NEW MEXICO SENTENCING COMMISSION

New Mexico Department of Public Safety Staffing Study: Final Report

Prepared by: Dan Cathey, MPA Paul Guerin, Ph.D.

Prepared for: The New Mexico Department of Public Safety

NEW MEXICO SENTENCING COMMISSION December 2012

TABLE OF CONTENTS

INTRODUCTION	3
LITERATURE REVIEW	4
Early Police Workload Assessment Methods	4
Hazard	
Workload	
Performance Measures	5
Population-Based	5
Authorized Strength	6
Minimum Staffing	6
Geographic Location Based Analysis	6
Comparison to Other Jurisdictions or States	7
Contemporary Workload/Performance Based Methods	7
Police Allocation Manual (PAM)	
Patrol Service Area (PSA)	
International City/County Management Association (ICMA)	
The Managing Patrol Performance (MPP) Model	
Ops Force: Deploy® (formerly Staff Wizard)	
The Vancouver Police Department Patrol Deployment Approach (VPD)	
International Association of Chiefs of Police (IACP)	14
Best Method	14
State Law Enforcement Agencies and Other Law Enforcement Agencies	15
METHODOLOGY	16
Literature Review	
Combining Models	
Events in the Methodology	
Main Ideas of the Methodology	
Methodology Decisions and General Approach	19
PAM Data	19
Data Sources	19
Non-Patrol Modified Work Load Method	
Selection of participating divisions	
Study period length	
Lategorization of the workload	
Employee year value	
Time on each activity	
Galculation of the workload	

SITE DESCRIPTION	25
New Mexico Department of Public Safety	25
New Mexico State Police	
Special Investigations Division	
Investigation Bureau	29
ANALYSIS	
NMSP Results	
Impacting the Data	
Correlation	
SID Results	
IB Results	
CONCLUSION	
REFERENCES	40
APPENDICES	43
Appendix A:	
PAM Data and Policy Variables	
Appendix B:	
Road Mileage For NMSP Districts	
Appendix C:	
Square Mile Area of NMSP Districts	
Appendix D:	
SID Work Type Category Descriptions	45

INTRODUCTION

In April 2012 the New Mexico Department of Public Safety (DPS) contracted with the New Mexico Sentencing Commission (NMSC) to conduct a staffing study of several units of the DPS. Staffing studies of state law enforcement agencies are generally designed to determine the number and allocation of personnel for patrol services. This study includes patrol and non-patrol units. Following this introduction there is a review of relevant literature, a methods section, a description of the site and the DPS divisions and bureaus in the study, an analysis section, a discussion of the results, and a conclusion section.

The ability to prioritize work assignments and an ongoing workload assessment process are two key elements of allocation methods. A well-developed progressive allocation plan must ensure the continued deployment of sufficient personnel to accomplish most critical tasks while also anticipating trends such as political intervention or fiscal constraints which could significantly impact allocation and future staffing capabilities (Butler 2007).

The goal of this study is to complete a staffing study for the Department of Public Safety's New Mexico State Police Uniform unit (NMSP), Special Investigation Division (SID) agents, and the Criminal Investigations Bureau (IB). Early discussions also included the New Mexico Motor Transport Police (MTP), various DPS administrative and support units, but it was eventually decided to not include these units in the study.

To complete this study a number of tasks were accomplished. To prepare for the staffing study we reviewed previous staffing studies of DPS (Bower, et al 2001; Department of Public Safety 2004, 2006, 2007), we reviewed literature relating to law enforcement staffing study methods specifically dealing with staffing patrol agencies. During our review of agencies we contacted various state law enforcement agencies and other law enforcement agencies regarding staffing studies they may have completed.

In addition to collecting background information, we held numerous meetings with DPS staff to discuss the study and focus the research. Based on this information and for a number of reasons, discussed later, we decided to use the established Police Allocation Model (PAM) to calculate staffing levels for the NMSP patrol unit. To calculate staffing for the non-patrol units – SID and IB – we used a modified workload method. This is discussed in more detail later.

As stated, during the project we met with DPS research and administrative staff to discuss the data needed to complete the staffing study and requested these data. This included data by unit being studied (NMSP, SID, and IB), district level data (e.g., miles of road by type of road, road coverage, span of control), officer level data (e.g., calls for services, patrol time, administrative time, medical and vacation use), operations data (e.g., shift length, shift relief factors, and weekly work hours), performance objectives (e.g., administrative time, court time, proactive time, travel time, and patrol intervals), and policy decisions (e.g., calls for service, minimum staffing levels, patrol intervals, coverage per week, and immediate response availability). The data requests are discussed in more detail later.

The analysis section of the report describes the steps we took using PAM to calculate the staffing level of NMSP and the steps we took using the modified workload method to calculate the SID and IB staff levels. We also discuss the results and provide a number of recommendations and a conclusion.

This final report was preceded by several draft reports. Extensive discussions were held following each draft report and agreed upon changes have been incorporated into this final report. Assistance from DPS staff was instrumental in completing this study and without the assistance of DPS staff in numerous ways including routine meetings with us, responding to numerous requests for information, providing the large majority of information used in the analyses, clarifying these data requests, discussing relevant policy issues, and commenting on sections of the report, this study would not have been possible.

LITERATURE REVIEW

Early efforts to calculate the allocation of personnel in law enforcement agencies dealt primarily with the patrol and traffic functions. Today, agencies have found it is essential that all organizational units within an agency be incorporated into the agency's allocation method. The ability to prioritize work assignments and an ongoing workload assessment process are two key elements of contemporary allocation methods. A well-developed progressive allocation plan must ensure the continued deployment of sufficient personnel to accomplish most critical tasks while also anticipating trends such as political intervention or fiscal constraints which could significantly impact allocation and future staffing capabilities (Butler 2007).

According to Butler (2007) advances in the study of patrol allocation methods have been impacted by technological advances in radio communications and computerized patrol dispatch systems, (i.e., CAD systems). CAD systems have increased the ability of law enforcement agencies to efficiently deploy patrol units and implement allocation plans based on computer-generated data. Dispatchers are also able to use geographic information systems (GISs) to produce maps for dispatchers to use to provide responding units the most efficient travel route, and global positioning system (GPS) to track units in the field.

Methods for conducting police staffing and workload analyses include:

- 1. Early Workload Assessment Methods
- 2. Population-Based Rates
- 3. Authorized Strength
- 4. Minimum Staffing
- 5. Geographic Location Based
- 6. Comparison to Other States
- 7. Contemporary Workload/Performance Staffing

Early Police Workload Assessment Methods

Richard Larson began much of the police workload assessment and deployment modeling research in the 1970's with the development of the Law Enforcement Manpower Resource Allocation System (LEMRAS) (Larson 1972). Iterations of LEMRAS were first operationally used for allocating resources by the St. Louis Police Department, which then opened the door for further research and development based on this research.

Hazard

The Rand Institute published one of the first monographs chronicling the issue of patrol allocation in 1975 (Chaiken & Dormont 1975). Chaiken described the first two popular methods that are important to remember as we review workload assessment methods for allocating patrol staff. First, the traditional method for allocating police patrol units to geographical commands was the hazard formula. O.W. Wilson developed the earliest and best-known hazard formula in the 1930s. This formula identifies factors thought to be relevant for employee allocation. Factors frequently used included: the crime rate in each command, arrests, calls for service, and traffic accidents. Implied factors included: number of street/highway miles, and the number of doors to be checked. Wilson's method required that each factor received a "weight" of relative importance. The higher the weighted number the more importance was given to the factor in the final calculation. Problems occur in the final calculations if relatively unimportant factors receive a higher weight than an important factor. The difficulty with Wilson's method was the weights were difficult to determine especially when averaged and applied across a large jurisdiction with variations in levels of crime and population (Chaiken & Dormont 1975).

Workload

The second early method was the workload formula, which used Wilson's process of assigning weights to certain factors. The factor weights reflected the number of employee-hours required to handle the factor. It was not easy to determine the workload weight for some factors, (e.g., what is the best weight to assign street miles or to checking a door). Also, it was easy to double-count employee hours, when factors overlapped. For example, a call for service for a felony resulting in two arrests, how should the employee hours be counted and weighted? Additionally, workload weights could be artificially inflated; for example, an efficiently managed command with a high arrest rate might receive additional staff, because the weight for arrests required more staff in the calculation.

Performance Measures

Subsequent to hazard and workload methods, were methods based on performance measures. The "St. Louis model," introduced in the mid-1960s by the St. Louis Police Department, was one of the first models to utilize a CAD system to track the distribution of calls for service and prioritizing them by perceived seriousness, and response based on need and not just time of call. With advances in CAD technology, other agencies developed workload assessment method that used the new technologies. One of these was Jan Chaiken, and in the 1970s she and staff at the Rand Institute developed a performance-based method. The Rand method was called the Patrol Car Allocation Model (PCAM). PCAM relied on computer resources to estimate the performance of the existing patrol allocation and calculate delays in calls for service, travel times, and workloads. After the agency provided: call rates and service time by hour and day, command area in square miles, response and patrol speed, crime rates, and the number of non-calls for service. The PCAM software estimated performance measures, such as: average units available, preventive patrol frequency, and the average travel time to calls. The PCAM improved on Wilson's methods but the technology and expertise required to run the PCAM was more than most police departments had available. The PCAM was used for an unknown period of time by the New York Police Department and the Seattle Police Department (Chaiken & Dormont 1975).

Population-Based

For years communities have used the technique of calculating an "officer per population rate. This is a simple method to estimate the appropriate number of police officers for a community. Although the FBI does not advocate this approach, by publishing the crime rates across the nation by locale and the number of sworn officers per jurisdiction, the FBI has perpetuated the population-based approach and communities have used these calculations as staffing benchmarks. Population ratios are a popular means of demonstrating police staffing allocations and are used by police executives to justify additional resources. The principal problem with the population-based approach is that it only addresses the quantity of police officers not how officers spend their time, the quality of officer efforts, or community conditions, needs, and expectations (AWC 2010).

Authorized Strength

Another common patrol allocation method is to set the number of police officers in a community based on budget allocation to an "authorized strength", or the number of officers that are authorized in the community budget. It may be problematic for an agency to use authorized strength as a benchmark for police staffing for a couple of reasons. First, it can be challenging for a department to remain at their authorized strength. Given the time required for selection and training of new personnel it is often difficult to replace employees that resign or retire in a timely manner. As a result, departments will be below authorized strength. Additionally, when law enforcement executives and union officials openly complain that a department operates below authorized strength it sends a message to the citizens that the community is not adequately funding public safety (AWC 2010).

Minimum Staffing

Another popular approach to police resource allocation is "minimum staffing." In the minimum staffing approach, police departments define a minimum number of officers required to be on duty. If the number of officers on duty falls below that value, the agency must fill that vacancy.

There are two key justifications for minimum staffing levels. First, in many communities, leaders believe there is a minimum that is needed to ensure public safety. This is particularly common in small communities where there are relatively few citizen generated demands for law enforcement service, but the community, nevertheless, feels that there must be at least two or three officers on duty at all times. The second justification for minimum staffing levels is officer safety. Law Enforcement officers are increasingly insisting (oftentimes through collective bargaining) that a minimum number of officers be on duty (AELE Mo. L. J. 2010). These are both good reasons to maintain minimum staffing levels, but an agency adopting such an approach should understand the potential pitfalls.

First, minimum staffing levels are often only marginally related to demands for service. Second, the minimum staffing levels are sometimes set so high that it results in increasing demands for police overtime. Third, most police officers, given a choice, would prefer to have more officers on the street, and so for that reason, minimum staffing makes sense. However, it is important to acknowledge that increasing the minimum will not, in and of itself, improve the quality of agency performance, nor will it necessarily increase officer safety. Finally, in some agencies the minimum staffing level may become, by default, the optimal staffing level. Agencies often use the minimum level as a method to decide, for example, whether an officer can take a benefit day off. Others build work schedules so as to ensure that the minimum level is on duty, rather than optimizing the available resources (PAR Group 2008).

Geographic Location Based Analysis

Geographic location based analysis is a manpower analysis technique that calculates staffing needs based on a 24 hours a day and seven days a week presence in each geographic location. The geographic location can be any area adopted by the analyst, (e.g., county, NMSP district, etc.). The analysis assumes that all taxpayers are entitled to at least an equal minimum level of service, and consequently, each jurisdiction should have around the clock service with at least one officer assigned to the geographic location for each hourly work shift. Allowances can be made in the calculations for weekends, annual leave, sick leave, etc. An additional assumption can be made to account for supervisory staff. This assumption can be made based on the department's span of control policy, (e.g., one supervisor for every six officers). This analysis is based on an

equal minimum-patrol level in each geographic location and is based on arbitrary boundaries rather than workload indicators such a traffic volume or accident rates (Georgia 2011).

Comparison to Other Jurisdictions or States

A simple technique for calculating staffing needs and one that is used routinely because it is easy to perform, is to compare the staffing levels of one state or jurisdiction with another. An alternative is to compile an average staffing level based on the staffing levels of several jurisdictions and compare the average to ones' own jurisdiction. This technique considers each jurisdictions differences by presenting the data in an "officer per capita" context, and may not adjust for the varying duties and responsibilities of each agency. The technique is fairly simple to perform and can be done quickly and routinely if required.

Contemporary Workload/Performance Based Methods

Many police administrators recognize that the design and implementation of an allocation model for their agencies is only the initial step in an effective personnel deployment strategy. To maintain efficiency, allocation plans must be followed by an ongoing workload assessment plan. Workload assessments are designed to improve efficiency by ensuring the equitable division of work assignments and allow for the most efficient allocation of personnel to meet the operational demands and service goals of the department.

The utilization of workload assessments as part of a personnel allocation plan can have a significant impact on the organizational structure and overall operational efficiency of a law enforcement agency, can assist in determining future staffing requirements, and can serve as a justification for requesting increases in fiscal appropriations to meet future staffing needs. Since it is to be expected that workloads may fluctuate due to any number of factors, such as changes in the demographics of a particular district, it is essential that workload assessments be conducted on a regular basis to maintain effective deployment of manpower and to maximize the utilization of resources.

Factors to be considered in any workload assessment include the number of employees needed to complete each particular assignment, the type of tasks, the complexity and the volume of tasks to be performed, and the time needed to complete the assignment. Another variable that must be addressed in any workload assessment is the relative importance of each task to the mission of the agency. The ability to effectively prioritize workload assignments, with a greater proportion of resources dedicated to tasks deemed to be of critical importance, is an essential element of any viable personnel allocation plan.

A critical aspect of workload assessment is choosing the correct method of evaluation. A faulty workload analysis can have detrimental long-term repercussions for a law enforcement agency, such as understaffing or inefficient deployment. Another potential problem can occur if an agency attempts to use one standard allocation format to assess all organizational units within the department. The assessment process to determine staffing needs may vary greatly in some organizational units within an agency. These may include but are not limited to traffic safety, patrol, investigations, homeland security, special operations, and administration functions. It is essential that each organizational unit of an agency be evaluated based on its own needs, and those requirements should be prioritized as part of the overall assessment strategy (Butler 2007).

Today, the generally used approach to police staffing are workload/performance-based approaches that take advantage of current technology. The approaches we review have similar

objectives. Basically, these approaches estimate the number of law enforcement officers required by examining how officers spend their time (AWC 2010). A determination of how many officers are needed is based on what the agency wants its officers to do. There are six steps in the process to produce a staffing estimate:

- 1. Examine distribution of calls for service by hour of day, day of week, and month
- 2. Examine the nature of the calls
- 3. Estimate time consumed on calls for service
- 4. Calculate agency relief factor
- 5. Establish performance objectives
- 6. Provide staffing estimates

Police Allocation Manual (PAM)

The Traffic Institute at Northwestern University developed the Police Allocation Manual (PAM), under a grant from the U.S. Department of Transportation and the National Highway Traffic Safety Administration. It is a widely used method of identifying patrol staffing needs for a variety of law enforcement entities (local, county, and state). The PAM methodology is designed to help agencies address the following questions:

- 1. What is the number of officers, field supervisors, and command personnel required to provide acceptable levels of patrol and traffic services?
- 2. How should patrol officers be allocated between geographic regions and shifts to maximize productivity?

The procedures for determining the number of personnel are based on an analysis of officer workload in terms of the amount of time required to complete various tasks. The PAM estimates the suitable staffing level for a complete jurisdiction or a specific patrol district by accounting for the time that officers need to perform patrol activities (Scottsdale 2004)

All on-duty patrol activities are assigned to one of the following categories:

- 1. Reactive (e.g. criminal and traffic related calls for service, traffic accidents, assists)
- 2. Proactive (e.g. self-initiated calls, community-oriented policing, traffic stops, criminal investigations, field interrogations, motorist assists)
- 3. Uncommitted (e.g. patrol in assigned area)
- 4. Administrative (e.g. office time, court time, training, meals, briefings, reports, etc.)

The PAM methodology relies on historical workload data and user-supplied performance objectives and policies. It is important to account for all the different patrol activities as well as the entire time spent on those patrol activities. This information is then compiled onto worksheets that guide the user to determine how many officers are needed to match the service needs of the population and the workload of patrol units.

The following data items illustrate the types of inputs required by the PAM:

- 1. Shift length (hours)
- 2. Average work week (hours)
- 3. Average number of paid off-duty hours per year per officer
- 4. Average number of on-duty hours spent on non-patrol temporary assignments per year per officer
- 5. Average number of officers to be supervised by each field supervisor

- 6. Percentage of field supervisor on-duty time spent in the field (i.e. not doing administrative duties)
- 7. Number of command personnel
- 8. Geographic area
- 9. Average driving speed by type of road
- 10. Average response speed for emergency calls
- 11. Average travel time for emergency activities
- 12. Average response speed for non-emergency calls
- 13. Average travel time for non-emergency activities
- 14. Total road distance by type of road
- 15. Patrol interval by type of road (hours)
- 16. Average number of accidents handled per day
- 17. Average service time per accident
- 18. Average number of service calls handled per day
- 19. Average service time per call
- 20. Proportion of patrol units staffed with two officers
- 21. Minimum number of on-duty officers required for patrol duties
- 22. Percentage of on-duty time spent on special assignments by patrol officers
- 23. Percentage of service calls that cannot be pre-empted
- 24. Percentage of administrative activities that cannot be pre-empted
- 25. Percentage of self-initiated activities that cannot be pre-empted
- 26. Average time spent on administrative activities per hour
- 27. Average time spent on self-initiated activities per hour
- 28. Average time spent on emergency calls per hour

Ultimately, the PAM approach can estimate the average number of on-duty officers needed each day in each district or "Autonomous Patrol Area" (APA). The PAM takes into account the number of field supervisors, the number of command staff, the proportion of two-officer units, minimum staffing requirements, special assignments, and time off.

The PAM approach is a model of police staffing that can recommend how many officers are needed. Each step is based on elementary mathematical and logical relationships between workload, expected patrol performance measures, the characteristics of the patrol area, and the number of officers required.

The PAM approach can determine "appropriate" staffing levels and assess the impact of hypothetical scenarios on the required staffing level (e.g. what will be the impact on staffing if the workload increases by 20% or if the target for the average travel time is reduced by 1 minute). However, the PAM can only prescribe how many officers are needed when performance objectives are provided (i.e. when someone decides what level of service is desired or expected). The PAM cannot be used as a predictive tool because:

- 1. It does not describe/predict the level of patrol performance (e.g. response time) by specifying a given number of officers, the workload, and other characteristics of the jurisdiction.
- 2. It does not predict changes in patrol performance or workload as staffing levels change.
- 3. It does not predict the future workload of a patrol area.
- 4. It does not determine if and or how the shifting and the scheduling patterns should be changed.

Additionally, the PAM cannot be used to assess the efficiency of current patrol operations. This is because:

- 1. PAM does not determine if and or how patrol districts should be redesigned.
- 2. PAM does determine the optimal proportion of two-officer units that should be deployed on patrol.
- 3. PAM does not assess whether the organization is internally consistent (e.g. whether patrol units spend too little or too much time on some calls, whether the average response time to some calls is too long or comparatively too short, whether patrol officers process calls adequately, etc.) (Idaho 2007; Georgia 2011; Traffic Institute 1993; City of Vancouver 2007; Prox 2007).

Patrol Service Area (PSA)

A model we include as a contemporary performance based system is the Patrol Service Area program used by the Washington, D.C. Metropolitan Police Department (MPD). In 1997, the MPD implemented the PSA model, in which the District of Columbia was divided into 83 patrol service areas, with specific patrol units assigned to each area. The PSA model was introduced as part of that department's community policing initiative and was designed to strengthen bonds between police and the community by reducing the response area for each unit, thereby increasing the familiarity of the patrol units with the neighborhood and its residents. It was felt that this move away from traditional response-driven policing would better serve the community. An allocation formula was developed for Washington, D.C.'s PSA model, prioritizing each call for service based on its perceived seriousness. The PSA model is currently being reassessed and service areas are being merged to form fewer than ten PSAs in Washington D.C. (MPD 2005).

International City/County Management Association (ICMA)

In their web brochure, the ICMA states, ". . . (they) consistently find that the aggregate data produced by the typical Computer Assisted Dispatching systems (CAD) or the usual Records Management System (RMS) do not provide a clear picture of actual workload, as opposed to calls for service data. It is critical to fully understand true workload that is, the total time required to handle the work as opposed to calls for service, the number of calls requires a deep dive into the data. Few police or fire departments have the internal capability to do this" (ICMA 2011).

The ICMA process is to extract data from the police department's CAD system and convert calls for service data and identifies seasonal, weekday/weekend, and time-of-day variables into a police services workload. ICMA staff graph the police services workload data to better present the data. Using this information the police department can contrast actual workload with deployment and identify the amount of discretionary patrol time available, as well as time commitments to other police activities.

Leonard Matarese of ICMA explains that, police service workload is different from calls for service in that calls for service is a number reflecting recorded incidents. Workload is a time measurement, recording the actual amount of police time required to handle calls for service from inception to completion. Various types of police service calls require differing amounts of time and affect staffing requirements. As such, call volume (number of calls), as a percentage of total number of calls could be significantly different than workload in a specific area as a percentage of total workload (Matarese 2012)

Once the police service workload is determined, ICMA compares workload to available deployed hours and comparing those to the hours necessary to conduct operations, staffing expansion and

or reductions can be determined and projected. ICMA also reviews and reports the agency's response times both cumulative as well as averages for all services. Additionally the time necessary to conduct proactive police activities (i.e., directed patrol, community policing, and selected traffic enforcement) are reviewed to provide the department with a meaningful methodology to determine appropriate costing allocation models (ICMA 2011).

The Managing Patrol Performance (MPP) Model

The Managing Patrol Performance (MPP) system is the Windows-based version of a DOS program created by the National Institute of Justice called Patrol/Plan, which has been available to police agencies since the 1990s. MPP uses a mathematical model to help managers plan the deployment of patrol personnel.

The MPP approach is based on the idea that front-line staffing needs should be tied to service levels and workload. The MPP approach was developed by the Police Management Advisors (a California consulting group) to simulate how varying levels of workload and staffing can affect patrol performance. The MPP system is the main competitor to PAM and Deploy®. MPP is described by it's developers as a "state-of-the-art" method to make patrol deployment decisions and identify long-range patrol staffing needs. In essence, the MPP capability is a series of mathematical formulas designed to model the patrol force in any area, on any day of the week and during any time period. The MPP approach relies on queuing theory, probabilistic reasoning, and various results from operations research.

The MPP analyzes CAD data and matches staffing levels with patrol workload, while meeting specific performance goals. The MPP system computes patrol performance estimates from the CAD data.

The MPP model can calculate the following factors and estimates:

- 1. Number of units on patrol duties
- 2. Average travel time
- 3. Average service time
- 4. Average call rate
- 5. Number of units required by call
- 6. Average time spent by call
- 7. Average number of units deployed
- 8. Average time spent on administrative duties or other non-call related tasks
- 9. Percentage of priority 1, 2 and 3 calls
- 10. Area of each district
- 11. Average number of free units (available to answer calls or perform other patrol duties)
- 12. Average call time
- 13. Average utilization rate
- 14. Average response time
- 15. Percentage of time spent on uncommitted time
- 16. Proportion of calls handled by secondary units
- 17. Probability that all units will be simultaneously busy
- 18. Percentage of time during which all units will be simultaneously busy
- 19. Number of response units required to meet particular patrol performance characteristics
- 20. Optimal distribution of units across time blocks, days of the week or geographic areas

The MPP approach identifies how many units are needed and when or where they should be deployed based on how busy patrol officers are and what the service goals of the police agency are.

The number of units recommended by the MPP model can be adjusted by geographic region, day of week and time block. The goal of the MPP model is to link patrol resources with call workload (staffing to workload) and therefore maintain consistent service levels. The MPP approach can be used to ensure that officers have a chance to do proactive policing and work at a steady pace.

As opposed to PAM, the MPP model can be used to make empirical predictions, run simulations, or look at hypothetical scenarios. For instance, the MPP model can be used to show what will likely happen to priority 1 response times, the number of free units, and the amount of proactive policing when the number of units deployed changes, the number of dispatched calls varies, or patrol shifts are reorganized.

The MPP method is used by the Seattle Police Department, the Los Angeles Police Department, the Charlotte-Mecklenburg (NC) Police Department, the Newport News (VA) Police Department, the Knoxville (TN) Police Department, the Winston-Salem (NC) Police Department and the Palm Beach (FL) County Sheriff's Office.

The MPP method is not very transparent. The underlying mathematical equations of the MPP model are based on theoretical results from queuing theory, operations research, and regression analysis. Unfortunately, without knowing what assumptions are used, it is difficult to assess how precise or how relevant are the results.

MPP is not very flexible. The MPP model is not designed to explore the call, dispatch, and deployment data in detail. For instance, the MPP model cannot be used to study discrepancies by patrol district, source of calls, call types (e.g. abandoned 9-1-1 calls) or case types (e.g. residential burglary, aggravated assault, etc.). Similarly, MPP cannot be used advantageously to study questions of a qualitative nature like the deployment of two-officer units, the design of the patrol districts, the creation of patrol-based specialty squads, or the establishment of service level standards (Sullivan 2001; Bellmio 2004; City of Vancouver 2007).

Ops Force: Deploy® (formerly Staff Wizard)

Deploy is a commercial computer program distributed by Corona Solutions. Like the MPP model, Deploy is based extensively on the Patrol/Plan software developed by the U.S. National Institute of Justice. Deploy uses results from queuing theory to analyze the patrol workload and generate key statistics that can assess staffing, deployment, and scheduling.

Using the patrol data, Deploy can estimate:

- 1. The expected number of citizen-generated calls for service by hour of the day and day of the week.
- 2. The average number of patrol units dispatched to each call for service.
- 3. The average service time.
- 4. The total workload by patrol district, by priority level, by hour of the day and by day of the week.
- 5. The average utilization rate by patrol district, by hour of the day and by day of the week.
- 6. The average number of available patrol units.
- 7. The average queuing delay, the average travel time and the average response time.
- 8. The expected probability that a call will have to be stacked in the waiting queue.
- 9. The expected average response time.

Deploy requires the following CAD type data to work correctly:

- 1. The priority code associated with each call.
- 2. Date and time stamps indicating when the call was received, dispatched and cleared.

- 3. Date and time stamps indicating when each unit was dispatched, enroute or at the scene and when each unit cleared.
- 4. A code differentiating between officer-initiated (on-view) and citizen-generated calls.

Deploy relies on user-specified performance objectives to determine the appropriate staffing level for patrol. For instance, the user provides:

- 1. The maximum probability that all patrol units will be busy and a call will have to be stacked.
- 2. Average utilization rate.
- 3. Average response time (by priority).
- 4. Average travel time (by priority).
- 5. Average queue delay (by priority).
- 6. Average number of available units.
- 7. Uncommitted time per unit per hour.

Deploy can then assign units to a computer-generated optimized schedule and or measure the efficiency of the user's original performance objectives.

Deploy can provide indicators and is a tool to describe and predict performance and efficiency. Unfortunately, Deploy faces the same problems as the MPP model. It is expensive, costing between \$50,000 and \$100,000 initially with additional yearly fees. Also, Deploy is not very transparent. Because it is a proprietary commercial software solution, Deploy does not describe the mathematical models it relies on or the assumptions it uses to generate the results.

It is also not very flexible. Deploy is not designed to explore questions of a qualitative nature like the deployment of two-officer units, the design of the patrol districts, the creation of patrol-based specialty units or the establishment of performance standards.

The Vancouver Police Department Patrol Deployment Approach (VPD)

Some Police Departments and State Law Enforcement agencies build on the methods of known systems and expand on those systems to create a method that is unique to that department or agency. One of the most documented of these Local Systems is the VPD. In 2006, the Planning and Research Section of the Vancouver Police Department in Vancouver Canada developed a patrol deployment system. Compared to other methods, the VPD approach to patrol deployment is more thorough in the sense that it considers many quantitative and qualitative, operational, and managerial issues that are not considered by the PAM, MPP, or Deploy methods. For instance, the VPD approach considers:

- 1. How long patrol officers spend on each call for service.
- 2. How many officers attend each call for service.
- 3. Whether some officers should be reassigned to front-line patrol functions.
- 4. Whether the calls that patrol officers currently attend need to be attended or whether some calls that are not currently attended should be attended.
- 5. Whether more or less two-officer units should be deployed.

Conceptually, the PAM approach, the MPP model, and Deploy take historical patrol data (including the call data, the dispatch data and the deployment data) and generate empirical predictions based on that data. The VPD approach improves on this method by analyzing the data before it is fed to the theoretical model. This leads to a better view of what is currently being done and, what is not being done or what should be done differently (City of Vancouver 2007; Prox 2007).

International Association of Chiefs of Police (IACP)

The IACP is another organization that performs patrol staffing, deployment, scheduling, and productivity studies. The IACP process begins by reviewing the client agency's philosophies (e.g., policing style, service standards, response time standards, supervision style, etc.). IACP also collects information and data on a range of topics, including:

- 1. Number of calls for service
- 2. Population size and density
- 3. Composition of population, particularly age structure
- 4. Stability and transiency of population
- 5. Cultural conditions
- 6. Climate, especially seasonality
- 7. Policies of prosecutorial, judicial, correctional, and probation agencies
- 8. Citizen demands for crime control and non-crime control services
- 9. Crime reporting practices of citizenry
- 10. Municipal resources
- 11. Trends in the foregoing areas.

After information is collected in these topic areas the IACP staff create a five-phase work plan designed to accomplish the study. The phases are typically:

- 1. Staffing Requirements Training
- 2. Policy Preference Review
- 3. Patrol Staffing Data Collection
- 4. Staffing Requirements Projections
- 5. Report Preparation

After reviewing two studies performed by the IACP, we were not able to determine any extensive quantitative analysis in the IACP methodology. The studies we reviewed contained a large amount of narrative discussing policy issues and recommended procedural changes (IACP 2012; IACP 2009; IACP 2008).

Best Method

Our review of police allocation models resulted in a list of five contemporary options: the Police Allocation Manual (PAM), International Association of Chiefs of Police (IACP), Ops Force: Deploy®, the Managing Patrol Performance (MPP) Model, and the International City/County Management Association (ICMA). Of the five options we proposed using the PAM model to study the New Mexico Department of Public Safety. The strength of the PAM method is it's consistency with the previous DPS reports, it is an established method, it is a quality method, the software is free, and it is commonly used by state law enforcement agencies.

The PAM method is used strictly as a tool for estimating the allocation of patrol operations. It cannot be used as a predictive tool, that is, it cannot be used to determine if or how the shift and scheduling patterns should be made. In addition to not predicting future patrol operations, PAM does not assess the efficiency of current patrol operations, (e.g., whether the average response time to some calls is too long or comparatively too short, or whether patrol officers process calls adequately). Despite the limitations of PAM as addressed on page 11, it is the best method to use for this study.

As noted in the PAM Manual (The Traffic Institute 1993, 1xixiii), like all staffing and deployment models, PAM is limited by the assumptions on which they are built and by the data used. The findings from this model are meant to be used by policy makers to inform staffing

decisions and are meant to be used in combination with other factors like operational, economic and political factors to determine the final staffing levels.

PAM uses a variety of assumptions about the NMSP to find rational patterns that can be used by stakeholders and NMSP administrators to arrive at an informed consensus of staffing needs. Staffing models have progressed since 1985 when John Schuiteman moralized that, "Adequate police protection... lies in the eye of the beholder..." The mathematics, statistics, and available data used in models like PAM have improved but have not replaced the need for community leaders and police officials to decide on the level of patrol presence and service expected by the citizens of New Mexico and the resources available to the NMSP.

State Law Enforcement Agencies and Other Law Enforcement Agencies

As an adjunct to the literature review we decided to directly contact state law enforcement agencies to conduct a census of staffing studies. While conducting this aspect of the study we also collected information for other law enforcement agencies, primarily municipal police departments, when we came across information.

In order to report on staffing studies performed by other state, and local (city/county) law enforcement agencies a literature search was conducted. The studies were first searched for on the Internet. If a study was found on the web and it was not clear the report was the most current study completed, attempts at contacting the relevant law enforcement agency were made to confirm the study was the most current or to obtain the most current report if it was not. Once the Internet search was exhausted, attempts were made to contact law enforcement agencies by both email and phone in order to obtain staffing study reports. Contact information for the law enforcement agencies contacted was found via the Internet. Although numerous agencies were successfully contacted not all agencies had performed a staffing study and/or could not contact us with staff that were familiar with the study being performed by their agency.

Initially the focus was on state police agencies, and on 'like' states and bordering states to New Mexico only. Numerous attempts to gather staffing reports from the five states which border New Mexico were taken. We also searched states, such as Idaho, Nebraska, and Wyoming, which were deemed 'like' New Mexico due to their low overall population and their population density to area ratio. During the search process for staffing reports it became apparent not as many state police agencies' staffing reports would be readily available as hoped, so the search was widened to other states, and local (city and county) police agencies as well. During the Internet search for staffing reports two international studies were found and were retrieved as pertinent literature for this study.

We attempted to locate staffing study reports from 37 law enforcement agencies. Nineteen were state agencies, 16 were local, and 2 were international. In total we were able to obtain 23 staffing study reports. The Internet search provided us with 18 reports (4 states, 12 local, and 2 international). Five additional reports were obtained through contacting the law enforcement agencies via email and phone (4 states, and 1 local). In all 25 law enforcement agencies were successfully contacted to try to obtain current staffing study reports and/or to confirm we had the most current staffing study report (18 state, and 7 local). Not all 25 agencies successfully contacted provided us with a report. Table 1 displays the law enforcement agencies we were able to obtain reports from, the type of methodology the agency used (PAM, MPP, IACP, etc.), and the report year.

Table 1. Obtained Staffing Study Reports			
State	Agency	Method	Most Recent Reporting Year
	Highway Patrol	Workload (unspecified method)	2010
	Gilbert Police Department	International Association of Chiefs of Police (IACP)	2012
Arizona	Glendale Police Department	International Association of Chiefs of Police (IACP)	2010
	Pinal County Sheriff's Department	Police Allocation Manual (PAM)	2008
British Columbia	Vancouver Police Department	Police Resource Model (PRM) & Managing Patrol Performance (MPP)	2007
Colorado	State Patrol	Trooper Allocation Model (TAM)	2012
Colorado	Longmont Police Department	Call for Service (CFS)/Workload	2006
F lavida	Highway Patrol	Police Allocation Manual (PAM)	2011
Florida	Multiple agencies in Charlotte County	Workload Analysis Review	2007
Georgia	State Police	Police Allocation Manual (PAM)	2011
Idaho	State Police	Police Allocation Manual (PAM)	2007
Illinoio	State Police		
minois	Rockford Police Department	Call for Service (CFS)	2009
lowa	Waterloo Regional Police Service	Managing Patrol Performance (MPP)	2009
Louisiana	Shreveport Police Department	Managing Patrol Performance (MPP)	2004
Michigan	Traverse City Police Department	Workload (unspecified method)	2010
New Zealand	New Zealand Police Department	Police Resource Model (PRM)	2007
North Carolina	Charlotte-Mecklenburg Police Department	Managing Patrol Performance (MPP)	2000
North Carolina	Winston-Salem Police Department	Managing Patrol Performance (MPP)	2009
Virginia	State Police	Trooper Allocation and Distribution Model (TADM)	2003
Mashington	State Patrol	Police Allocation Manual (PAM)	2010
vvasnington	Seattle Police Department	Managing Patrol Performance (MPP)	2007
Washington DC	Metropolitan Police Department	Police Service Areas (PSA)	2004

METHODOLOGY

This portion of the report describes the two methods used to calculate an estimated number of staff for DPS.. Staff from the NMSP Research & Development Office, and SID assisted NMSC throughout the project. These staff provided data and expertise and helped NMSC through the subtleties of the DPS data and organizational structure.

Literature Review

Based on the literature review and the fact the PAM model had been used in previous studies we decided to use the PAM model and a modified workload model. Combined, the two models address the needs of patrol divisions and non-patrol divisions of the DPS.

Combining Models

PAM is a well-accepted method for estimating staffing levels in state law enforcement patrol agencies. In conjunction with using the PAM method a modified workload measurement process was used to calculate the staffing needs of the non-patrol bureaus of DPS, i.e., SID and IB. The primary feature of the staffing study is the PAM model in which categories of work activities such as:

- Reactive (e.g. emergency calls for service, criminal or traffic related calls for service, traffic accident calls for service, assists),
- Proactive (e.g. self-initiated calls, community-oriented policing, traffic stops, criminal investigations, field interrogations, motorist assists),
- Uncommitted (e.g. patrol in assigned area), and
- Administrative (e.g. office time, court time, training, meals, briefings, reports, etc.)

are analyzed to calculate the estimated number of personnel required in each NMSP district.

The second feature of the Staffing Study is a modified time study workload assessment model applied to the non-patrol SID and IB.

The PAM results and the results from the non-patrol modified time study were combined to create an estimated staffing level for each of the these units of DPS.

Events in the Methodology

Diagram 1 provides the benchmark steps of the methodology for this Staffing Study. The sequence of events begins with identifying the required data to use in the PAM model application and data for the non-patrol model. PAM requires two types of data, from two sources, numeric data from the various datasets DPS maintains and policy objectives. Policy information is derived from written formal policies and from performance measures and objectives set by DPS administration.

We identified and collected the data required for the PAM and non-patrol model. Data types included, calls for service, accidents, and hours on and off duty. Where necessary we included policy decisions and/or current agency practice information. Because DPS information systems are not designed to accommodate a study of this type extracting and compiling needed information took time. A great deal of time was also spent gathering policy decision and current agency practice information.

Calculating the needs and interpreting the results was perhaps the least complicated event in the process. Both the PAM application and the non-patrol model formula are calculated using simple math, i.e., dividing the workload by the available time the officer's have to work. It is important to remember the results are estimates only.

Finally, the results of the PAM application and the non-patrol model were combined to produce the total DPS staffing estimates for NMSP, SID, and IB.

Main Ideas of the Methodology

This Staffing Study uses PAM and a modified workload model. Both of these processes use the number of staff and available work hours along with the volume of work to produce staffing estimates. PAM is the more sophisticated tool incorporating the characteristics of the patrol area.

Staff available - The number of agents, officers, and sergeants available to perform the work tasks is incumbent on: 1) the amount of on-duty time for each staff member; 2) area of patrol responsibility; 3) response time objectives: 4) number of non-patrol special duties, e.g., liquor license postings, crime investigations; and 5) work duties (e.g. answering calls for service, investigations, traffic stops, premise inspections, etc.).

Volume of work – The question of, "how much work does the staff accomplish?" is answered by analyzing work activity, which includes calculations from time spent on calls for service, number of calls for service, patrol time, administrative time, and time per job activity.



Methodology Decisions and General Approach

Decisions were made at the beginning of the study and during the course of the data collection phase of the project. To begin, we completed a review of the literature describing the existing police allocation models. This literature was used to guide the study. We also collected staffing study information from state law enforcement agencies and other law enforcement agencies to supplement the information from the literature review regarding the use of the PAM method and other methods used by these agencies.

We adopted a one-year study period, i.e., calendar year 2011, which is typical for this type of study. We had the entire population of data at hand and there was no need to sample data.

Our aim was to determine the staffing level at the officer and sergeant level. Therefore we selected officer and sergeant level data for each NMSP district. We pilot tested data from NMSP Districts 2 & 3 in the PAM application. Testing gave us the opportunity to see how our data collection methods worked, to review the data for completeness and accuracy, a chance to see how the PAM method performed with real data, and allowed us to adapt the process for the full study.

NMSC reviewed a sample of activity and calls for service information provided by NMSP. From these samples NMSC drafted the data variables needed from NMSP to complete the PAM worksheets. After reviewing and testing the NMSP sample data a request for more data and for policy level data was made to NMSP. Data variables were extracted from the DPS excel documents to a single excel document and the data was entered into the PAM worksheets for each of the NMSP districts. In addition to testing two NMSP districts, NMSC entered SID and IB data in our non-patrol formula and acquired NMSP road mileage data from the NM Department of Transportation (DOT). Further discussions were held with SID staff to review preliminary findings and verify data points.

NMSP provided a copy of the 2005 and 2007 DPS Workload studies with accompanying data files, a copy of the NM Legislative Finance Committee's 2006 report on DPS management practices and staffing levels, and the 2004 PAM user's manual. NMSC used this information as background and context for the present study.

NMSC met with DPS staff on several occasions to update them on the progress of the study and to discuss the need for additional or corrected data. DPS staff decided policy data issues and objectives necessary to complete certain sections of the PAM model.

PAM Data

This section briefly describes how the data was gathered for the PAM model. This study is based on the PAM method described in the updated 2007 manual (Stenzel 2007). The method described in the updated manual contains eight worksheets and other materials that describe the data entry, calculations, and reasoning for the updated manual. The original model was developed in 1991 (Northwestern University 1993).

Data Sources

The primary data source for this study was departmental databases that involved officer/sergeant activity for the period of January 2011 through December 2011 and calls for service data for the same time period. Additional information was collected by NMSP district for current staffing levels and additional duties/responsibilities. Roadway mileage by type of road (interstate, state highway, U.S. highway, and county) and district area square miles was provided by the New Mexico Department of Transportation.

The PAM model requires data elements from two sources; numeric data and policy decisions derived from written organizational policies or agency performance objectives. The PAM worksheets comprise 38 numeric variables and 24 policy variables (see Appendix A for a complete list of the data and policy variables). Seven data sources were used to acquire the data necessary to complete the PAM worksheets. Table 2 describes the data sources.

Table 2 Data Sources for PAM model and Non-Patrol model			
Data Label	Description	Department	Source
CAD Statistics	Calls for Service by NMSP District	NMSP	NMSP
Activity Codes and Time (1/1/11 to 6/30/11)	Officer activity documented by code for the first six months of 2011	Officer activity documented by code for the first six months of 2011 NMSP, IB, & SID	
Activity Codes and Time (7/1/11 to 12/31/11)	Officer activity documented by code for the last six months of 2011	NMSP, IB, & SID	NMSP & SID
Crash Time Average	Average time spent working a crash investigation	NMSP	NMSP
Average Work Week	Typical work week for officers	NMSP	NMSP
District Personnel	Number of officer per District	NMSP	NMSP
STPOL_Mileage_District-w- sqmiles.xls	_Mileage_District-w- s.xls Highway miles in each NMSP district. Includes Interstate miles, US Routes, Frontage roads, NM Routes, and County roads.		NM Dept. of Transportation
IB data 2011	Workload data for IB	NMSP	NMSP
SID Workload data	Workload data kept by the SID office, includes, counts of operations, CCU cases, training sessions, etc.	SID	SID

Non-Patrol Modified Work Load Method

In 2005, the Legislative Finance Committee stated in its *Review of Management Practices and Staffing Levels*, ". . . the (PAM) model is not conducive to staffing and allocation of police officers performing investigative functions." The PAM model is designed for patrol functions and limited special assignments. PAM is an appropriate tool for calculating patrol staffing levels for NMSP. In view of the fact that investigative workloads should be calculated we designed a workload assessment procedure to calculate the SID and IB workloads for inclusion in this study. The non-patrol workload model is an uncomplicated procedure for identifying the number of agents and sergeants needed to complete the work assigned to SID and IB.

The method is described below beginning with the selection of the participating DPS units. Time information for work type activities can be measured several ways. We collected work time and activity time for the IB from the NMSP Activity Codes and Time Dataset provided by NMSP Research and Development unit staff. The SID also provided hours from the NMSP Activity Codes and Time Dataset and data kept by that unit. We did not perform a time study of the SID and IB units. We used the activity codes and time data to give us the information we needed to perform the workload calculations. We consulted the SID staff to estimate the time used for office

activities and miscellaneous duties. We consulted the NMSP R&D unit supervisor for the same estimates for the IB unit.

Selection of participating divisions

The DPS chose the units that participated in the study and NMSC determined which units would be included in the Non-Patrol section. The decision to include a unit in the Non-Patrol section was based on whether or not it was primarily involved in patrol activity. As described elsewhere, the PAM method is primarily designed for patrol units and relies on the use of time spent on patrol and limited special non-patrol activities.

Study period length

The length of the reporting period for the non-patrol units matches the time period used for NMSP data (i.e., Calendar Year 2011) and just as with the NMSP patrol data, the fact we used all the data for each unit for the time period assured the reliability of the data.

Categorization of the workload

All the types of work responsibilities were discussed with the SID administration and the DPS Research and Development unit (R&D). DPS administrative staff made the final selection. Work types were identified from historical descriptions of SID and IB and from discussions with agency staff. The work types and related activities for SID and IB are listed in Table 3. SID work types can be grouped into three categories, Liquor Control, Concealed Carry, and Operations. SID was able to provide a breakdown of hours from data they kept. Where data was not available NMSC relied on the experience of the SID administration to estimate the average time. SID officers' experience was used to estimate the average time taken on premise inspections, special operations, miscellaneous duties, and non-work time office duties.

Table 3 Non- Patrol Division Work Types and Activities		
SID	IB	
Liquor Control	Criminal Investigations	
Liquor License Posting		
Complaints		
Premise Inspection		
Seminars to Liquor Establishments and Law		
Enforcement		
Source Investigations		
Establishment Checks		
Administrative Citations Issued		
Concealed to Carry		
Case Processing		
Issue Licenses		
Instructors License and Training		
Inquiries		
Background Checks		
Operations		
Alcohol Sales to Minors		
Alcohol Sales to Intoxicated Persons		
Underage Enforcement Operations		
Other		
Report Writing		
Non-Traffic Citations		

The primary work type activity for the IB is criminal investigations. The IB uses the DPS Information System to keep track of hours worked. There are limitations with this data because the officers only enter investigation time and do not break down tasks; additionally we were not

able to separate the IB criminal investigation time into specific tasks that comprise a criminal investigation.

Employee year value

After determining the type of work and activities performed by the SID and IB employees, it was necessary to determine the employee year value, i.e., how much time is available to do the work, or essential work related activities. SID and IB reported actual hours worked using the DPS Information System described in Table 2. NMSC estimated the employee year value by determining how many days per year were available for employees to work (the employee year).

To construct the employee year value, we started with 260 work days. This was calculated using 2,080 total available work hours in a standard year divided by 8 work hours per day. Employees are not able to actually work this many hours during the year, because of leave time, administrative time, travel, and training, etc. We subtracted time not available for actual work. For SID this included an average of: 12 vacation days, 10 holidays, 6 administrative leave and compensation days, 10 sick and personal days, 14 military days, 7 training days, 22 work-related travel days, 1 day of leave without pay, 20 special assignment days, 14 miscellaneous duty days, and 30 days for non-work related activities(e.g., routine correspondence, paperwork, and phone calls). Not every employee used military and leave without pay but the number of hours taken impacted the unit's yearly available time so we included these categories in our calculation (See Table 4). The number of days used in each category was subtracted from 260 resulting in 115 days or 920 hours of time available per employee per year for the Work Type Workload. This calculation was used for the average amount of work time available even though we understand SID employees often work more than eight hour days.

Table 4 Actual Work Days In a Year for SID		
Time Category	Days	
Available Work Days Per Year	260	
Subtract Non-Work Days and Non-Work Type Activiti	es	
Special Assignments	-20	
Vacation Time	-12	
Holiday Time	-10	
Admin Leave/Comp Time	-6	
Sick/Personal Time	-10	
Military Time	-14	
Training	-7	
Leave without Pay	-1	
Non-work Time: Office/Activities/Phone Calls/Computer	-30	
Travel	-22	
Miscellaneous Duties (meetings, servicing vehicles and firearms, etc.	-14	
Total Work Days Per Year	115	

The work related time by activities for the IB unit was reported in the DPS Information System data. IB time reported for the second 6 months of 2011 (i.e., Activity Codes and Time (7/1/11 to 12/31/11) did not contain specific leave time categories. Therefore, we merged the leave time reports for the entire year into seven categories. IB included an average of: 4 days for security and special assignments, 26 days for all leave types, 45 days for administrative time, 1 other

investigative type day, 6 travel days, 16 training days, and an estimated 14 miscellaneous duty days. We included these estimations, assuming IB agents spent approximately the same amount of time performing miscellaneous activities as SID agents. Self-initiated activities such as patrol amounted to less than one day per year for IB agents. Table 5 shows the time categories and associated days for the IB unit.

We subtracted the number of days used in each category from 260 resulting in 148 days (70,941 minutes) available per employee per year for working on criminal investigations. We understand IB agents often work more than eight hour days and holidays, and the model takes this into consideration by crediting all hours worked into the criminal investigation weight and each of the eight non-work type activities to determine the number of FTEs required to accomplish the CY2011 workload.

Table 5 Actual Work Days In a Year for IB		
Time Category	Days	
Available Work Days Per Year	260	
Subtract Non-Work Days and Non-Work Type Activities		
Security & Special Assignments	-4	
All Leave Time	-26	
Administrative	-45	
Self-Initiated Activity (less than 1 day)	-0	
Other Investigative duties excluding criminal	-1	
Travel: 1st 6 mos.	-6	
Training	-16	
Miscellaneous Duties (Meetings, servicing vehicles, and firearms, etc.	-14	
Total Work Days Per Year	148	

Time on each activity

The number of duties opened during 2011 in each work type category was counted. Counts for IB were acquired from the DPS Activities database and SID provided counts from their own data system. A time weight in minutes was created for each activity by converting the hours worked into minutes and dividing the minutes by the number of activities opened during the year.

The number of activities opened during the study period for the different work types was counted. In addition to the activities opened, the number of activities claimed by the SID, as backlog cases were included in the count of activities for SID. The basics of the modified time study method were discussed with the SID and NMSP R&D staff. It was felt that a modification should be made for the activities (e.g., premise inspections, concealed to carry permits) not completed because of lack of staff or which require large numbers of overtime hours. IB and SID staff provided an estimate of the backlog of work by activity and we added these backlogged activities into the number of cases opened during the year. This adjustment is necessary because it results in the total number of FTE's required to accomplish all the work SID is responsible for in one years time. Table 6 shows the list of work types for SID and IB and the case weights in minutes for each work type.

IB agents claim every hour they work on criminal investigations as "602" time, including overtime hours. We determined a criminal investigation weight by converting the total for 602-

time for the year (135,828 hours) into minutes (8,149,512 minutes) and dividing by the number of investigations for the year (1,626) the result was the criminal investigation weight of 5,012 minutes. This is the same process we used to determine the SID total workload in minutes.

Table 6 Work Time Weights in Minutes for SID and IB for 2011			
Unit	Work Types	Case Weights (minutes)	
SID	Liquor License Posting (notices)	120.0	
SID	Complaints on Liquor Licenses and Complaints in General	120.0	
SID	Premise Inspection of Liquor Licenses	120.0	
SID	Seminars Given to Liquor Establishments	120.0	
SID	Seminars Given to Law Enforcement	480.0	
SID	Source Investigations	480.0	
SID	Serving Subpoenas	480.0	
SID	Routine Liquor Establishment Checks	180.0	
SID	CCU Case Process	46.0	
SID	Additional Background Checks	58.0	
SID	Court Time	150.0	
SID	Non-Traffic Citations	30.0	
SID	Admin Citations issued	30.0	
SID	Verify Firearms/Instructor Training	10.0	
SID	Issue CCU License	15.0	
SID	Alcohol Sales to Intoxicated Persons Operation	480.0	
SID	Alcohol Sales to Minors Operation	480.0	
SID	CCU Phone Calls	5.0	
SID	Underage Enforcement Operations	8.0	
SID	CCU Instructors	480.0	
SID	Report Writing (201)	180.0	
IB	Criminal Investigations	5,012.0	

Calculation of the workload

Multiplying the case weights by the annual number of activities opened or accepted during 2011 produces a job workload for each specific work type category. The sum of each work type is the total annual number of job related minutes for each work type. The number of minutes for each work type was totaled and the result was the total number of minutes to complete the total workload. This is labeled "Total Job Specific Workload" in Table 16 for SID and "Total Criminal Investigations Workload in Table 17 for IB.

After calculating the workload, the next step was to subtract the number of days/hours available to work from Table 4 for SID and Table 5 for IB from the Officer Average Annual Availability. The final step was dividing the Case – Specific Workload by the Availability for Work Type Workload. The result is the number of full time equivalents (FTE) needed to handle the entire CY2011 workload. Table 7 shows the steps in the calculation.

Table 7 Calculation of the Workload
Calculating the workload: Case weights X Annual Number of Activities Opened = Workload
Add the Workload for each Work Type, the result is the Total Workload i.e., Case - Specific Workload
Calculate the Officer Demand: Case – Specific Workload ÷ Availability for Work Type Workload = Officer Demand

The detail for the SID and IB calculation is shown in the Analysis section of this report, in Tables 16 and 17 respectively.

SITE DESCRIPTION

New Mexico is the fifth largest state in the U.S. comprised of 33 counties with a land area of 121,298 square miles and a 2010 population of 2,059,179 (36th most populous and 6th least densely populated) with a population per square mile of 17 persons. In 2011 New Mexico's average age of residents was 35.3 years of age with a median income of \$43,820 with 20.2% of the population living below the poverty level (US Census Bureau, 2012). The poverty rate was 15% nationwide in 2011. In New Mexico, 451,000 people were estimated to be living in poverty in 2011 or 22.2% of the population. That was the highest percentage nationally (Massey, 2012). The level of poverty impacts the rural communities in New Mexico. Approximately 16 small communities statewide have been forced to close their local police department and rely on the county sheriff and the DPS to provide law enforcement services in their communities (UNM-ISR, 2012)

Slightly more than 50% (50.6%) of the population was female and Hispanics accounted for 46.3% of the population of the state, followed by Whites (40.5%) and American Indians (9.4%).

Bernalillo County had the largest population of 662,564 people with a population per square mile of 570.8 and Harding County had the smallest population of 695 with a population per square mile of 0.3.

New Mexico can be split into 6 regions: Central, North Central, Northeast, Northwest, Southeast, and Southwest. Below is a listing of counties that make up the different regions and the total population of each region.

- 1. Central Bernalillo, Sandoval, Torrance and Valencia Counties: 887,077
- 2. North Central Los Alamos, Rio Arriba, Santa Fe and Taos: 235,303
- 3. Northeast Colfax, Guadalupe, Harding, Mora, Quay, San Miguel and Union Counties: 66,996
- 4. Northwest Cibola, McKinley and San Juan Counties: 228,749
- 5. Southeast Chaves, Curry, De Baca, Eddy, Lea, Lincoln, Otero and Roosevelt Counties: 338,739
- 6. Southwest Catron, Dona Ana, Grant, Hidalgo, Luna, Sierra and Socorro Counties: 302,315

New Mexico Department of Public Safety

The mission of DPS is to build a safer stronger New Mexico by providing quality law enforcement services, training, disaster and emergency response, technical communications, and forensics support to the public and other governmental agencies. The DPS consists of the New Mexico State Police division, the Motor Transport Police division, the Special Investigations Division, the Law Enforcement Academy, and Law Enforcement Support.

New Mexico State Police

The State Police consists of the Investigations Bureau, Special Operations Bureau, and Uniform Bureau. Our study includes the Uniform Bureau and IB. Uniform currently has 329 sworn personnel assigned to 12 districts. Table 8 lists staff by type for NMSP by district.

Table 8	3 NMSP Act	ual Manpower b	y Rank and Di	strict, 2012
District	Captain	Lieutenant	Sergeant	Patrolman
D1	1	1	4	22
D2	1	2	6	26
D3	1	1	2	15
D4	1	1	3	16
D5	1	3	7	29
D6	1	1	4	17
D7	0	1	9	46
D8	0	1	3	11
D9	1	2	5	21
D10	0	1	2	9
D11	0	1	4	16
D12	1	1	5	23
Total	8	16	54	251

For operational purposes, the State Police divides New Mexico into 12 distinct Districts (See Figure 1). Each district has a main office with a commanding officer overseeing day-to-day operations. District offices are often thought of as community posts. They provide an access point through which citizens of a district may seek information on matters of law enforcement, and on the mission and strategies of the NMSP. NMSP is responsible for coordinating all search and rescue operations in the state, narcotics and criminal investigations, as well as traffic enforcement, and a number of other specialized operations.

In October 2012, the authorized strength for all district patrol officers and sergeants was 366. The actual total is 305 or 83% of the authorized level. Table 9 shows the number of authorized staff and actual staff as a percentage of authorized by district. District 7 is the only district with more actual officers than authorized and District 4 has the lowest percent of actual officers to authorized officers.

Table 9 NMSP Authorized and Actual Officers and Sergeants by District			
District	NMSP Total Authorized 2012	2012 Actual	Actual as % of Authorized
D1	29	26	90
D2	44	32	73
D3	25	17	68
D4	23	19	83
D5	45	36	80
D6	30	21	70
D7	50	55	110
D8	16	14	88
D9	34	26	76
D10	15	11	73
D11	23	20	87
D12	32	28	88
TOTAL	366	305	83

Figure 1 NMSP Districts



Special Investigations Division

SID enforces the state Liquor Control Act and Concealed Handgun Carry Act, as well as conducting special investigations.

The division performs a wide range of Enforcement and Regulatory activities statewide:

- Premise inspection at licensed liquor establishments
- Compliance Operations
- Underage enforcement operations
- Tobacco compliance operations
- Source investigations
- Investigations into the illegal sales of alcohol to intoxicated persons
- Financial investigations
- Undercover operations
- Training of city and county police officers, community groups and industry employees.
- Administration of the Concealed Handgun Carry Act

SID agents routinely investigate complaints and referrals concerning violations of the New Mexico's liquor, gambling and tobacco laws. The majority of these complaints involve providing alcohol to intoxicated persons and to minors. To target these and other crimes, SID agents conduct a number of enforcement operations, including plainclothes patrols and inspections of licensed liquor and gaming establishments, underage sting operations, "Cops in Shops" operations, and source investigations.

Source investigations are conducted to identify the "source" of alcoholic beverages that have been:

- 1. Sold or served unlawfully
- 2. Provided to minors
- 3. Provided to intoxicated persons
- 4. Provided to person(s) involved in serious incidents and vehicle crashes, or
- 5. Provided to those arrested for DWI

The primary goal of a source investigation is to determine the identity of the seller, server or provider of alcoholic beverage, and to determine whether or not the provider was acting within the law. If alcohol has been sold illegally, the SID will prepare and file criminal and administrative charges against the provider.

In 2011, SID reported a total of 20 Agents and Sergeants on staff at the start of the year and 17 Agents and Sergeants at the end of year. Table 10 shows the breakdown of staffing in the SID and Figure 3 shows the SID Districts.

Table 10 SID Actual during 20111 and Authorized for 2012				
Position	1/1/2011	12/31/2011	Authorized 2012	
Officers	15	12	17	
Sergeants	5	5	5	
Total	20	17	22	

Figure 3 SID Districts



Investigation Bureau

The mission of the New Mexico State Police Investigations Bureau is to investigate, prevent, and detect violent criminals and felonious criminal activity that undermine the safety and security of the citizens of the State of New Mexico. The Investigations Bureau collaborates with other law enforcement agencies on comprehensive investigations concerning drug violations. Agents testify in court on cases they bring for prosecution.

Figure 4 shows a graphic comparison of the IB authorized staff to the annual criminal investigations caseload. The criminal caseload has grown an average of 12% per year since FY00 while staffing has been relatively flat.



For management purposes the IB is divided into two areas, the North Zone and the South Zone. Table 11 provides a list of the IB staff positions in the state during 2011 and 2012. Figure 4 is a map of the IB Zones. The IB was authorized for 92 agents and sergeants for 2012. The actual staff was 85 for 2012, or 92.4% of the authorized number.

Table 11 IB Authorized and Actual Commissioned Staff by Zone							
Zone	IB Total Authorized 2012	2012 Actual	Actual as % of Authorized				
IB North Zone	54	60	111				
IB South Zone	38	25	65.8				
TOTAL	92	85	92.4				

Figure 5 IB Zones



ANALYSIS

This section reports the analyses for the NMSP, SID, and IB units. The PAM analysis of the NMSP begins this section followed by the analysis of the non-patrol SID and IB.

NMSP Results

Table 12 reports the actual and estimated number of officers and sergeants for each of the 12 NMSP districts. The table also shows some of the variables used by PAM to calculate the estimated number of staff. Particularly, the time to handle dispatched motor vehicle crashes, time

for other calls for service (e.g., crimes, criminal investigations, traffic emergencies), time for selfinitiated contacts (e.g., traffic stops, field interrogations, motorist assists traffic stops), and the shift relief factor (i.e., the average number of officers required to staff one shift position per day, 365 days a year) are important in the calculations. The next to last row in the table shows the average number of officers required per day to meet the daily workload. This is the total number of officers required to handle accidents and other calls for service during the hours of coverage in each district, and is based on the total time to handle the workload. The last row shows the total number of estimated officers in each district required per day to handle area and line patrol responsibilities and is based on the number of roadway miles in the patrol area, patrol intervals, patrol response time and speed. Area patrol is a reference to officers assigned to handle emergencies and non-emergencies in the district. Line patrol is referred to as the time officers are assigned to patrol specific roadway segments with little or no responsibilities for police services off the roadway (Stenzel 2007, 44). PAM does not distinguish between moving and stationary patrol time.

The number of officers required to meet the patrol level for each roadway type is based on:

- the number of roadway miles,
- the hours of patrol coverage per week,
- the average patrol speed (MPH),
- the shift length (hours), and
- the patrol interval (hours) set by agency policy.

Table 12 Significant Select PAM Variables by District												
		DISTRICTS										
	Dist1	Dist2	Dist3	Dist4	Dist5	Dist6	Dist7	Dist8	Dist9	Dist10	Dist11	Dist12
Actual Officers & Sergeants	26	32	17	19	36	21	55	14	26	11	20	28
Estimated Officers & Sergeants	34	40	35	26	62	29	43	31	52	18	41	29
Number of crash calls for service dispatched to NMSP	524	503	1,045	1,311	674	655	799	565	569	397	449	507
Average hours to handle each dispatched crash call for service	2.7	5.0	3.2	2.3	2.5	3.5	2.7	2.1	4.0	1.8	2.3	3.4
Number of other calls for service (excluding crashes) dispatched to NMSP	10,647	8,334	2,610	6,420	12,630	6,160	11,816	2,444	4,931	3,341	4,534	5,077
Average minutes to handle each dispatched other CFS (excluding crashes) to NMSP	106.7	66.2	92.7	88.3	118.6	82.9	134.8	85.1	152.6	65.7	116.9	99.8
Number of self-initiated contacts	16,129	7,388	19,471	14,767	30,928	13,235	7,983	13,478	23,472	6,007	12,176	24,899
Total hours spent on self-initiated contacts	3,344	1,848	4,140	3,891	6,678	4,218	3,078	3,378	6,455	2,239	2,943	5,089
Average minutes to handle self- initiated contact	12.4	15.0	12.8	15.8	13.0	19.1	23.1	15.0	16.5	18.6	14.5	12.3
Shift Relief Factor	1.6	2.1	1.7	1.6	1.7	1.8	1.6	1.8	1.8	1.6	2.1	2.1
Average number of officers required per day to meet the daily workload	7	3	2	4	8	3	10	1	5	1	3	3
Total number of officers required per day for area and line patrol	4	8	8	4	10	5	6	8	10	3	8	5

Table 13 reports the time in minutes to complete types of activities by activity type. Types of activities include administrative, self-initiated, reactive, and patrol. The sum of the activity type

times must equal 60 minutes. Administrative time shows the average number of minutes each officer spent on administrative activities (e.g., criminal reports and court time) during the study period. Reactive time reports the total time officers spent handling dispatched crash calls, including officer's time on the scene and subsequent investigation time as well as the total time in minutes per hour per officer to handle all calls for service except crashes and traffic stops or other self-initiated tasks. Self-initiated time reports the time officers spent on self-initiated activities while on patrol, (e.g., issuing violations and assisting disabled motorist) and patrol time shows the time officers had for uncommitted time including patrol activity (min/hr per officer). In total this table reports how much time each officer spent on average per hour on each of the work categories: administrative, reactive (i.e., crashes and other CFS), self-initiated, and patrol.

The general structure of the PAM is based on the assumption that administrative time and selfinitiated time do not account for a majority of each available hour. That is these two categories are not recommended to account for more than 30 minutes per hour. As evidenced by Table 13 only in District 10 (30 minutes and 49 seconds) do these two activities account for more than 30 minutes. It is also evident that the amount of time available for patrol varies considerable by district. District 1 and District 7 are both well below the average number of minutes available for patrol time and District 2 and District 8 are well above the average.

Table 13 Service Times in Minutes per Officer Hour by District						
District	Administrative Time	Reactive Time (traffic crash and other calls for service time)	Self-Initiated Time	Patrol Time		
1	22.11	22.20	3.28	12.41		
2	18.85	11.11	1.50	28.54		
3	19.95	7.44	5.34	27.27		
4	18.29	17.87	5.55	18.29		
5	21.52	15.37	4.87	18.24		
6	20.56	13.91	4.38	21.15		
7	17.57	24.33	2.89	15.21		
8	16.64	5.60	5.71	32.05		
9	19.36	10.37	6.45	23.82		
10	25.38	8.44	5.11	21.07		
11	20.97	9.26	4.09	25.68		
12	14.77	13.64	4.95	26.64		
Average	19.66	13.29	4.51	22.53		

After entering the data variables into the PAM application a separate estimate for the number of officers and field supervisors (i.e. sergeants) for each of the 12 NMSP Districts was produced. These district totals were summed to provide the estimate for the NMSP. Table 14 shows the results of the PAM calculations for officers and supervisors for each district and all of NMSP and compares the 2012 PAM estimates to the authorized and the actual number of staff in each district and all of NMSP.

The PAM estimate of 439 officers and sergeants is an increase of 134 above the actual number of 305 officers and sergeants and 73 above the 366 authorized officers and sergeants. The PAM estimate of officers is a 20% increase over the authorized number of staff.

The largest difference between the PAM estimate and the number of authorized officers and sergeants was found in District 9 (18 staff), District 8 (18 staff), and District 5 (17 staff). Interestingly District 2, District 6, District 7, and District 12 showed a decrease from the estimated number of officers and sergeants to authorized number of officers and sergeants. It is also important to note District 7 is the only district with an actual number of officers that is greater than the authorized number and shows the largest decrease from the authorized and actual to the estimated. The PAM estimates for the total number of required staff by percentage was highest in Districts 8, 11, and 9.

Table 14 PAM Estimate for Officers and Sergeants by District Compared to Actual and Authorized													
RESULTS TYPE		NMSP DISTRICTS											
	Dist 1	Dist 2	Dist 3	Dist 4	Dist 5	Dist 6	Dist 7	Dist 8	Dist 9	Dist 10	Dist 11	Dist 12	TOTAL
PAM Number of Officers	30	35	30	23	54	25	37	27	46	15	36	26	384
PAM Number of Sergeants	4	5	4	3	8	4	5	4	7	2	5	4	55
PAM Total Staff	34	40	35	26	62	29	43	31	52	18	41	29	439
Actual Number of Officers	22	26	15	16	29	17	46	11	21	9	16	23	251
Actual Number of Sergeants	4	6	2	3	7	4	9	3	5	2	4	5	54
Actual Total Staff	26	32	17	19	36	21	55	14	26	11	20	28	305
Difference (PAM Estimate - Actual)	8	8	18	7	26	8	-12	17	26	7	21	1	134
Authorized Number of Officers	25	38	22	20	38	25	43	13	29	13	19	27	312
Authorized Number of Sergeants	4	6	3	3	7	5	7	3	5	2	4	5	54
Authorized Total Staff	29	44	25	23	45	30	50	16	34	15	23	32	366
Difference (PAM Estimate - Authorized)	5	-4	10	3	17	-1	-7	15	18	3	18	-3	73

Figure 6 is a graphic comparison showing the PAM estimated number of officers and sergeants, the authorized number for each district, and the actual number of officers and sergeants by district.



Impacting the Data

This section describes some of the data fields that impact the estimates the most. The 2007 version of the PAM application is not proprietary software but it does use MS Access and Visual Basic scripting behind the user interface. For this reason it is difficult to determine with precision how the different data elements affect the estimates. As a means to gain some insight on the impact of different variables on the estimates, we looked at the PAM estimates from three angles. We reviewed studies from other states and jurisdictions in an attempt to understand from these states what the primary factors in the PAM formulas are that impacted their PAM estimates. Regrettably, most studies do not report in sufficient detail. The exception was a report from the Corpus Christi Texas Police Department produced by the authors of the PAM method. We also looked carefully at the data we entered into PAM to find similarities corresponding to the highest results PAM produced. In addition to the analysis from the Corpus Christi report and scrutinizing the PAM data, we conducted a correlation analysis of the different variables.

In their 2009 study of the staffing and allocation needs of the Corpus Christi Police Department, Freesmeyer, Stenzel, and Gielow state, "(that) while no rigid guidelines exist for the "proper" value for either reactive time or proactive time, past studies have reflected a desire by agencies to maintain a reactive value of 25 to 35 minutes per hour." There are several reasons for this even split. One, balancing the officer's time controls the officer from handling only calls for service and allows the officer to do patrol activities. Two, while handling calls for service officers have a longer response time to new calls. Three, handling reactive duties lengthens the time between patrol intervals, (i.e., the interval of time between two consecutive passes by the same location by officer units while on random patrol). The officer is handling the call and is effectively out-ofservice and cannot respond to an emergency as quickly as when on patrol.

The IACP suggests allocating patrol resources as follows: 20 minutes of each hour to be allocated to calls for service, 20 minutes of each hour to be allocated for administrative duties, and 20 minutes of each hour should be free for proactive patrol response (IACP 2010).

A review of Table 13 shows NMSP officers spent on average approximately 14 minutes every hour handling reactive tasks, (i.e., dispatched calls for service, dispatched traffic accidents), approximately 20 minutes on average to handle administrative duties, and approximately 5 minutes each hour performing proactive traffic stops. This left approximately 22 minutes for routine patrol each hour.

Correlation

In this section, we describe the use of bivariate correlation to analyze the effects of each of the PAM variables, e.g., shift length, number of crashes handled, etc. on the estimated number of officers, sergeants, and total staff required. Using correlations it is possible to measure the degree of linear relationship or association between two variables.

Before describing the results, we provide a brief discussion on interpreting the correlation results. The correlations show an association not causation. This is an important distinction. When an association exists between two variables, it means that the average value of one variable changes as the value of the other variable changes. A correlation is the simplest type of association -- linear. When a correlation is weak it means that the average value of one variable changes only slightly (only occasionally) in response to changes in the other variable. In some cases, the correlation may be positive, or it may be negative.

In our analysis we only show the variables that were significant at the .01 or .05 level. The closer the number is to 1.0 or -1.0, the stronger the variable is related to the PAM officer estimate, either

positively or negatively. The number of districts in our population was 12 and we looked at the variables in our analysis that were strongly correlated.

Table 15 shows the variables that were moderately or strongly correlated to the PAM estimates. There were a total of 62 variables entered into the PAM application. Of the 62 variables six were moderately or strongly correlated to our results. In addition to the variables that were moderately or strongly correlated, several variables were weakly associated. These included the average annual holiday and vacation leave per officer and the average service time for each other call for service.

Table 15 PAM Variable Correlations				
PAM Variable	Total Required Staff for the District			
Total Number of Other CFS Handled by the Agency During the Hours of Coverage During Data Collection	.776**			
Roadway Category 2 Miles – US and NM roads and associate frontage roads	.750**			
Roadway Category 3 Miles – NM County roads	.947**			
Total Number of Self-Initiated Contacts Within the District During the Data Collection Period	.774**			
Total Time (Hours) Spent on Self-Initiated Contacts in the District by All Officers on Patrol During Data Collection	.645*			
Area in Square Miles of the District	.592*			

* p < .01; ** p < .05; n = 12

Previous studies used two roadway categories and this study incorporates three roadways categories, i.e., one, interstates and frontage roads; two, US - NM roads and associated frontage roads; and three, county roads. Adding the county roads increased the overall patrol miles by 44,665 miles or 314% from previous studies. Roadway miles in categories 2 and 3 as had a strong correlation to the staffing level.

In addition to roadway miles another variable associated with the PAM estimate was the size of the District. Typically as the size of the district increased, roadway miles also increased. Besides these geographic variables, we found the number and time spent handling self-initiated contacts (e.g., traffic stops) was moderately associated with the PAM staffing requirements. In addition to these variables, we found the number of calls for service other than crashes also correlates to the PAM staffing estimates.

SID Results

The estimated number of officers required in the SID to accomplish all the work during the year equals approximately 40 officer/agents. During the study period there were an average of 18.5 officers. The difference in the estimate to the actual is 21.5 officers.

Table 16 shows the case weight in minutes for each work type category along with the number of activities opened in the work type category during 2011. Below the rows of work type categories is the total workload in hours (36,669). The annual available time is shown and this is reduced by the various non-work type activities, (e.g., special assignments, leave time, office activities). The result is the amount of time available to accomplish all the work open in 2011. The total workload hours were divided by the amount of time available per officer and the result shows 40 officers required to handle the entire 2011 workload including the backlog.

Table 16 Agent Staff Needs for SID					
Work Type Category	Case Weight (Hours)	Number of Open Activities in CY2011			
Liquor License Posting (notices)	2.0	255			
Complaints on Liquor Licenses and Complaints in General	2.0	163			
Premise Inspection of Liquor Licenses	2.0	4,824			
Seminars Given to Liquor Establishments	2.0	57			
Seminars Given to Law Enforcement	8.0	12			
Source Investigations	8.0	7			
Serving Subpoenas	8.0	52			
Routine Liquor Establishment Checks	3.0	3,900			
CCU Case Process	0.77	6,156			
Additional Background Checks	0.97	616			
Court Time	2.5	416			
Non-Traffic Citations	0.5	426			
Admin Citations issued	0.5	361			
Verify Firearms/Instructor Training	0.17	6,156			
Issue CCU License	0.25	6,156			
Alcohol Sales to Intoxicated Persons Operation	8.0	27			
Alcohol Sales to Minors Operation	8.0	31			
CCU Phone Calls	5.0	5,000			
Underage Enforcement Operations	8.0	444			
CCU Instructors	8.0	350			
Report Writing (201)	3.0	250			
Description	Hours				
Total Activity Specific Workload (Weights X Cases)		36,669			
Officer Average Annual Availability		2,080			
Special Assignments (-20 days)		156.5			
Vacation Time (-12 days)		98.3			
Holiday Time (-10 days)		79			
Admin Leave/Comp Time (-6 days)		46.3			
Sick/Personal Time (-10 days)		76.2			
Military Time (-14 days)		116			
Training (-7 days)	57.5				
Leave without Pay (-1 day)	8				
Non-work Time: Office/Activities/Phone Calls/Computer (239				
Non-Work Time: Travel (-22 days)	172				
Miscellaneous Duties (meetings, servicing vehicles and f	112				
Available Time for Work Type Workload		918.8			
Total FTE Officer Resource Predicted Demand		40			
FTE Officer Resource Current Supply		18.5			
Difference		21.5			

IB Results

The estimated number of officers required in the IB to accomplish all the work during the year is 115 agents statewide. During the study period there were an average of 81 officers. The difference in the estimate to the actual is 34 officers.

Similar to the SID results, Table 17 shows the variables used in the calculation for determining the number of staff in IB required to handle the 2011 workload. The data for the IB calculation was included in the activity and time data provided by NMSP R&D. The primary work of the IB is criminal investigations. These were the only type of tasks that included the hours worked and the number of activities. Other tasks that could not be specifically associated by time and count were included in the list of activities deducted from the time one FTE on average has to perform criminal investigations.

Table 17 Agent Staff Needs for IB					
Work Type Category	Work Type Category Investigation Weight (Hours)				
Criminal Investigations	83.53	1,626			
Desc	ription	Hours			
Total Criminal Investigation Workload (V	Veight X Investigations)	135,825			
Officer Average Annual Availability		2,080			
Security & Special Assignments (-4 day	35				
All Leave Time (-26 days)	207				
Administrative (-45 days)	361				
Self-Initiated Activity (-0 days)	2.5				
Other Investigative duties excluding crir	9.5				
Work Related Travel (-6 days)	45				
Training (-16 days) 12					
Miscellaneous Duties (Meetings, servici	112				
Available Time for Criminal Investigation	1,182				
Total FTE Officer Resource Predicted D	115				
FTE Officer Resource Current Supply	81				
Difference		34			

CONCLUSION

This staffing study produced staffing estimates of officers and sergeants for NMSP, SID, and IB and involved a number of tasks. Tasks included a review of law enforcement staffing and personnel allocation literature, the selection of a patrol staffing method, the design of a staffing method for the non-patrol SID and IB, the collection and review of several data sets dealing with calls for service and work activities, the collection of policy level data, the use of the PAM model for estimating NMSP staffing numbers by district and total, and determining staffing needs for the SID and IB using the non-patrol method.

The literature review and survey of state patrol and other law enforcement agencies confirmed PAM is a widely used and accepted method for determining patrol allocations. In addition, PAM had been used by DPS in past studies for estimating NMSP staffing needs. For these reasons we chose to used PAM and it worked well for determining the NMSP patrol needs. The modified workload method we settled on was applicable for IB and SID and worked well. Both methods met the requirements of the study.

Prior to this study, NMSP staffing was last reviewed in 2007. An interval of six years between studies is acceptable. As an example the NM Judiciary has successfully conducted full staffing studies every five to seven years. The Judiciary includes an annual update. We recommend the DPS adopt a similar schedule. Updates could be done on an annual basis and full reviews conducted at least every five years or when laws, policies, or workloads increase substantially to justify a full review before five years.

Using the PAM method for the NMSP we found the PAM estimate of 439 officers and sergeants is an increase of 134 above the actual number of 305 officers and sergeants and 73 above the 366 authorized officers and sergeants. The PAM estimate of officers is a 20% increase over the authorized number of staff and 44% greater than the actual number of officers.

On average, NMSP officers spent approximately 13.5 minutes every hour handling reactive tasks and 20 minutes each hour for administrative tasks which leaves almost 28 minutes each hour for proactive traffic stops and routine patrol. These time splits are in-line with the suggested PAM times.

Using the modified workload method we estimated the SID needs 40 officers/agents to complete the workload during the year. During the study period there was an average of 18.5 officers. The difference in the estimate to the actual is 21.5 officers or an increase of 116% in the number of officers. The estimated number of officers in the IB is 115 agents statewide. During the study period there was an average of 81 officers. The difference from the actual to the estimate is an increase of 34 officers (42% increase).

This study was impacted by the quality of the available data. The DPS CAD data and the Time and Activity data were not easily linked to each other and the CAD calls for service data did not track with the time and activity data entered by each officer in a separate database.

As noted several times earlier in the report PAM is designed for patrol functions and limited special assignments and is appropriate for calculating patrol staffing levels for NMSP. To include SID and IB in the study we designed a modified workload assessment procedure to calculate the SID and IB workloads. This method was adequate for this study and we believe it worked well to estimate the number of agents and sergeants needed to complete the work assigned to SID and IB.

In the future a workload assessment should be considered for non-patrol units that incorporates a time study component. This would require that participating staff record all their work activities for a period of time. The result would be an estimate of the total amount of time, by staff position, spent, on average, on work. This type of study also includes a qualitative component that uses experts to make adjustments to the time study preliminary results. Due to time and budget constraints this was not possible for this study.

CAD data that accounts for work time every day could be analyzed to identify the workload by hour of the day. The workload could then be compared to the staffing schedule. It is possible a change to the staffing schedule could have the effect of handling the workload more efficiently than the current 8, 9, or 10-hour schedule used by NMSP. One possibility is to incorporate a 12-hour schedule. Other agencies responsible for 24 hour 7 days per week coverage (i.e., hospital nursing units, emergency medical services, police departments) have adopted a 12-hour scheduling format. Scheduling seems mundane but an efficient schedule that matches the workload could potentially have the effect of bringing proactive time more in line with reactive time each hour (Freesmeyer, et.al, 2009).

Certainly, more resources are necessary for NMSP to meet the calls for service workload and for line patrol. As pointed out in our description of the state, the downturn in the economy has impacted public services provided by rural communities in New Mexico. Since 2007 approximately 15 towns in the state have closed their police departments. This means that Sheriff's deputies and NMSP officers now have to handle law enforcement services in these communities, which has increased their workloads.

Similarly, it is clear SID and IB need more resources to complete their respective workloads. Based on their current workloads, SID and IB do not have enough staff.

In the future, experience gained in this study will reduced the difficulties gathering data and applying time to workload events. The recommendation regarding CAD data will make future staffing studies less time consuming and more representative of the actual workload.

About the New Mexico Sentencing Commission

The New Mexico Sentencing Commission serves as a criminal and juvenile justice policy resource to the State of New Mexico. Its mission is to provide information, analysis, recommendations, and assistance from a coordinated cross-agency perspective to the three branches of government and interested citizens so that they have the resources they need to make policy decisions that benefit the criminal and juvenile justice systems. The Commission is made up of members from diverse parts of the criminal justice system, including members of the Executive and Judicial branches, representatives of lawmakers, law enforcement officials, criminal defense attorneys, and members of citizens' interest groups.

This and other NMSC reports can be found at: http://NMSC.unm.edu/

REFERENCES

AELE Monthly Law Journal. (2010). *Employment Law Section - July 2010*. www.aele.org/law/Digests/empl136.html.

Alexander Weiss Consulting, LLC. (2010). *Traverse City Police Workload Analysis*. Evanston, IL.

Massey, B., (2012) Census: Poverty rate up in New Mexico: Census Bureau reports poverty rate increased in New Mexico. Associated Press. Thu, Sep 13, 2012 9:42 AM EDT

Bellmio, P. (2004). *Shreveport Police Department: Patrol Staffing Assessment*. Annapolis, Maryland: Author.

Bower, W., Mollison, A., and Nicole Peachey. (2001). *New Mexico State Police Agency Staff Study*. Department of Public Safety.

Butler, R. (Contributor), Jack R. Greene, Editor. (2007). *The Encyclopedia of Police Science Third Edition*. Routledge Taylor & Francis Group, New York, NY.

Chaiken, J.M., and Peter Dormont. (1975). *Patrol Car Allocation Model: User's Manual.*, Rand Institute.

City of Vancouver Police Department. (2007). *Vancouver Police Department Patrol Deployment Study*. Vancouver, Canada.

Department of Public Safety. (2004). Law Enforcement Program: Agency Staff Study.

Department of Public Safety. (2006). Department of Public Safety Law Enforcement Officer Compensation Plan.

Department of Public Safety. (2007). New Mexico State Police 2007 Workload Assessment C.A.L.E.A. Standard 16.1 "Allocation and Distribution of Personnel.

Freesmeyer, T. J., Stenzel, W. W., and William E. Gielow, (2009) *City of Corpus Christi Police Staffing and Allocation Study*. Etico Solutions Inc. Macomb, Illinois.

Georgia Performance Audit Operations Division. (2011). *Georgia State Patrol: Opportunities* exist to better align troopers and resources with GSP's core mission. Website: www.audits.ga.gov.

Idaho State Police Planning, Grants and Research. (2007). Idaho State Police Allocation Study.

International Association of Chiefs of Police. (2008). *Enforcement Program Staffing Requirements: Study Report Presented to the Washington Dept. of Fish and Wildlife*. Alexandria, VA.

International Association of Chiefs of Police. (2009). *Glendale Police Staffing Study 2009*. City of Glendale, AZ.

International Association of Chiefs of Police. (2010). *Glendale Police Staffing Study 2010*. City of Glendale, AZ.

International Association of Chiefs of Police. (2012). *Patrol Staffing and Deployment Study Brochure*. IACP Website, http://www.theiacp.org/LinkClick .aspx?fileticket=AKL78d4MBw8%3D&tabid=252.

ICMA Center for Public Safety Management. (2011). *Police Operations & Data Analysis Final Report: Troy, Michigan.* International City/County Management Association, 777 North Capitol Street NE, Suite 500, Washington, DC 20002.

Larson, R. (1972). *Urban Police Patrol Analysis*. Cambridge, Massachusetts: MIT Press.

Matarese, L. (2012). *Determining Police Staffing and Deployment*. ICMA Center for Public Safety Management website. http://icma.org/en/Search?s=workload.

Metropolitan Police Department. (2005). *Evaluation of the Police Service Area Boundary Realignment*. http://mpdc.dc.gov/mpdc/frames.asp?doc=/mpdc/lib/ mpdc/info/districts/pdf/psa_boundary_realignment_evaluation.pdf. Washington, D.C.

New Mexico Health Department. (2012). 2010 health statistics found on June 19, 2012 on the official website of the New Mexico Health Department: http://nmhealth.org/ERD/healthdata/hdata.shtml

New Mexico Human Services Department. (2006). *Barriers to obtaining health insurance among Native Americans in New Mexico*. Obtained from the State of New Mexico's official government website: http://www.insurenewmexico.state.nm.us/Inm/Native%20American% 20Health%20FINAL%20REPORT%20(2-3-06).pdf

New Mexico Legislative Finance Committee. (2005). *Department of Public Safety: Review of Management Practices and Staffing Levels*. Santa Fe, NM. Report #06-02.

Prox, R.G. (2007). *The Unbending Blue Line: Transformational Change In Police Organizations With A Case Study Of A West Coast City Police Department Patrol Deployment*. Master's Thesis. Simon Fraser University.

Scottsdale Police Department. (2004). *PAM-Police Personnel Allocation Manual: Overview-what it is and how it works*. www.scottsdaleaz.gov/Assets /documents/BoardAgendas/.../PAM.pdf MS PowerPoint.

Stenzel, W.W. (2007). 2007 Pam Update (Version 7.0).

Sullivan, G., Bellmio P., Hubler G., Somers, S., & Adkins, B. (2001). *Performance Audit of the Pierce County Sheriff's Department*. Carlsbad, CA: Police Management Advisors.

The PAR Group, LLC. (2008). *Rockford Police Department: Resource Allocation and Deployment Interim Report.* The PAR Group, Lake Bluff, IL.

The Traffic Institute Northwestern University. (1993). *Police Allocation Manual: Determination of the Number and Allocation of Personnel for Patrol Services for State Police Departments, Special Version S3.0.*

United States Census Bureau. (2012). 2010 census statistics found on June 18, 2012 on the Official United States Government U.S. Census Bureau website: http://quickfacts.census.gov/ qfd/states/35000.html

University of New Mexico Bureau of Business and Economic Research. (2012). 2010 census statistics found on June 18, 2012 on the UNM'S BBER official website: http://bber.unm.edu/ cens2010data.htm

University of New Mexico – Institute for Social Research. (2012) *New Mexico Agencies Reporting UCR Data*. Unpublished monthly report to the DPS Law Enforcement Records Bureau.

APPENDICES

Appendix A:

PAM Data and Policy Variables

	PAM DATA and POLICY VARIABLES	
VARIABLE		TVDE
NUMBER	VAKIABLE DESCRIPTION	TYPE
1.1.	Autonomous Patrol Area	D
1.2.1	Shift Length	D
1.2.2	Average Work Week	Р
1.2.3	Average Number of Officers to be Supervised by each Field Supervisor	Р
1.2.4	Percentage of Field Supervisor on-duty time spent on patrol activities	Р
1.2.5.1	Coverage per Week C1 Roads	Р
1.2.5.2	Average Patrol Speed C1 Roads	Р
1.2.5.3	Patrol Interval Performance Objective C1 Roads	Р
1.2.6.1	Coverage per Week C2 Roads	Р
1.2.6.2	Average Patrol Speed C2 Roads	Р
1.2.6.3	Patrol Interval Performance Objective C2 Roads	Р
1.2.7.1	Coverage per Week C3 Roads	Р
1.2.7.2	Average Patrol Speed C3 Roads	Р
1.2.7.3	Patrol Interval Performance Objective C3 Roads	Р
1.3.1	Total Number of Days in the Data Collection Period	Р
1.3.2	Total Number of Crashes Handled by the Agency During the Hours of Coverage During Data Collection	D
1.3.3	Average Service Time (Hours) for Each Crash During the Hours of Coverage	D
1.3.4	Total Number of Crashes Handled by the Agency During the Hours of Non-Coverage During data Collection	D
1.3.5	Average Service Time (Hours) for each Crash During the Hours of Non-Coverage	D
1.3.6	Total Number of Other CFS Handled by the Agency During the Hours of Coverage During Data Collection	D
1.3.7	Average Service Time (Hours) for Each Other CFS During the Hours of Coverage	D
1.3.8	Total Number of Other CFS Handled by the Agency During the Hours of Non-Coverage During Data Collection	D
1.3.9	Average Service Time (Hours) for Each Other CFS During the Hours of Non-Coverage	D
1.3.10	Percentage of Crashes that Cannot be Preempted (%)	Р
1.3.11	Percentage of Other CFS that Cannot be Preempted (%)	Р
1.3.12	Percentage of Administrative Activities that Cannot be Preempted (%)	Р
1.3.13	Percentage of Self-Initiated/COP Activities that Cannot be Preempted (%)	Р
1.3.14	Total Time (Hours) Spent by Officers on Regularly-Scheduled Time to Handle Crashes in the APA	D
1.3.15	Total Time (Hours) Spent by Officers on Overtime to Handle Crashes in the APA During Hours of Coverage	D
1.3.16	Total Time (Hours) Spent by Officers on Overtime to Handle Other CFS in the APA	D
1.3.17	Total Time (Hours) Spent by Officers on Overtime to Handle Other CFS in the APA During Hours of Coverage	D
1.4.1	Roadway C1 Miles	D
1.4.2	Roadway C2 Miles	D
1.4.3	Roadway C3 Miles	D
1.5.1	Average Number of Regularly-Scheduled On-Duty Hours Off Assignment Per Year Per Officer	D
1.5.2	Average Number of Overtime Hours Worked on Assignment During Hours of Coverage Per Officer Per Year	D
1.5.3	Average Number of Comp Time Hours Taken Per Officer Per Year	D
2.2.1	Total Time (Hours) Spent on Admin Activities Within the APA During Data Collection Period	D
2.2.2	Total On-Duty Hours by Patrol Officers Within the APA During the Data Collection Period	D
4.2.1	Total Number of Self-Initiated Contacts Within the APA During the Data Collection Period	D
4.2.2	Total Time (Hours) Spent on Self-Initiated Contacts in the APA by All Officers on Patrol During Data Collection	D
4.2.4	Select Number of Self-Initiated Contacts per Shift per Officer Performance Objective	D
4.3.1	Total Time (Hours) Spent on Self-Initiated Contacts in the APA by All Officers on Patrol During Data Collection	D
4.3.2	Total On-Duty Hours by Patrol Officers Within the APA During the Data Collection Period	D
5.2.1.2	Coverage per Week (Hours)	Р
5.2.3.1	Performance Objective, Percentage of Crashes and Other CFS Activities	Р
5.3.1.2	Coverage per Week (Hours)	Р
5.3.2.1	Area (Square Miles) of APA	Р
5.3.2.2	Average Response Speed (Emergencies)	Р
5.3.2.3	Average Travel Time (Emergencies)	Р

5.4.2	Coverage per Week (Hours)	Р
5.4.3	Area (Square Miles) of APA	D
5.4.4	Average Response Speed (Non-Emergencies)	D
5.4.5	Average Travel Time (Non-Emergencies)	D
7.2.1.2	Average number of on-duty officers per day on specialized assignment 1	D
7.2.1.3	Percentage of on-duty time spent on patrol activities by officers assigned to special assignment 1	D
8.2.3.1	Average Annual Vacation Leave Per Officer (Hours)	D
8.2.3.2	Average Annual Holiday Leave per Officer (Hours)	D
8.2.3.3	Average Annual Sick Leave Per Officer (Hours)	D
8.2.3.4	Average Annual Other Leave Per Officer (Hours)	D
8.5.1	Current Number of Officers and Field Supervisors Within the APA	D
8.5.2	Current Number of Staff and Command Personnel Within the APA	D

Appendix B:

Road Mileage For NMSP Districts

Roadway Miles in 12 NMSP Districts						
District	Miles of Frontage Road	Miles of Interstate	Miles of NM Routes	Miles of US Routes	Miles of County Road	Total Miles
1	84	147.6	274.7	75.9	2,155.3	2,737.5
2	120.3	278	1,174.2	347.9	3,762.9	5,683.3
3	0.7	0	911.3	896	4,983.4	6,791.4
4	86.1	227.8	276.5	102.9	1,922.5	2,615.8
5	96.4	369.5	827.1	303.6	6,728.8	8,325.4
6	15.1	236	571.4	52.7	3,116.6	3,991.8
7	8.2	0	539.5	329.8	2,435.7	3,313.2
8	6.4	0	356.1	610.5	3,332.6	4,305.6
9	115.1	267.8	1,061.3	510.2	6,005.5	7,959.9
10	1.3	0	250.8	427.1	1,439.7	2,118.9
11	39	249.2	665.4	255.5	4773	5,982.1
12	61.1	220.4	621.6	143.7	3,930.9	4,977.7

Appendix C:

Square Mile Area of NMSP Districts

NMSP Square Miles per District				
District	NMSP			
1	2,701			
2	13,979			
3	14,788			
4	4,846			
5	9,478			
6	9,618			
7	6,873			
8	12,461			
9	13,771			
10	6,672			
11	16,092			
12	10,325			

Appendix D:

SID Work Type Category Descriptions

Liquor License Posting (notices):

Alcohol and Gaming Division sends SID a request for service to post a location for a new liquor license or change in ownership. SID finds the location, puts up a large poster, has the applicant sign the certificate, measures how far the nearest school, church and military installation is located and notes same on the certificate. Submits same to supervisor for approval who submits it to the Administrative people who log it and send it on the AGD.

Complaints on Liquor Licenses and Complaints in General:

SID gets complaints from AGD, other Law Enforcement Officers and the general public. SID works these complaints which range from tobacco sales to minors to Alcohol sales to Minors and Sales to Intoxicated Persons. Some complaints are handled within 24 hours while others may take several days or longer to complete.

Written Premise Inspection of Liquor Establishments:

SID conducts Written Premise Inspections of Liquor Licenses on a regular basis. The Agents who conduct these inspections have a form that they must complete as they conduct their inspection. Most of the time verbal warning are given depending on the violations found. If it is a major violation or if a problem persists, administrative citations are issued.

Seminars Given to Liquor Establishments:

Time spent in Liquor Establishments. SID gives training seminars to Liquor Establishments whenever they request them or when the Alcohol & Gaming Division requires them to do so. The training seminars consist of the New Mexico State Statutes and Alcohol & Gaming Rules and Regulations dealing with Sales and Service of Alcohol.

Seminars Given to Law Enforcement:

Time spent instructing law enforcement or law enforcement related personnel. SID gives Law Enforcement Officers training seminars in reference to the New Mexico State Statutes and Alcohol & Gaming Rules and Regulations dealing with Sales and Service of Alcohol.

Source Investigations:

Law Enforcement Officers usually call SID and request we conduct a source investigation in reference to an alcohol related accident which may result in death or serious injury.

Serving Subpoenas:

SID serves subpoenas at the request of Alcohol & Gaming Division whenever they are going to have an Administrative Hearing on a Liquor Establishment.

Routine Liquor Establishment Checks:

Time spent conducting routine inspections on Liquor establishments. Primarily checking for any and all violations of the Liquor Control Act or anything related to Liquor law enforcement and also checking for any other criminal violations.

CCU Additional Background Checks:

CCU conducts additional background checks on applicants who come back with an arrest or charge that could disqualify them from getting a Concealed Carry Permit. Additional checks are done to ensure that the arrest or charge may be the correct one or that the matter may have been cleared up.

Court Time:

Time spent by Agents attending Magistrate, Metro or Federal Court. Time spent by Agents attending Alcohol and Gaming Division Administrative Hearings.

Non-Traffic Citations:

Time spent by Agents issuing Non-Traffic citations to violators. Some violations: urinating in public, drinking in public, minors in possession of alcohol, presenting false ID, minors entering a liquor establishment, possession of marijuana etc.

Admin Citations issued:

Time spent by Agents issuing administrative citations to Liquor Establishments for violations of the Liquor Control Act and other related State Statutes.

CCU Verify Firearms/Instructor Training:

Time spent by CCU Agents checking on CCU approved Instructors while they are conducting their training to students who are applying for a CCU License. This requires CCU Agents to travel to wherever the training is taking place.

CCU Issue CCU License:

Time spent by CCU Agents issuing CCU Licenses. This requires the agents accessing the MVD records to retrieve Drivers License Photos, entering data into the computers and accessing the NISCA machine to issue the CCU License. Entire CCU file is then scanned into the system.

Alcohol Sales to Intoxicated Persons Operation:

Time spent by SID Agents looking for sales to intoxicated persons. This requires Agents going into liquor Establishments and checking for over serving of alcohol or monitoring retail Liquor Licenses (package sales) for the same thing. Operations last until 2:00 AM sometimes.

Alcohol Sales to Minors Operation:

Time spent conducting Minor Compliance and should tap operations. In Minor Compliance Operations SID Agents employ minors (Protective Source Agents) as agents of the state to go into liquor establishments and purchase or attempt to purchase alcoholic beverages. In the Shoulder Tap Operations the minors wait outside a liquor establishment and ask people going into the liquor establishment if they will buy alcohol for them. Minor are monitored at all times.

CCU Phone Calls:

Time spent by CCU Agents answering CCU related questions, such as questions from CCU applicants who are asking why they have not received their CCU license, answering questions pertaining to CCU application process, answering questions about whether or not they can carry firearms in the state of New Mexico and or whether their CCU from another State is valid in New Mexico.

Underage Enforcement Operations:

Time spent by SID Agents working underage enforcement operations at concerts or special events where minors and alcohol are present. Minors usually get their hands on alcohol by their adult friends or acquaintances.

CCU Instructors:

Time spent by CCU Agent with the CCU Instructors. CCU Instructors must be licensed by CCU to be CCU Instructors. Currently there are 350 CCU Instructors that have their own unique questions and problems that the CCU Agent has to deal with.

Report Writing (201):

Time spent on routine and administrative reports, including criminal investigative reports.