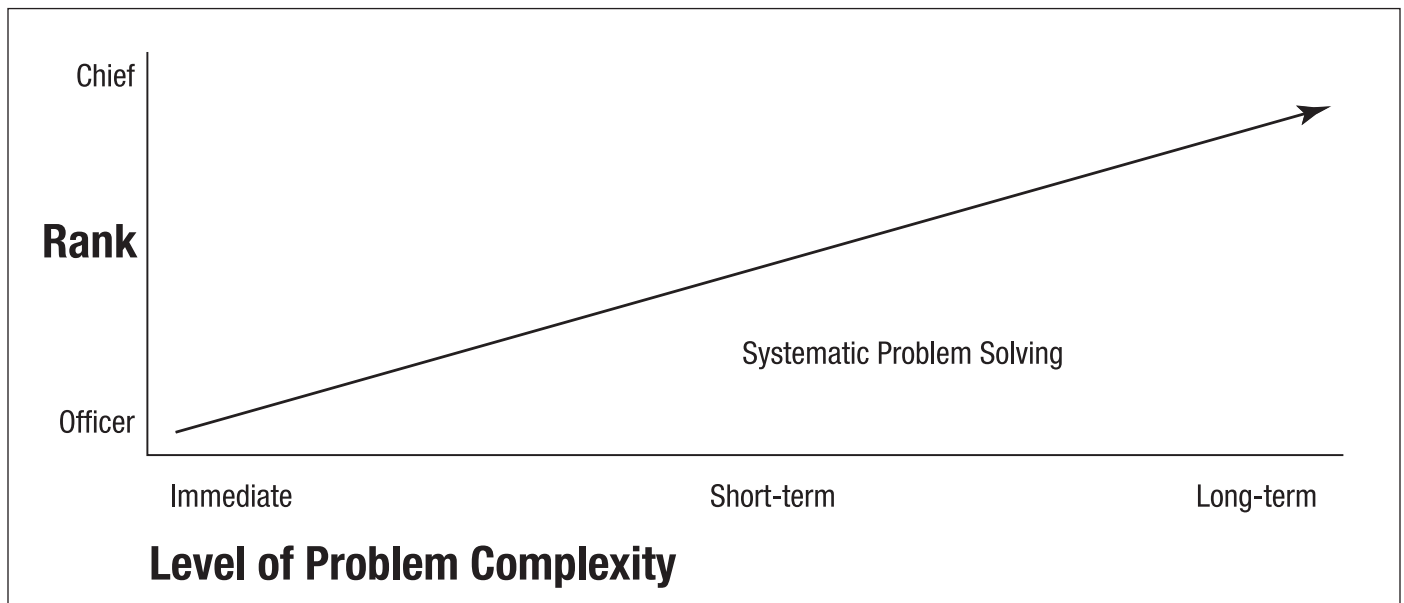


Figure 1

activities and that responsibility for problem solving is to be stratified by rank within an organization according to problem complexity. That is, less complex problems are assigned to lower ranks and more complex problems are assigned to higher ranks. Figure 1 illustrates this idea.

Similarly, the Stratified Model assumes that the hierarchical structure already established in most police agencies is effective for ensuring that crime reduction efforts are

systematically carried out successfully and evaluated (i.e., sergeants hold officers accountable, lieutenants hold sergeants accountable). Figure 2 illustrates how both problem solving and accountability are stratified by level of problem complexity within the Stratified Model.

Lastly, the Stratified Model requires a stratified and formalized meeting structure to facilitate accountability. Similar to the stratification of crime analysis and problem

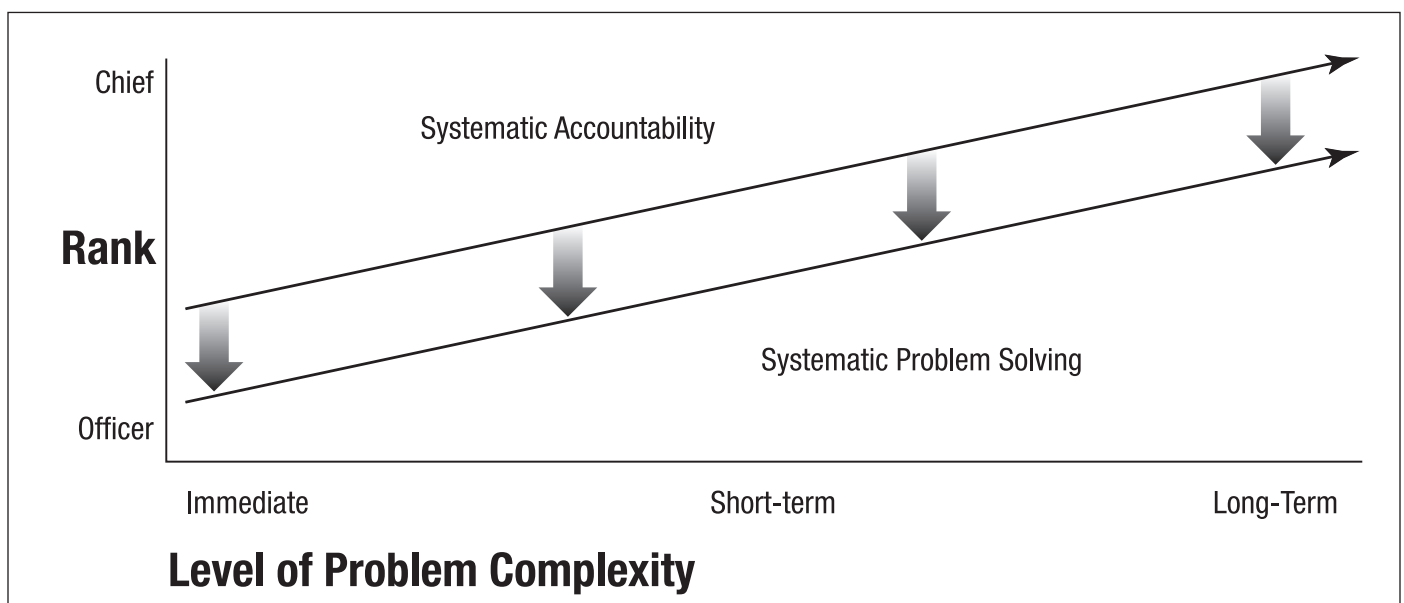


Figure 2

solving, the accountability structure coincides to the complexity of problems in that different types of meetings are conducted to discuss different levels of problems. For example, daily meetings are action-oriented and facilitate accountability for immediate activity, weekly meetings are action-oriented and facilitate accountability for short-term activity; both monthly and semi-annual meetings are evaluation-oriented and facilitate accountability for long-term activity and the overall impact of the agency's crime reduction efforts at every level.

This has been a brief description of the Stratified Model and illustrates its current form. Although this final version looks very similar to the one first proposed and implemented in the PSLPD, over time it has been refined and enhanced through the collaboration between the researcher and the agency (i.e., practice-based approach). Consequently, the following sections provide a succinct glimpse into this partnership and the implementation of the Stratified Model in the PSLPD, highlighting the most important aspects of the implementation to show the successes and challenges that were faced and how they were overcome, so that other agencies can learn from the PSLPD's experience.

Evaluation Methods and Data

Because this initiative mainly sought to make changes to the organizational structure and capacity for problem solving, analysis, and accountability in the PSLPD, the evaluation examines the processes and changes within the organization, with some assessment of the impact that these changes may have had on crime levels. At the beginning of the initiative in 2004, a needs assessment of the organization was conducted in which the researcher documented the history of the organization, organizational policies and crime analysis products, observed practices within the agency, and interviewed key personnel (Boba 2005). The results of the needs assessment are used as the initial measurement of practices (baseline) in the agency.

The data collected, once the initiative began, sought to measure changes during the 7 years of implementation and were primarily qualitative and centered on documenting and observing the organization, its problem-solving practices,

analysis function, and its accountability structure. In addition, personnel perceptions of the changes and the implementation process were collected through interviews and focus groups at various points during the initiative. The data examined to assess the impact that the organizational changes had on crime levels is specific to those crime types that the agency prioritized in their implementation, but also includes a comparison to selected crime in other jurisdictions and personnel perceptions of impact. More specifically, the data and methods include:

- ***Participation in and observation of operational practices and organizational culture:*** Throughout the implementation period (2004–2010), the researcher worked closely with agency personnel through committees as well as individually to implement the model. She also attended and/or actively participated in daily, weekly, and monthly meetings, awards assemblies, bi-annual staff retreats, and other functions (e.g., crime analyst interview process, crime/intelligence analysis unit development).
- ***Personnel interviews and focus groups:*** Informal discussions, as well as formal interviews and focus groups, were conducted at every level within the agency at various points during the 7 year period. These were used to solicit perceptions of individuals about the implementation process, to further understand the organizational dynamics and relationships within the agency, and to solicit perceptions of individuals about the success of the Stratified Model in reducing crime in the community.
- ***Content analysis of meeting minutes and departmental policies:*** Examination of minutes taken in meetings before and while the Stratified Model was implemented was conducted to document the changes made in both the purpose and scope of accountability meetings. Additionally, review of relevant and new department policies was also conducted.
- ***Content analysis of agency data systems, crime analysis products, and technology development:*** Documentation and review of the data systems, the number, type, and

quality of the crime analysis products, and advances made in technology systems were conducted to determine the types of changes made in these areas.

- **Crime data:** Construction site burglary, theft from auto, and residential burglary data from PSLPD were used to examine the impact on crime. Theft from auto rates of neighboring jurisdictions were used to assist in making conclusions about any distinct impact the PSLPD had on these crimes.

The implementation of the Stratified Model in the PSLPD began in January 2004 and is still ongoing as of the publication of this report. For this evaluation, the implementation of the Stratified Model is separated into a pre-implementation period and three distinct implementation phases that are used as a framework for presenting the work that has been conducted and the changes that have been made over seven years. These will structure the discussion of both the major accomplishments and challenges as well as the evaluation of the implementation.

The *Pre-Model Period (1980–2003)* serves as the time from which baseline data for the evaluation was collected and includes the agency's activities from the time the department was created in 1980 to just before the introduction of the Stratified Model in 2004. The first phase of implementation, *Phase I (2004–2006): Initial Implementation*, represents the time when the initial partnership between the researcher and the agency was initiated, the creation of the Stratified Model took place, and the foundation for the implementation began, which included addressing data quality, increasing crime analysis capabilities, imparting new knowledge to personnel about crime reduction strategies and crime analysis. The second phase, *Phase II (2006–2008) Intermediate Implementation*, represents the time when modifications were made to the agency's traditional practices for problem solving, analysis, and accountability. During this time, some successes were realized, but struggles arose surrounding competing priorities and agendas within the organization. Finally, the third phase, *Phase III (2008–2010) Institutionalization of the Stratified Model*, represents the time when agency leaders formalized the structure of policies

and practices and through accountability brought about the legitimacy and widespread use of the Stratified Model. This phase also includes adjustments to practices necessary to maintain and adapt the Stratified Model to the ever changing circumstances of the organization.

Stratified Model Implementation

For brevity's sake, this article does not document every detail in the pre-model period or the implementation phases, but focuses on characteristics of the agency that are relevant to the evaluation as well as the major accomplishments and challenges faced in the implementation. Once the implementation is illustrated, the subsequent section examines the key themes that result from this discussion.

Pre-Model Period (1980–2003): Organizational Environment and Needs Assessment

In order to develop a plan for institutionalization of problem solving, analysis, and accountability in the PSLPD, it was important to understand the history, culture, and practices of the agency; thus, a needs assessment was conducted to identify organizational characteristics that could support and/or hinder the process (Boba 2005). Conducted in 2004, it revealed many organizational characteristics in the PSLPD that supported the implementation of the Stratified Model. They included organizational flexibility, a proactive and positive crime reduction culture, a foundation of problem solving and community policing knowledge and practices, structural components of accountability, technological capacity, adequate staffing, and manageable levels of crime and disorder.

The department was created in 1980, which made it a relatively young police department and one that was not rigid and entrenched in old traditional styles of policing. It was among the first police departments to adopt both community policing and problem solving in the early 1990s, and implemented a CompStat-like program in 1999. Over the years, the organizational structure was adapted even more to support problem solving and community policing efforts. Patrol officers, supervisors, and managers were geographically deployed by district and responsible for

problem solving in their assigned areas. “District support” officers and sergeants were relieved of normal patrol duties and were tasked with identifying problems and implementing responses to those problems in their assigned areas. Four types of meetings had been regularly conducted since the mid to late 1990s. They included 1) a daily meeting of the chief, command staff, and division managers to discuss what occurred the previous night and immediate concerns; 2) a weekly meeting of line-level police and city department personnel (e.g., code enforcement, parks, and public works) to share information about short-term issues and events in the city; 3) a monthly meeting modeled after New York City’s CompStat to discuss crime reduction and organizational concerns in which managers are held accountable; and 4) an annual staff retreat of all department supervisors to discuss larger issues and goals for the agency.

The PSLPD also had advanced technological resources and support in that officers were issued laptops with wireless connections so they could access data and upload electronic police reports while they were out in the field. These data were immediately available in the records management system and accessible for analysis. In addition, the department had its own staff of informational technology specialists as well as one full-time and one part-time crime analyst. Even though the department was considered to be understaffed for its population, the crime rate in Port St. Lucie was lower than the national average. Overall, officer morale was high and staff seemed accustomed to implementing new programs and ideas.

The needs assessment also revealed potential barriers to implementing the Stratified Model. The largest challenge the agency faced at this time was the lack of systematic crime analysis. Analysts were tasked with data entry and preparation of simple weekly reports and did not conduct pattern or problem analysis. In fact, analysis for weekly and monthly meetings was conducted by sworn personnel themselves using lists of incidents, and pattern analysis was conducted by criminal investigations personnel on an ad hoc and infrequent basis. Because of the lack of effective analysis, problem-solving efforts typically focused on small-scale problems identified haphazardly by community policing personnel with

little to no crime analysis support to understand the problems or evaluate the impact of the responses. Crime mapping was conducted by a city GIS department, not the crime analysts, and consisted of weekly or monthly single symbol maps of crime incidents by district. During the monthly accountability meetings, city personnel displayed these incident maps “on the fly” as requested by the command staff. In addition, these accountability and other meetings were primarily spent reviewing and discussing the details of incidents and repeat call addresses and not as much on responses to them.

Phase I (2004–2006): Initial Implementation

Phase I of the Stratified Model implementation took place from January 2004 to June 2006 (30 months). This phase is characterized by the conception of the Stratified Model and the building of the foundation for implementation, which included expanding the knowledge of problem solving for all personnel and improving the agency’s crime analysis capacity. Importantly, major changes were not made to the agency’s practices or structures, and the initial implementation primarily sought to set the stage for more significant changes that would be made in the future.

The initial structure of the Stratified Model was created by the researcher and was presented to key personnel in the agency and the command staff for their feedback and approval. Once this structure was agreed upon, a steering committee, lead by a patrol captain, was created that included the researcher as well as representation of personnel from a variety of ranks and assignments. Through the creation of subcommittees, the steering committee oversaw all the work conducted during this phase. As noted in the needs assessment, a number of regular meetings were already established for both information sharing and accountability purposes. Although there were no adjustments made to the structure and purpose of these meetings, they were used, during this phase, to communicate progress of the committee work.

Even though most personnel had prior training in problem solving and community policing concepts, it was important to update their training and expand their knowledge, particularly in the concepts of the Stratified Model and crime analysis. Consequently, training of all personnel in

the agency, from line-level officers to commanders, was conducted by the researcher and a patrol sergeant with interest and knowledge in the area. The department-wide training sought not only to start teaching skills necessary to fully implement the Stratified Model, but also to illustrate why the PSLPD was adopting this approach. It covered the components and rationale for the Stratified Model, a review of the SARA process, the initial plan for implementation, and the role of each level of personnel in the plan as well as successful examples of problem solving and analysis that illustrated how improvements in data and technology would enhance problem-solving efforts. Additional training of sergeants, lieutenants, and captains was also conducted by the researcher and the sergeant that emphasized the importance of quality data, the use of actionable analysis products, and the mechanisms for accountability.

Although the PSLPD had been conducting problem solving since the early 1990s, these skills were not integrated throughout the entire department in a consistent way (i.e., specialized personnel were assigned problem-solving duties). To build a foundation for consistent problem solving and crime reduction efforts, two distinct areas were addressed. The first was the development of two committees that decided which data would be examined and what the reports and bulletins would look like for repeat incidents and patterns at the short-term problem-solving level. The second was to conduct a large-level problem-solving project with the researcher's leadership to provide an example for future long-term problem-solving work.

Both the repeat incident and pattern committees were made up of line-level officers, district support officers, detectives, and supervisors. These committees, led by the researcher, determined the format and content of the new repeat incident report as well as decided the general format of the pattern bulletins and how they would initially be disseminated. The committees also made recommendations to the command staff for assigning responsibility of repeat incident and pattern problem solving as appropriate. However, in this early stage of the process, minimal changes were made to the agency's current problem-solving methods and the crime analysis products were provided simply as a resource for current practices.

The PSLPD had not tackled a large, compound problem with a comprehensive analysis, response, and evaluation, so part of building a foundation for this process was to conduct a problem-solving project—which focused on construction site burglary—from beginning to end with the researcher's assistance. The problem was identified by the agency and a subcommittee lead by the patrol sergeant (who conducted the training) worked with the researcher to conduct background research, develop hypotheses, collect data, conduct analysis, implement responses, and evaluate the impact of the responses.

The researcher conducted most of the analysis that was needed during this phase. Although the department had individuals assigned to crime analysis, they were primarily responsible for entering and producing simple information reports and, in fact, left the agency soon after the initiative began. Thus, the researcher led the problem-solving efforts for the compound problem (i.e., construction site burglary) and, with the help of a graduate student (who was the same patrol sergeant who conducted the training), an undergraduate assistant, and an undergraduate volunteer, conducted nearly all of the data collection and analysis. However, significant efforts were also made to improve the long-term analysis capacity of the agency, which included improvements to data quality and the hiring of experienced professional crime analysts.

The researcher also made specific recommendations for improving the agency's data for general analysis purposes. These improvements included streamlining data procedures by eliminating dual entry of crime incidents and creating a process to download data directly into analytical software. Additionally, improvements were made to the electronic police report writing system—adding and removing fields and values within each field that were either unnecessary or missing (e.g., point of entry and method of entry were added)—and report narrative templates were developed for 14 specific crimes in order to standardize the legal and substantive content as well as prompt officers to include information necessary for more effective analysis. Lastly, field interview cards were changed to include variables that provided more information about the setting (e.g., in a park, on the street) and behavior of the subject (e.g., standing, sitting, driving) contacted to assist with analysis.

The agency recognized the need to improve the personnel who conducted crime analysis, so once the two current analysts (one full-time and one part-time) left, the agency reclassified the position from a public service aid to a professional crime analyst, and increased the qualifications, responsibilities, and the salary. A formal interview process was conducted with the help of the researcher, and two full-time analysts with undergraduate and graduate degrees as well as experience in conducting crime analysis were hired. These two analysts are still with the agency as of this report's publication.

Phase II (2006–2008): Intermediate Implementation

Phase II of the Stratified Model implementation took place from July 2006 to December 2008 (30 months). This phase represented a transitional time in which strategic adjustments to traditional practices were being discussed and new procedures were being implemented, though on a small scale (i.e., not department-wide). There were some key successes in this phase, including the fact that the PSLPD was a finalist for the Herman Goldstein Problem Solving Award (2006) for their work on construction site burglary and won the IACP Police/Research Award in 2008 for their implementation of research-based ideas (i.e., the Stratified Model). However, this phase was also characterized by a pushback against these new ideas in that some adjustments were never made or once made were not maintained.

The brunt of the work during this phase focused on continuing to build the agency's knowledge in components of the Stratified Model, implementing specific problem-solving and accountability strategies, fine tuning crime analysis products, and making adjustments to the weekly and monthly meetings. During this intermediate phase of implementation, annual staff retreats were used to present recommendations made by the researcher and the committees for adjustments, discuss and finalize which adjustments would be made, and educate all supervisors and commanders on the new crime analysis products and their uses. In addition, training on crime reduction and the Stratified Model conducted by the same patrol sergeant (who was now a lieutenant) continued for all personnel as part of the in-service and new hire training

programs. Notably, the researcher no longer took part in the training, as the agency took full responsibility for doing this.

The problem-solving adjustments and additions made during this phase concerned repeat incidents, the long-term problem of theft from auto, and patterns of theft from auto. The PSLPD had been addressing repeat incidents (then called "repeat calls") for a number of years before this initiative began. During the first phase of the implementation, the repeat incident report was changed to prioritize particular types of calls, shorten the time period under consideration, and standardize the report in order to make the number of locations with repeat calls fewer and more focused. It was no longer necessary for personnel to sort through pages of repeat call locations to determine whether they should be addressed.

During this phase, the city was seeing a dramatic increase of theft from auto crimes (i.e., 80 percent from 2005 to 2006). Although the city was also growing in population, an analysis of the theft from auto rate per population still showed significant increases. It was determined that another large-scale problem-solving project would be initiated to address this crime from a long-term perspective using the experience gained from addressing the construction site burglary problem. Thus, a committee was formed, analysis was conducted by the agency's new analysts, and responses were developed to address the problem (without the assistance of the researcher). The responses included both general and specific strategies. The general strategies included a systematic media campaign to inform citizens of Port St. Lucie about the significant increase in this crime and ways to prevent it. Since nearly 80 percent of these thefts were occurring at residences, a plan was developed and executed for systematically disseminating this information through newspaper articles, television, and by contacting community groups over a one year period. The specific strategies were also implemented systematically and included responding to short-term theft from auto patterns.

The same lieutenant who played a significant role in the implementation up to this point was asked by the leadership to chair the theft from auto problem-solving committee. He was already assigned to the midnight shift, which was when

most of the theft from auto incidents at residential homes occurred, so he implemented systematic pattern responses and accountability for theft from auto patterns on that shift. Following the Stratified Model, he ensured that once theft from auto patterns were identified by the crime analysts, responses such as directed patrol, bait operations, and field contacts were implemented when and where the patterns were occurring. Also, he helped create the procedures for a volunteer response team to disseminate crime prevention information to homes and businesses in the pattern areas (as the patterns occurred). The crime prevention unit used a large mobile electronic message board to provide information about locking car doors and removing valuables, and to further inform citizens in the particular neighborhood where patterns were occurring. The criminal investigations division also assisted with patterns as requested by the midnight lieutenant (Santos 2011).

Simultaneously, through feedback and input from the researcher and sworn supervisors—specifically the midnight lieutenant implementing the systematic pattern responses—the crime analysis products were further refined to be more actionable and relevant for problem solving. For example, initially the theft from auto crimes making up each pattern were too spread apart, so through discussions with the lieutenant, patterns were tightened up to include only those crimes in a close knit area. In fact, after several months of implementing responses based on the patterns, a standard of a .5 mile radius was used to help focus property crime pattern responses.

As problem-solving practices for patterns became established on the midnight shift, discussions occurred at the agency's yearly staff retreat about implementing these same strategies throughout all the shifts for theft from auto as well as for other crimes. One of the important components of the Stratified Model was that problem solving should be assigned to a rank with the appropriate level of responsibility, so it was recommended by the researcher and key staff that all patrol lieutenants, who were responsible for overseeing patrol operations for all shifts, be assigned the responsibility of coordinating and ensuring problem-solving strategies were employed for patterns occurring in their area on their

shifts. However, the patrol captains did not support this recommendation, and the agency decided that the district support officers and sergeants (i.e., specialized community policing personnel), who worked day shift and who reported directly to the captains, would be responsible. Most likely as a result of this decision, agency-wide systematic problem solving of patterns did not occur during this phase. In fact, when the midnight lieutenant was transferred out of patrol, the systematic problem solving no longer occurred on the midnight shift either.

Although the PSLPD had laptops in all the cars with email and electronic report writing, an intranet site was being developed to increase general communication among personnel as well as to distribute updates of general orders, post off duty opportunities, and provide general information. It was suggested by the lieutenant in charge of developing the intranet site that it could also be used to foster communication and accountability for problem-solving activity, particularly patterns. Thus, an entire module within the existing site was added in which patterns would be posted by crime analysts, and all those responding to or having information about that pattern could post the information on a "thread" or blog about that pattern. However, even though the software was fully developed and functional, this intranet site was only used haphazardly for pattern responses during this phase.

Structural changes were also made to the existing weekly and monthly meetings based on recommendations by the researcher and key staff. As noted in the needs assessment, the agency held a weekly informational meeting among police and other city personnel in which individual incidents and repeat call locations were discussed. The line-level participants provided information to the group and were expected to take it back and inform their respective areas. In September 2006, the name, attendees, focus, and content of this meeting were changed. The newly named weekly COAR (Collaborative Operational Analysis and Response) meeting was attended by patrol district/division captains, district support sergeants and officers, and crime analysts. Notably, once the Directed Area Response Team (DART) was created in Phase III, the lieutenant supervising that unit also attended. Responses to repeat incident locations identified from three

separate repeat incident reports (i.e., selected calls, traffic calls, and alarm calls) were discussed and systematic minutes modeled after the SARA process were used to track the responses and their effectiveness. Little-to-no documentation of these efforts had occurred in the past unless there was some special or outstanding effort.

The monthly Compstat-like meeting, STARCOM, was also changed during this phase. Since 1999, the meeting consisted of specific questions asked by the command staff of the criminal investigations and patrol captains about individual incidents and events occurring in the city over the last month or so and alternating presentations by different patrol districts and divisions (e.g., criminal investigations, records, budget office), so that each presented once every four months. This did not coincide with the Stratified Model's structure of accountability that required meetings to cover activity relevant for that time period (i.e., short-term problems discussed in weekly meetings, long-term problems and evaluation discussed in monthly meetings). Consequently, the changes included having the patrol district captains present every month so that the information discussed was timely and relevant. As part of systemizing the process, a standardized presentation template was developed, and the patrol captains were required to ensure that the same type of information about problem-solving efforts for repeat incidents, patterns, and problems was covered each month.

Phase III (2009–2010): Institutionalization

Phase III of the Stratified Model implementation took place from January 2009 to December 2010 (24 months). The institutionalization phase of this initiative was characterized by significant advances in the accountability processes and strong leadership. While the initial and intermediate phases slowly enhanced accountability, it was during this phase that the Stratified Model became part of the agency's culture. Also, integration of practices within the entire agency was achieved, and adjustments were made to the entire system in order to maintain institutionalization and adjust it as needed as the climate of the organization and the community changed.

At the beginning of this phase, a new police chief was hired who subsequently built upon the current practices creating an environment for institutionalization. Although the foundation was set and many of the operational practices (e.g., crime analysis products, accountability meetings) were established when he arrived, his leadership moved the agency from intermediate implementation to institutionalization of the Stratified Model. It is during this phase that the components of the Stratified Model fell into place through the chief's development of an agency policy, the implementation and enforcement of that policy across divisions (particularly for patterns), the addition of problem-solving resources, the expansion of crime analysis, and a cultural shift in the perceptions of personnel that these efforts were not just "required," but also lead to successful outcomes.

In 2009, a new general order (PSLPD GO 503.2: *Crime and Quality of Life Issues Strategy/Results/Accountability*) for the agency was written by the chief himself with input from the researcher and key staff, which outlined the procedures for problem-solving repeat incidents, patterns, and problems. The policy covered the following areas:

- The roles and responsibilities for problem solving and accountability of all staff
- The methods of documentation for problem-solving activities
- Procedures for a daily command briefing
- Procedures for the weekly COAR meeting
- Procedures and agenda for the monthly STARCOM meeting

During this phase, repeat incidents continued to be addressed, but the systematic problem solving of patterns, especially of theft from auto, became a key focus across the entire agency. In Phase II, the success of the midnight shift addressing patterns did not translate to implementation of the strategies to other shifts and divisions. However, several mechanisms led to the strategies being institutionalized during Phase III. The first was assigning patrol lieutenants the problem-solving responsibility of patterns, which was recommended previously, but not implemented until Phase III. The second

was the systematic use of the intranet site (i.e., “Portal”) for communication within and among divisions for problem-solving efforts. This was facilitated through the chief’s use of the Portal himself as well as the patrol and criminal investigations lieutenants’ vigilance in ensuring that information was documented on the Portal, holding people accountable for doing so, and verifying the accuracy of the information.

In addition, the patrol bureau commander (i.e., assistant chief) made a commitment of resources to pattern responses in creating the DART (Directed Area Response Team) in November 2008, which was a team of one sergeant and five officers who worked flexible shifts and supported patrol in responding to patterns by conducting directed patrols and making field contacts in the pattern areas. Notably, after being created, there were many attempts within the department to use DART for other purposes (e.g., serving warrants), but the bureau commander protected DART and ensured its only responsibility was supporting pattern responses. The criminal investigations division also became engaged in the problem-solving process by focusing on significant incidents prioritized by the chief and actively working with patrol in resolving patterns in addition to investigating individual crimes. This division shifted the focus of its weekly meetings between the lieutenant and sergeants to concentrate on the prioritized cases and the patterns.

Crime analysis was expanded during this phase as well. Even though the repeat incident report and crime pattern bulletins continued to be systematically produced and refined, additional reports were developed to satisfy the chief’s desire to prioritize problem-solving efforts and evaluate the agency’s progress both at the immediate level through a daily briefing report and at the long-term level through an analysis of 3-, 6-, and 12- month trends. The report for the daily briefing was changed by the chief to include prioritized crimes and significant incidents occurring over the last day or two, so that he could ensure that his command staff was responding to them immediately. On a monthly basis, charts and maps that examined prioritized crimes (e.g., theft from auto) of the most recent 6 months were created so the chief could determine whether responses were working or additional problems

were surfacing. Also, a comprehensive monthly report for the criminal investigations lieutenant was created to evaluate the success at every level of that division by individual detective, by district, by crime type, and overall. Importantly, the data used for this report were those cases assigned to detectives tracked in the case management system and the analysis focused on case closures and arrests/clearance rates that were realistic measures for effectiveness of criminal investigations. The report included the most recent 6 months (vs. one month) of data to account for the dynamic nature of crimes that were under investigation.

Even individuals’ perceptions of success of the agency’s efforts were apparent in that personnel at all levels showed satisfaction and a sense of accomplishment when crimes in a pattern ceased. For example, oftentimes crimes in a pattern stopped after responses were implemented, even if no one was arrested or a suspect arrested for some of the crimes occurring within a pattern couldn’t be linked and charged with all of the crimes. When personnel (from officers and detectives to supervisors and commanders) began seeing that their efforts were regularly resulting in success (i.e., the crimes in the pattern stopped), they became motivated to respond to the next pattern in force. In fact, this change in perception prompted personnel (primarily supervisors and commanders) to actively seek out analysis of problem areas and problem offenders before responses were undertaken, which rarely happened before the Stratified Model was implemented.

Evaluation Results and Implications

Each period and phase of the initiative has been described thus far, so the purpose of this section is to identify the common themes of success, the barriers faced, and the impact on crime, respectively. The most interesting, but maybe not the most surprising, result of the evaluation was how the implementation of the Stratified Model in PSPLD occurred in three distinct phases. These were not planned phases, but surfaced as part of this “natural experiment” of the creation and implementation of a new organizational model. As with most organizational change, this is expected. Notably, the phases are seemingly long, but this is likely due to the fact

that the Stratified Model was created and refined through this initiative instead of simply being “implemented” as a pre-existing, previously tested, and recommended organizational model. In the initial phase, much of the ground work was done to prepare the agency for the implementation, but because the agency was not fully prepared, no major changes could be made to the organizational practices. In the intermediate phase, organizational changes did take place to the accountability structure, crime analysis, and problem-solving activities, but many of these either were not maintained or were not implemented throughout the agency because of resistance and pushback by personnel, particularly the division captains. In the final phase, institutionalization finally occurred, which was fostered by strong leadership, resources, and enhanced accountability.

Contrasting the PSLPD and its practices generally from before the Stratified Model was implemented to its practices at the end of 2010, the implementation of the Stratified Model has had a significant and positive impact on the PSLPD and its crime reduction efforts. The agency has seen improvements in its problem solving, analysis, and accountability practices. Examination of all data collected reveals the following major achievements:

- Its crime analysis capabilities have significantly increased. The agency went from having one full and one part-time crime analyst who spent their time entering data and producing lists of incidents to having two full-time experienced and certified professionals who conduct quality, actionable, and evaluative analysis at every level (e.g., immediate to long-term) on a routine basis.
- Through the intranet site, as well as improvements in the accountability processes and meetings, communication has significantly improved among and within divisions (e.g., patrol, criminal investigations, crime prevention) about problem-solving related activities, and especially patterns.
- Before the Stratified Model, the agency focused on repeat call locations and some small-sized problems by a selected few officers on an ad hoc basis, and at the end of 2010 problem solving occurs regularly and systematically at every level from immediate investigations to long-term problems like theft from auto, problem locations, and problem areas.
- The coordination of problem-solving responses and efforts across divisions has significantly improved. The criminal investigations division is fully engaged in assisting with patterns and has begun responding to known offenders. Specialized units, such as DART and district support personnel, support, but do not supplant, patrol’s efforts in addressing patterns and repeat incidents.
- Perceptions of personnel have changed in that problem solving is no longer seen as the responsibility of a specialized unit (e.g., district support) but everyone plays a role, is engaged in responding to problems, and is responsible for their “part” in crime reduction. Each division and ranks’ “part” in this process is realistic in the context of their day-to-day operations.
- Personnel at every level feel as though they have a greater impact on crime because of the focused and prioritized nature of their crime reduction responses that have resulted in either arrests or the activity stopping. In addition, everyone from the chief to line-level officers feel they’re being more effective in their responses to crime and have received positive feedback from the community not only about the information being provided on crime and disorder activity in their neighborhoods, but also about the responses that have been implemented.
- Personnel also perceive that people are being held “more accountable” for addressing the various levels of activity as defined by the Stratified Model through the intranet site, accountability meetings, and interaction with supervisors. This accountability is also seen as consistently administered instead of just being applied to a particular rank or unit within the organization.
- Leadership has been strengthened and has proved to be the key component to the final institutionalization of the Stratified Model. The resource levels, knowledge, and capabilities of the personnel and the organization were not much different in the intermediate phase than in the

last phase—the biggest difference was the increase in the strength of the leadership and persistent accountability.

Negative themes also arose when contrasting the agency and its practices from before the Stratified Model was implemented to the situation at the end of 2010, they include:

- In the initial phase, although the foundation was being built for the model implementation, changes in culture and practices were difficult and somewhat slow because while changes to data systems and analysis products were being made, it was not obvious to personnel how these improvements could help crime reduction efforts.
- During the intermediate phase, there was pushback from higher management positions that hindered and slowed the implementation of the Stratified Model. The pushback primarily dealt with patrol district commanders wanting direct control over those responsible for problem solving (i.e., district support officers who work directly for them versus patrol lieutenants that work different shifts, but in the same areas). The pushback also came in the form of critiquing and debunking the crime analysis information. It was important that the foundation and skills of the crime analysts were solid, so that any pushback could be resisted. Crime analysts were somewhat vulnerable to the whims of commanders and managers who sought to debunk or replace their analysis products in order to have more control over their own workload.
- The most notable theme was that real and meaningful changes were not made for many years. Even though there was one key, mid-level operational manager who not only supported the model, but also implemented the new practices in his own shifts, divisions, etc., and was essentially a “champion” of the initiative, there was not a critical mass of individuals at this level who were pushing the Stratified Model, and most personnel were satisfied with the status quo. For example, even though this lieutenant took the lead on implementing short- and long-term problem-solving efforts, his peers and commanders above him were not convinced to make changes nor did they follow his lead. It was only after an increased strength in the leadership—which dedicated

resources (e.g., DART team), established a formal policy, and held people accountable according to the policy—that institutionalization of the Stratified Model finally took place.

It is difficult to assess how changes within a police organization and the improvement of efficiency and effectiveness of efforts really impacts general crime rates since many factors influence crime and disorder occurring within a city. In fact, changing the way police respond to crime is likely only to have an indirect effect on crime rates, especially in the short term. Since the Stratified Model is an organizational model that assists police agencies in systemizing, prioritizing, and focusing their efforts to reduce crime, an impact evaluation focuses on those crimes that have been prioritized by an agency.

For the PSLPD from 2004 through 2010, the prioritized crimes were construction site burglary, primarily in the first phase, and theft from auto, in the second and third phases. Thus, the evaluation examines trends of these crime types before and during the implementation. In addition, to determine whether any increases or decreases are unique to these crime types and/or to Port St. Lucie itself, the impact evaluation compares these crimes to other property crime occurring in PSL and examines crime rates of PSL to those in other jurisdictions.

Because this analysis examines crime by month, counts are used instead of rates based on population figures, since population figures are only available by quarter or year. Notably, the population and home building was increasing rapidly during this time period, so these charts reflect a more conservative decrease in crime than if crime rates were used. The first crime that was addressed in the initiative was construction site burglary. Figure #3 on page 14 depicts the impact that the PSLPD’s responses had on construction site crime as part of that first large problem-solving project.

The results of the assessment of the problem-solving responses to this crime indicate that overall, single-family home construction site burglaries went down substantially even though new home construction was continuing at the same rate until late 2006 (Boba and Santos 2007: 231).

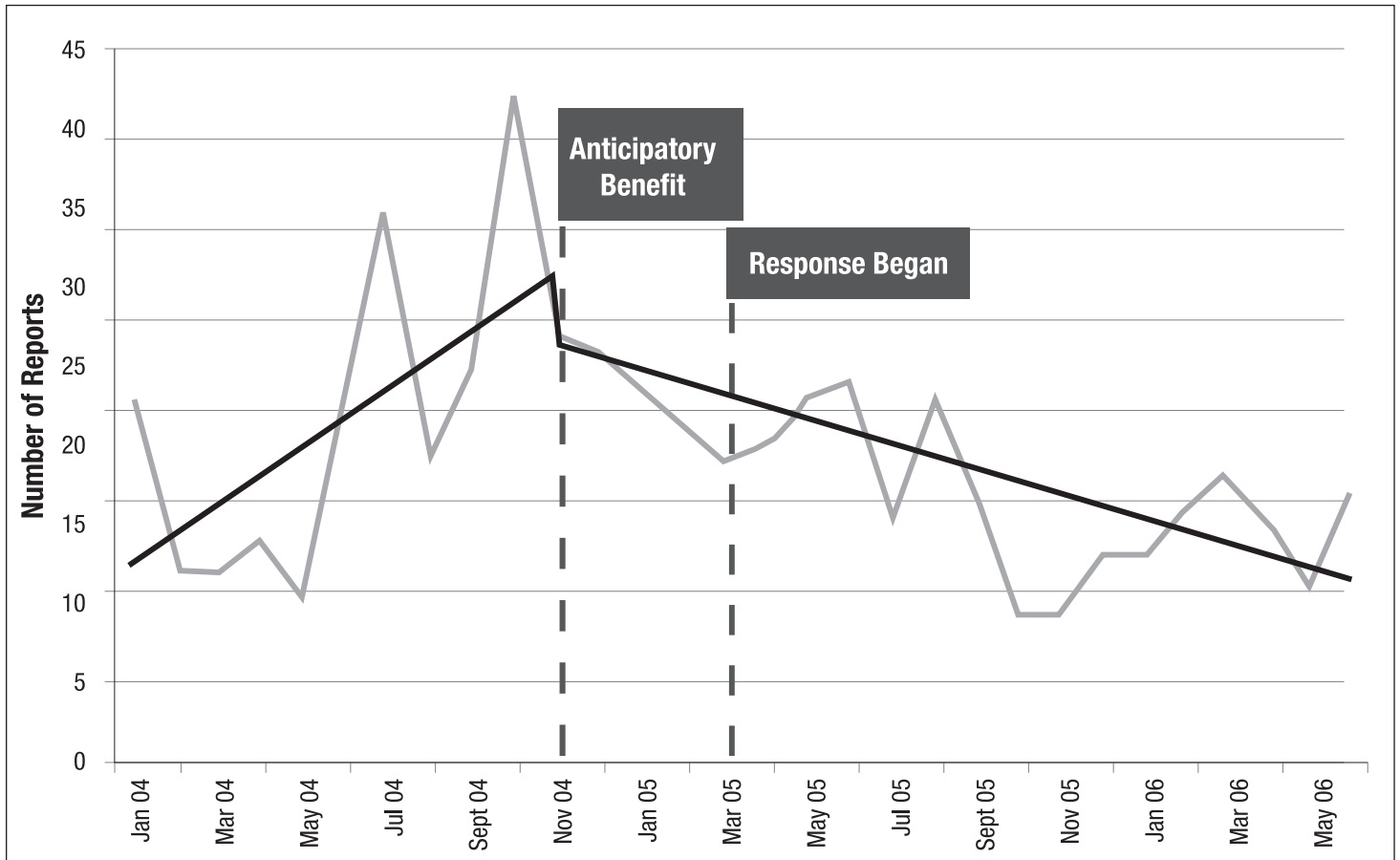


Figure 3

Source: Boba and Santos (2007: Figure 7)

Figure 4 on page 15 illustrates the count of reported theft from autos in Port St. Lucie for the 7 years of the evaluation period. A polynomial trend line reveals that this crime type peaked in 2007 and 2008, but indicates a downward trend in the most recent years, 2009 and 2010. Notably, the population increased from 2004 to 2007 by just over 40,000, which could explain why the crimes spiked in 2008. However, since 2007, the population has increased by around 9,000 (from 155,000 to 164,000) when the theft from auto counts have decreased. Thus, even though the increase in population from 2004 to 2007 may explain the increase in theft from auto at that time, the decrease in theft from 2007 to 2010 cannot be explained by the level of population since it actually increased by 9,000 persons. The fact that crime went down when the population went up implies that the crime reduction efforts of the PSLPD have had an impact on this crime, especially since a large percentage occur at residences, not commercial places,

making population a good comparison variable. Notably, theft from auto is the most frequent Part I crime in Port St. Lucie and was the focus of the institutionalization of both long- and short-term crime reduction strategies beginning in Phase II. As noted earlier, even though some practices were implemented in Phase II for theft from autos, it was not until Phase III that these were fully institutionalized.

Figure 5 (on page 16) was constructed to compare the linear trend lines of the three implementation phases. Using the same data as in Figure 4, Figure 5 illustrates theft from auto counts by month for each phase simultaneously to account for seasonal changes and the relative increases and decreases of crime. Phase I occurred from January 2004 to June 2006 (30 months); Phase II occurred from July 2006 to December 2008 (30 months); and Phase III occurred from January 2008 to December 2010 (24 months).

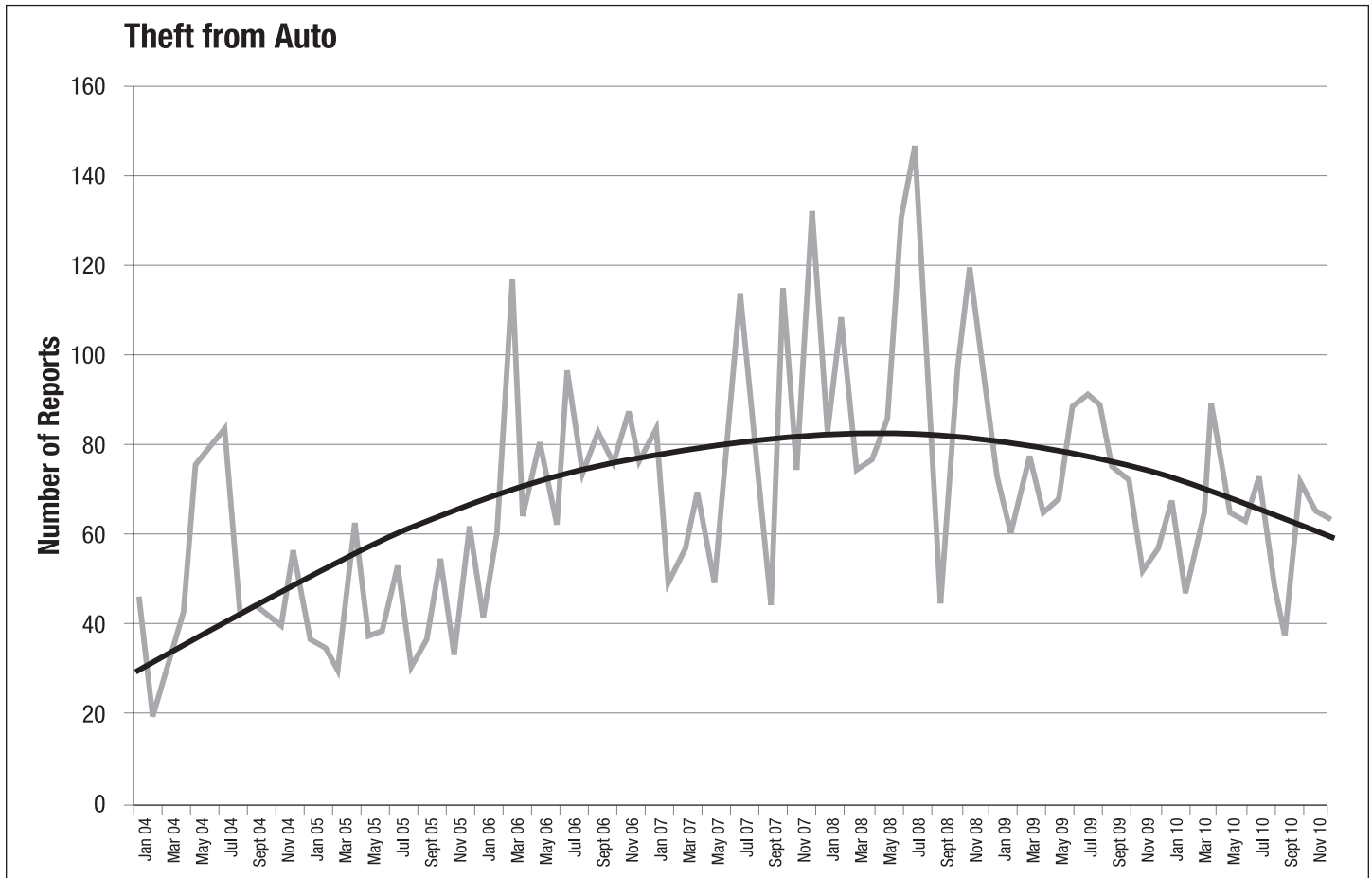


Figure 4

The comparison of the three phases focuses on the linear trend lines instead of the crime counts. Note that these trend lines extend before and after a particular phase based on the overall trend of the data in order to make comparisons. For example, the Phase I trend line is extended 6 months until December even though Phase I ended in June, and the Phase II trend line begins 6 months before the phase begins in July (in both cases estimating 6 months based on 30 months of data). The following are the linear regression equations and the R² value for each trend line.

Phase I $y = 0.6986x + 39.772$ $R^2 = 0.0874$

Phase II $y = 1.077x + 62.745$ $R^2 = 0.1308$

Phase III $y = -0.6926x + 75.533$ $R^2 = 0.1279$

Although it is obvious from the chart, the regression equations show that there was an increase in the slope of

Phase I and Phase II trend lines, but that the Phase III trend line decreases (-.6926) nearly as much as the Phase I trend line increases (.6986). Also, the R² values indicate that although the regression lines are not that good in estimating the variation in the data, the values for all three trends lines are similar. The interpretation of Figure 5 coincides with the results of Figure 4, in that it appears as though a notable reduction in theft from auto was achieved in Phase III, where Phase I and II saw notable increases.

However, to provide more evidence and to understand whether these increases and decreases are unique to theft from auto, Figure 6 on page 17 compares Port St. Lucie’s rates per 100,000 of theft from auto to residential burglary (i.e., another property crime that was not specifically targeted at this time) over the 7 years. Figure 6 shows that where theft from auto decreased in 2009 when the PSLPD

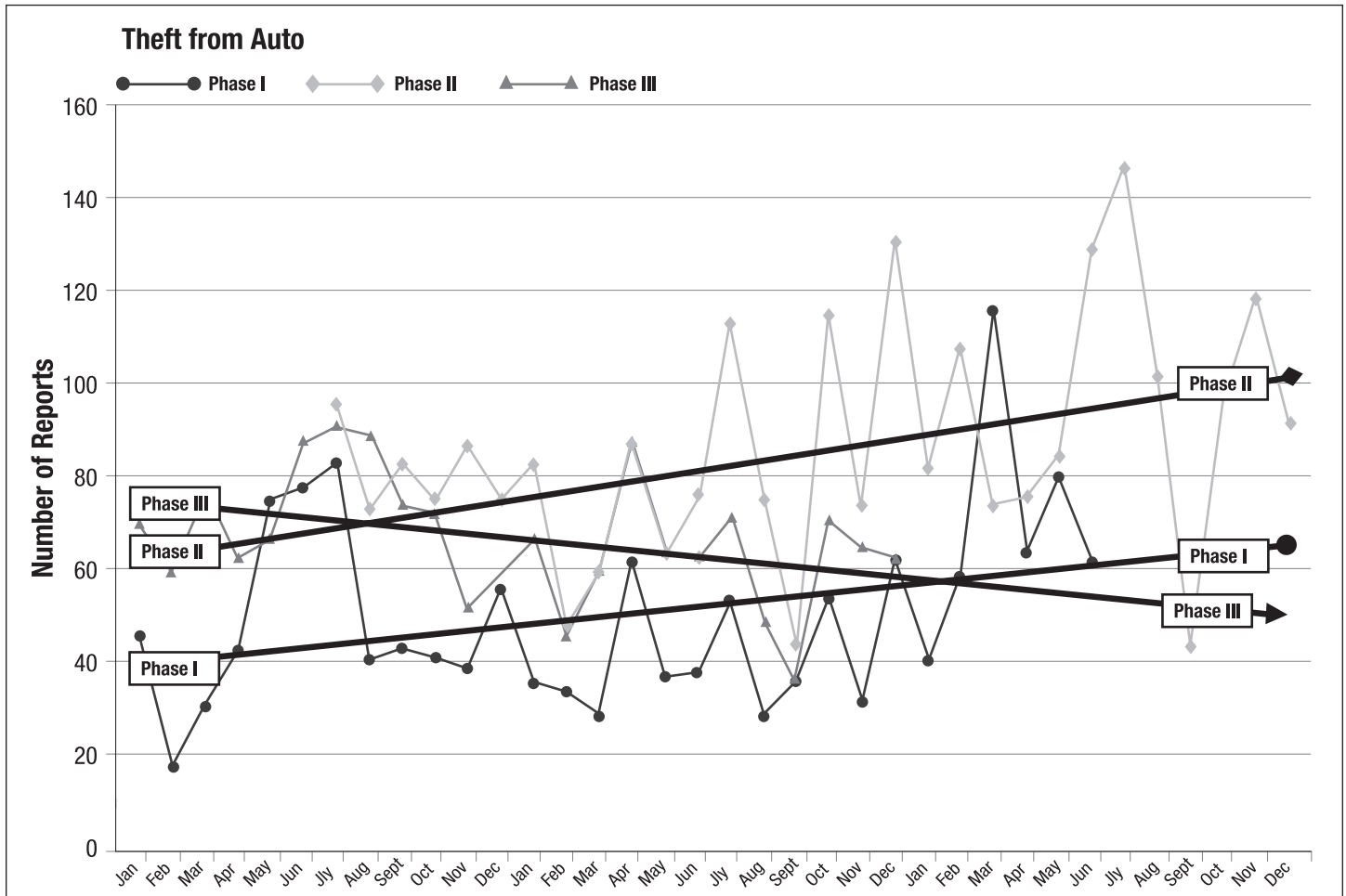


Figure 5

institutionalized the Stratified Model, residential burglary increased and, in fact, surpassed theft from auto. Notably, it was in late 2009 that the PSLPD began also focusing on residential burglary with its systematic crime reduction efforts, but as of this report, it is plausible that not enough time has passed to see any impact.

Lastly, additional evidence comes from comparing theft from auto rates of Port St. Lucie to its neighboring jurisdictions that were not implementing the Stratified Model. Figure 7 on page 17 shows that the theft from auto rate trends in the three jurisdictions were quite different. Ft. Pierce’s rate was much higher than the other two jurisdiction’s rates but steadily declined until 2009 when there was a slight increase. St. Lucie County’s rate remained steady throughout the time period. Port St. Lucie’s rate, albeit lower than Ft. Pierce’s

rate and higher than St. Lucie County’s rate, is distinct in its increases and decreases from the other two jurisdictions with a peak in 2008, but a significant decline in the following years when the Stratified Model was institutionalized.

Because the Stratified Model requires an agency to focus its efforts, it was not realistic to examine the impact of the implementation of the Stratified Model on all crime. In addition, because the indirect relationship of police operations and practices to actual crime rates, the interpretation of these results has been done with caution. Thus, even though it may be difficult to make explicit conclusions from these analyses, it does appear as though the PSLPD has impacted construction site burglary as well as theft from auto through its implementation of the Stratified Model.

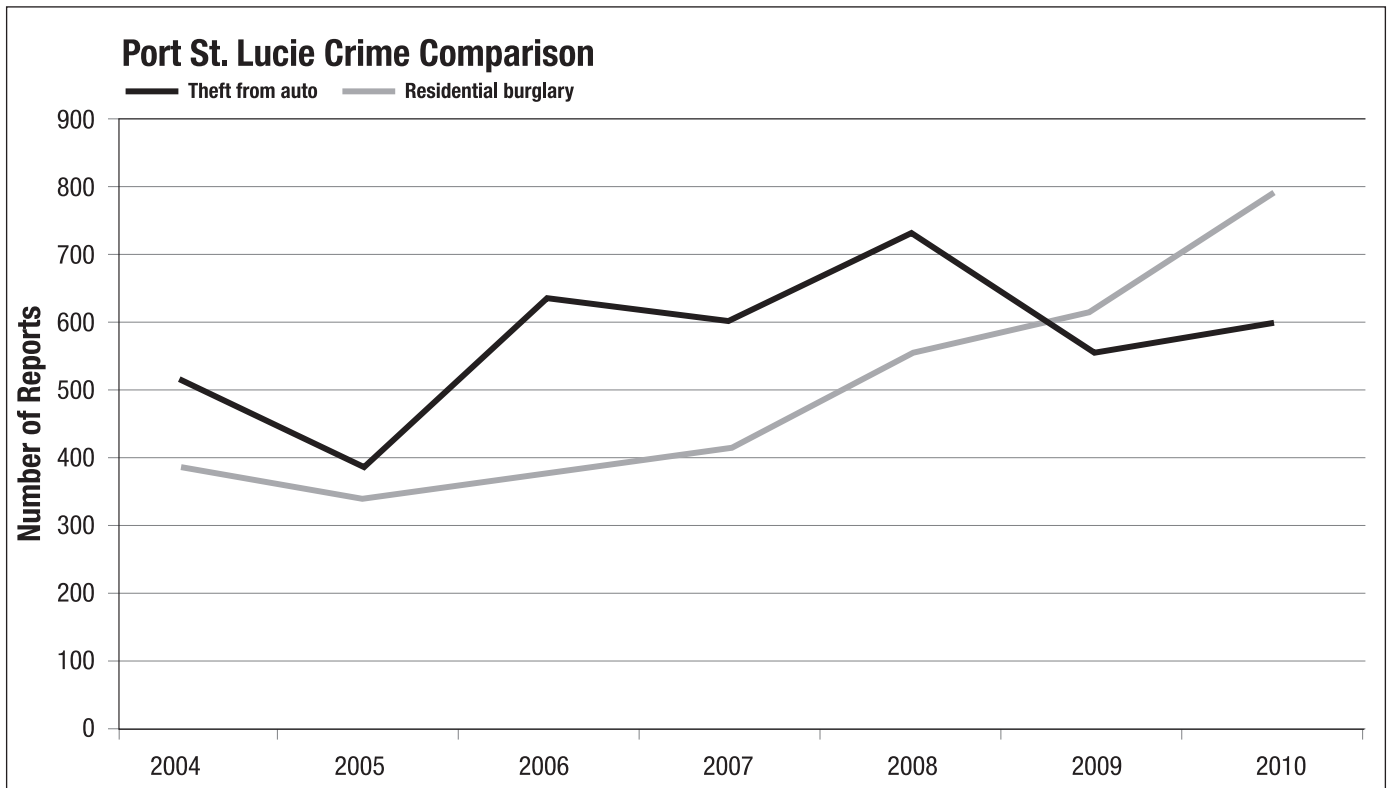


Figure 6

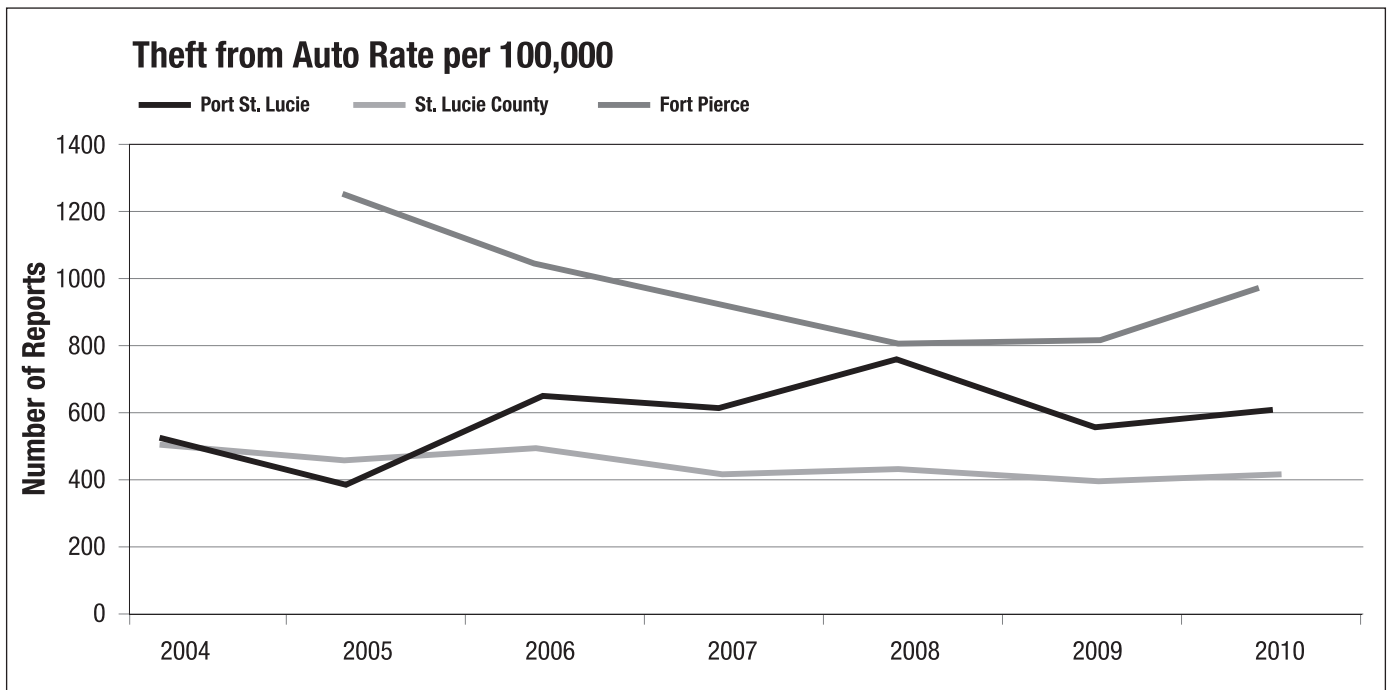


Figure 7

Discussion and Implications

The work conducted over the 7 years considered in this report does not simply represent an implementation of a project, but an organizational initiative to engender change in both the culture and practices of the agency to institutionalize new problem solving, analysis, and accountability practices. Much has been accomplished, yet there are additional adjustments continually being made that focus on the maintenance of the Stratified Model and adaptation to new circumstances within the organization (e.g., significant cuts in personnel) and the community. The following is a brief list of the main accomplishments and challenges discussed in the previous sections:

Pre-Model Period

- Young department open to change
- History of community and problem-oriented policing
- Technologically advanced
- Weak crime analysis capacity

Phase I: Initial Implementation

- Expanded the knowledge and improved practice of large-level problem solving
- Improved crime analysis knowledge and increased crime analysis personnel
- Improved data and technology to support implementation
- No major changes to the organizational structure or overall crime reduction practices

Phase II: Intermediate Implementation

- Implementation of crime reduction strategies within some shifts/divisions
- Crime data and analysis products improved and systematized
- Technology for communication within the agency fully developed
- Structural changes to accountability meetings
- Pushback from commanders and managers against systematic organizational change

Phase III: Institutionalization

- Strong leadership
- Development of a formal policy dictating roles and responsibilities
- Accountability strengthened and carried out based on new policy
- Additional resources provided for crime reduction strategies
- Crime analysis expanded to include long-term products to assist accountability and evaluation of crime reduction efforts
- Perceptions at all levels that efforts were working and that accountability was occurring
- Some long-term components still not fully institutionalized

In the PSLPD, crime analysis is now, more than ever, conducted regularly and results in action-oriented products that help the agency prioritize and guide its crime reduction efforts. Problem solving is structured in that specific personnel are assigned responsibility for different types of problems and all ranks and divisions are engaged in the problem-solving process. For immediate and short-term problems, problem-solving responses have become standardized and are implemented by the entire agency. The accountability structure that was already established has been strengthened and, like problem solving, engages personnel at all levels, appropriately. Meetings are shorter, more focused, and either are action oriented or evaluation oriented. Lastly, PSLPD personnel at all levels recognize the improvements in the efficiency of the agency's efforts, collaborations, and communication, as well as feel more effective in their crime reduction efforts.

In looking at the overall implementation of the Stratified Model in the PSLPD over the last 7 years, there are two important themes that arise as contributing to PSLPD's success that can be used by other agencies looking to implement the Stratified Model. They are 1) taking a practice based-research approach to organizational change for crime reduction, and 2) ensuring that strong leadership drives the organizational changes necessary to improve crime reduction efforts.

What is particularly notable about this initiative is how it came about and was maintained through a collaborative partnership between the agency and a researcher. The practiced-based approach of the partnership focused on bringing established research results on what “works” in crime reduction into the practical setting and through collaboration, both developing and implementing the Stratified Model. It was the changing of routine practices of the organization and continual assessment and adjustments through the collaboration of the researcher and agency staff that led to the PSLPD’s successful outcomes. Several specific factors proved important in the development and maintenance of this partnership, including the proximity of the researcher to the agency, support from grant funding, practical knowledge by the researcher, research knowledge by the practitioners, and, most importantly, trust (Boba 2010). Other agencies will not have to start from scratch as the PSLPD has done to develop an organizational model for crime reduction—they can take what PSLPD has done and tailor it to meet their needs while continually assessing and making adjustments as necessary through collaboration with local practical researchers.

The second key theme that arose during this partnership was that strong leadership was not optional but *necessary* to achieve institutionalization of the Stratified Model. In the first two phases of implementation, the leadership was consistent in that it supported the Stratified Model’s implementation, discussed it, and assigned resources (e.g., crime analysis) while several individuals in the “rank and file” worked hard to make changes to individual shifts, units, or to the agency’s technology. Yet, this was not enough to combat the resistance to change in the culture by personnel at all levels, especially those in management and command positions.

Consequently, institutionalization did not occur until the final phase when the chief of police became active in his leadership by writing a policy that laid out realistic expectations and standardized the crime reduction work for all ranks—and by holding individuals, particularly the management, accountable based on that policy. The implication here is, as with any other changes made in a police organization, crime reduction efforts must not only be supported, but championed and consistently enforced by the chief and command staff of an organization.

As of this report, the PSLPD is still working to improve upon its implementation of the Stratified Model and its crime reduction efforts. For example, the department is enhancing and systemizing its practices to address problem offenders and is seeking to address problem locations and compound problems (e.g., residential burglary) more effectively. Importantly, the process outlined by the Stratified Model requires that the PSLPD’s crime reduction efforts be continually reviewed and adjusted according to the changing needs of the agency and its community. With the system and structure created by the Stratified Model as well as the knowledge, resources, and supportive culture, the PSLPD has the tools to effectively do so.

For a detailed description of the Stratified Model based on PSLPD’s implementation as well as other agencies’ implementation of the model see the COPS Office guidebook entitled, *A Police Organizational Model for Crime Reduction: Institutionalizing Problem Solving, Analysis, and Accountability* (Boba and Santos 2011). Note that this guidebook lays out a framework tailoring the practices, procedures, and the products of the Stratified model to agencies of any size, crime levels, and community characteristics.

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THE OFFICE OF COMMUNITY ORIENTED POLICING SERVICES (THE COPS OFFICE) is the component of the U.S. Department of Justice responsible for advancing the practice of community policing by the nation's state, local, and tribal law enforcement agencies through information and grant resources. The community policing philosophy promotes organizational strategies that support the systematic use of partnerships and problem-solving techniques to proactively address the immediate conditions that give rise to public safety issues such as crime, social disorder, and fear of crime. In its simplest form, community policing is about building relationships and solving problems.

The COPS Office awards grants to state, local, and tribal law enforcement agencies to hire and train community policing professionals, acquire and deploy cutting-edge crime-fighting technologies, and develop and test innovative policing strategies. The COPS Office funding also provides training and technical assistance to community members and local government leaders and all levels of law enforcement.

Since 1994, the COPS Office has invested more than \$16 billion to add community policing officers to the nation's streets, enhance crime fighting technology, support crime prevention initiatives, and provide training and technical assistance to help advance community policing. More than 500,000 law enforcement personnel, community members, and government leaders have been trained through COPS Office-funded training organizations.

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