

## Specific & Findings

**In this brief:** A review of the New Mexico Department of Public Safety Staffing Study: Final Report, focused on a description of the full study including the methodology, results, and conclusion.

**The full report titled** *New Mexico Department of Public Safety Staffing Study: Final Report* can be found at: <http://nmssc.unm.edu>.

## Study Highlights

- The study used a nationally accepted method to estimate the number of NMSP patrol officers and sergeants.
- A modified workload method was used to estimate the number of Special Investigation Division and Criminal Investigation Bureau agents.
- Currently the number of NMSP patrol officers and sergeants is 305 or 83% of the authorized level of 366.
- An estimated 439 patrol officers and sergeants are required to patrol the interstates, US routes, NM Highways, county roads, and handle the daily workload.
- The patrol officers and sergeant estimate is 73 staff above the current authorized level.
- We estimated 115 IB agents are needed to accomplish all the work during the year.

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## New Mexico Department of Public Safety Staffing Study: *Report in Brief*

### 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, the New Mexico State Police Uniform (NMSP), Special Investigation Division (SID) agents, and the Criminal Investigations Bureau (IB).

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.

### Methodology

To begin, we completed a review of the literature describing existing police allocation methods. We reviewed five law enforcement allocation models before deciding to use the Police Allocation Model (PAM) developed by the Northwestern University Center for Public Safety to evaluate the NMSP. The strength of the PAM method is its 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.

PAM is used for determining the allocation of patrol operations. It is not designed to determine shift and scheduling patterns. Also, 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 efficiently).

The procedures in PAM 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. Further, PAM relies on historical workload data and user-supplied performance objectives and policies. The PAM approach can estimate the average number of on-duty officers needed each day in each district. PAM can also determine appropriate staffing levels and assess the impact of hypothetical scenarios on the required staffing level.

In conjunction with the literature review we collected information from state law enforcement agencies to supplement the information from the literature review regarding the use of the PAM method. We adopted a one-year study period, i.e., calendar year 2011.

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 two NMSP districts in the PAM software.

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- In 2011, NMSP officers spent 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 28 minutes each hour performing proactive traffic stops and routine patrol.
- Approximately 22 minutes of each hour in 2011 was spent on routine patrol.
- The Investigations Bureau (IB) investigates criminals and criminal activity in the state.
- The difference in the IB estimated agents to the current number of agents is 34 agents.
- SID enforces the state Liquor Control Act and Concealed Handgun Carry Act, as well as conducting special investigations.
- We estimated 40 SID agents are needed to handle all the assigned work. The difference in the estimate to the actual is 21.5 agents.
- DPS should consider conducting staffing updates annually and full reviews every five years or when laws, policies, or workloads change sufficiently for a full review.

## Target Audience

New Mexico legislators and legislative staff; the New Mexico Department of Public Safety, State government officials; other law enforcement agencies, and criminal justice practitioners and researchers.

Staff from the DPS Research and Development office provided us with NMSP data for the PAM method and patrol portion of the study and IB data for the modified workload measurement process. SID provided data for their portion of the study and the NM Dept. of Transportation provided road mileages and district sizes. DPS staff decided policy data issues and objectives necessary to complete certain sections of the PAM model.

The PAM method is a well-accepted process for estimating staffing levels in state law enforcement patrol agencies. In conjunction with using the PAM method, we modified a workload measurement process to calculate the staffing needs of the non-patrol bureaus of DPS, i.e., SID and IB.

### Modified Workload Method

The modified non-patrol workload study collects all the work tasks of the department, lists the average amount of time to perform each work task, counts the number of tasks opened during the year, summarizes the time available to perform the work, and divides the amount of work by the time available. The result is the estimate of the number of staff necessary to meet the current volume of work.

This method is similar to the method that has been used for a number of years by

the NM Judiciary to determine judicial resource requirements and clerical staffing needs.

## Results

### 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. As of 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.

After entering the data variables into the PAM application the system produced a separate estimate for the number of uniform officers and field supervisors (i.e., sergeants) required within each of the 12 NMSP districts. These district totals were summed to provide the estimate for the NMSP. Table 1 shows the results of the PAM calculations for officers and sergeants for each district and compares the 2012 PAM estimates to the actual and authorized number of staff in each district.

The PAM estimate of 439 total required staff is an increase of 134 officers above the actual number of 305 staff and 73 above the number of 366 authorized

**Table 1. PAM Estimate for Officers and Sergeants by District Compared to Actual and Authorized**

RESULTS TYPE	NMSP DISTRICTS												TOTAL
	Dist 1	Dist 2	Dist 3	Dist 4	Dist 5	Dist 6	Dist 7	Dist 8	Dist 9	Dist 10	Dist 11	Dist 12	
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

officers. The PAM estimate of officers is a 20% increase over the authorized number of staff.

As a means to find out what variables impacted the estimates, we looked at the PAM estimates from three angles. We reviewed studies from other states and jurisdictions to understand from these states what the primary factors in the PAM formulas are that impacted their PAM estimates. We also looked carefully at the data we entered into PAM to find similarities corresponding to the highest results PAM produced. In addition to reviewing other states and inspecting our data, we conducted a correlation analysis of the different variables.

There is no rigid guideline 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 perform 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-of-service and cannot respond to an emergency as quickly as when on patrol. We discovered 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.

There were a total of 61 variables entered into the PAM application. Of the 61 variables we found six were strongly associated with our results. Previous studies used two roadway categories. The 2012 PAM estimate 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. The correlation analysis identifies US–NM roads and county roadway miles as having a strong correlation to the staffing level.

In addition to roadway miles another variable strongly associated with the PAM estimate was the size of the district. Intuitively, the district size and roadway miles are associated to one another. As the size of the district

increases, roadway miles also increase. Besides these geographic variables, we found the number and time spent handling self-initiated contacts (e.g., traffic stops) 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 and IB**

SID enforces the state Liquor Control Act and Concealed Handgun Carry Act, as well as conducting special investigations. We estimate the 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 2 shows the total case weight in hours (36,669) for all work type categories for 2011. The average annual available time for an officer equals 2,080 hours. This number 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 would be required to handle the entire 2011 workload including the backlog.

<b>Table 2 Agent Staff Needs for SID</b>	
<b>Description</b>	<b>Hours</b>
Total Job Specific Workload (Weights X Activities)	36,669
Officer Average Annual Availability	2,080
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

The Investigations Bureau investigates criminals and criminal activity in the state. 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.

We used the same process to determine the staffing needs of IB as we used for the SID. The results are shown in Table 3.

<b>Table 3 Agent Staff Needs for IB</b>	
<b>Description</b>	<b>Hours</b>
Total Criminal Investigation Workload (Weight X Investigations)	135,825
Officer Average Annual Availability	2,080
Available Time for Criminal Investigation Workload	1,182
Total FTE Officer Resource Predicted Demand	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, estimating NMSP staffing numbers by district and total, and determining staffing needs for the SID and IB.

Our review of the literature and survey of state patrol agencies confirmed PAM is a widely used and accepted method for determining patrol allocations. The PAM method worked well for determining the NMSP patrol needs. The modified workload method was applicable for the non-patrol units of DPS. Both methods met the requirements of the study.

Prior to this study, NMSP staffing was reviewed in 2007. An interval of six years between studies is acceptable. 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 change sufficiently to justify a full review before five years.

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

On average, NMSP officers spent approximately 13.5 minutes every hour handling reactive tasks and 20 minutes each hour for administrative tasks, leaving 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 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%. 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%).

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. 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. 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.

Certainly, more resources are necessary for NMSP to meet the calls for service workload and for line patrol. 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 reduce 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. ■

### **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.

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