Determining Patrol and Non-Patrol Staffing Needs

Paul Guerin, Ph.D.
Dan Cathey, MPA
Email: malachi@unm.edu
505-277-4257
Institute for Social Research
University of New Mexico

September 25, 2014
International Association of Law Enforcement Planners, Training Conference
Determining Patrol and Non-Patrol Staffing Needs

- What is the number of officers, field supervisors, and command personnel required to provide acceptable levels of patrol and traffic services?
- Estimating staffing needs in two statewide law enforcement agencies.
Evolution of Police Allocation

- Population-Based Rates
- Authorized Strength
- Geographic Location Based
- Comparison to Other States
- Workload/Performance Based Methods
Two New Mexico Agencies

1. **New Mexico State Police**
   - 3 Bureaus: Uniform, Special Investigation, Criminal Investigations
   - 305 sworn personnel in Uniform Bureau

2. **New Mexico Motor Transport Police**
   - 2 Units: Patrol Officers & Transport Inspectors
   - 98 Patrol Officers
NMSP Maps

Uniform Bureau

Special Investigations
NMTP Patrol Districts Map
Selection of Patrol Allocation Method

- Selected Police Allocation Model (PAM)
  - Reviewed Literature and surveyed other agencies
  - Established method & previously used by NMSP
  - Software is free
  - Used by state law enforcement agencies
  - Used to determine patrol operation
  ✓ Level of efficiency is accepted – PAM is not an answer for increasing efficiency.
Method for Calculating Non-Patrol Bureaus

- Designed a workload assessment procedure
  - PAM was not conducive to non-patrol units
  - Modified an uncomplicated procedure used by the NM Judiciary
  - Procedure was familiar to the NM Legislature
  - Data for the procedure was available
Using PAM

- What impacted the data?
  - The estimate is driven by several variables.
    - Number of Other Calls for Service handled by the Agency.*
    - Number of roadway miles.*
    - Size of the area (district) patrolled.*
    - Number & time spent handling self-initiated contacts.*
    - Shift relief factor (avg. number of officers required to handle one shift per day).

  * Significant correlation
Data Sources Used in PAM

- Officer Activity Database
- CAD Calls for Service
- Personnel data
- Road miles and District Area miles from NM Dept. of Transportation

✓ Data was not easily linked – if the data can’t be linked don’t use it.
The IACP suggests allocating patrol resources: 20 minutes of each hour for calls for service, 20 minutes for administrative duties, and 20 minutes for proactive patrol response (IACP 2010).

This precedent was reasonable, uncomplicated, and acceptable to the Legislature.
We produced estimates for each of the 12 NMSP Districts. Total estimate was 439 staff. Represents an increase of 134 above the actual of 305, and 73 above the number of 366 authorized.
Modified Workload Method

- Collected all the work tasks of the SID & IB.
- Listed the avg. amount of time to perform each work task.
- Counted the number of tasks opened during the year.
- Summarized the time needed to perform the work.
- Divided the amount of work by the time available.
## Work & Non-Work Tasks

<table>
<thead>
<tr>
<th>Work Type Categories</th>
<th>Non-Work Type Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquor License Postings</td>
<td>Leave Time</td>
</tr>
<tr>
<td>Premise Inspections</td>
<td>Training</td>
</tr>
<tr>
<td>Seminars Given</td>
<td>Office Activities</td>
</tr>
<tr>
<td>Alcohol Sales Operations</td>
<td>Servicing vehicle</td>
</tr>
<tr>
<td>Serving Subpoenas</td>
<td>Travel</td>
</tr>
<tr>
<td>Criminal Investigations</td>
<td></td>
</tr>
</tbody>
</table>
## Example of Table Showing Staff Needs Calculation

<table>
<thead>
<tr>
<th>Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Job Specific Workload (Weights X Activities)</td>
<td>36,669</td>
</tr>
<tr>
<td>Officer Average Annual Availability</td>
<td>2,080</td>
</tr>
<tr>
<td>Available Time for Work Type Workload</td>
<td>918.8</td>
</tr>
<tr>
<td>Total FTE Officer Resource Predicted Demand</td>
<td>40</td>
</tr>
<tr>
<td>FTE Officer Resource Current Supply</td>
<td>18.5</td>
</tr>
<tr>
<td>Difference</td>
<td>21.5</td>
</tr>
</tbody>
</table>
NM Motor Transport Police Dept.

- Legislature liked the NMSP Study and “commissioned” a similar study of the MTPD.
- PAM was used to estimate Patrol Officers.
- Modified Workload Method used to estimate non-patrol Transport Inspectors and the Border crossings.
Future

- Agencies should consider conducting staffing updates annually and full reviews every five years or when laws, policies, or workloads change sufficiently for a full review.
- Non-patrol units should complete a time study, requiring staff to record all their work activities for a period of time.
- Patrol estimates should use CAD data exclusively.