

# PRINCE GEORGE'S COUNTY POLICE DEPARTMENT

*Staffing Analysis*

*June 12, 2022*

## FIRST INTERIM REPORT

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# PRINCE GEORGE'S COUNTY POLICE DEPARTMENT STAFFING ANALYSIS

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## Introduction

In March, 2022 Alexander Weiss Consulting, LLC of Evanston Illinois was engaged to conduct a staffing analysis for the Prince George's County Police Department (PGCPD).

The Request for Qualification indicated that study should include:

- Evaluating current staffing utilization patterns by season, day of week, hour of day
- Assessing and measuring the effectiveness of current staffing and identifying gaps in service and utilization
- Examining calls for service to understand supply and demand for police services by season, day of week, hour of day
- Evaluating deployment patterns by season, day of week, hour of day
- Assessing current shift schedules/length and how they impact utilization and deployment
- Assess personnel strength for reducing response times
- Assess for the proper sworn and non-sworn proper staffing of the police department
- Assess what jobs could be civilianized to add maximum sworn strength
- Assess for patrol personnel who may be taken out of service on any given day (i.e. special assignment, protests, demonstrations, etc.)
- Evaluating and analyzing the number of officers assigned to patrol vs non-patrol functions (i.e. special units, narcotics, vice, investigations, traffic, tactical, etc.)
- Examining current deployment and workload strategies
- Developing comprehensive strategies to improve efficiency and effectiveness that rely on actual levels of demand for police services and supply of police resources including but not limited to: staff utilization, calls for service, workload, deployment, shift length
- Projecting costs associated with new strategies and developing funding scenarios, including overtime, impact on the Collective Bargaining Agreement

- Assess rotating shifts versus fixed shifts and time of shifts
- Assess personnel strength of each patrol division and divisions outside of patrol

Moreover, the RFQ envisioned that the project would be conducted in three phases:

**Interim report #1:**

This report will provide an analysis and evaluation of the effectiveness of current staffing in the Bureau of Patrol. The Bureau of Patrol accounts for the majority of personnel and is the core service provided by the Prince George's County Police Department. This report should develop comprehensive strategies to improve efficiency and effectiveness based on actual staffing levels and demand for police services. Information from this report should provide recommendations of staff utilization to meet response time goals based on workload and shift length. An algorithm for projecting workforce allocation should be included to allow the department to schedule officers for optimal performance and service. This algorithm should be scalable based on optimal resources available versus existing resource allocation to Patrol in total.

**Interim report #2:**

This report will provide recommendations for non-patrol unit staffing based on current sworn strength, workload and job function. This report should contain recommendations for staffing levels in non-patrol functions of the Prince George's County Police Department to ensure that administrative, investigative and tactical operations can be completed. It should contain recommendations for civilianization of sworn positions in order to allow as many sworn officers as possible to serve the primary function of police patrol for the department. This report should analyze the investigative functions of the department to determine most appropriate staffing levels in these units based on best practices while considering clearance and solvability rates. While considering the optimization of clearance and solvability rates, please develop a prioritization of staffing per investigative function. The vendor should be prepared to redevelop prioritization based on feedback from the Prince George's County Police Department. Staffing for non-patrol personnel should include a comparative analysis of other police departments that are similar in size and structure. An algorithm for projecting workforce allocation should be included to allow the department to schedule officers for optimal performance and service in these non-patrol positions.

**Interim report #3**

This report will include an analysis and evaluation of the use of technology within the Prince George's County Police Department. It should evaluate the efficiency and effectiveness of the department's use of technology and

identify methods for improving performance through expanded use of technology. This should be done through a study of current technology, to include hardware and software that is available and in use by other departments or private sector organizations that will improve the service provided by the Prince George's County Police Department. This report should focus on two categories (1) "quick wins" being defined as low cost and short implementation time and (2) "long term vision" being high capital costs and lengthy implementation.

This report includes our work for the first phase of the project.

## **About PGCPD**

The Prince Georges County Police Department is the primary law enforcement agency for the County, but there is a unique relationship between PGCPD and the many local, municipal governments contained within the County. Prince George's County contains twenty-five self-governing municipalities. Some of those jurisdictions have their own police departments, whereas a few rely solely on PGPD for assistance.<sup>1</sup>

For those cities/towns with their own police departments some of them are basically self-sufficient, in that they dispatch their officers and conduct their own criminal investigations. PGPD will provide assistance when requested, but PGCPD officers do not actively patrol those areas, write reports or monitor crime.

In other areas, the County Office of Homeland Security Public Safety Communications receives 911 calls for service, dispatches municipal officers to the calls, and the PGCPD handles follow-up investigations.

The key autonomous agencies include:

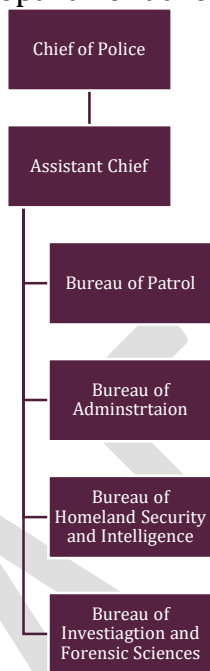
- The City of Bladensburg
- The City of Bowie
- The City of Laurel
- Hyattsville
- The City of Greenbelt
- Mt. Rainier
- Riverdale Park
- The University of Maryland

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<sup>1</sup> <https://www.princegeorgescountymd.gov/4008/Municipal-Police-Department>

In addition, the Maryland State Police provide services on state highways in the county, and the Prince George's County Sheriff responds to a portion of the domestic violence calls in Division 3.

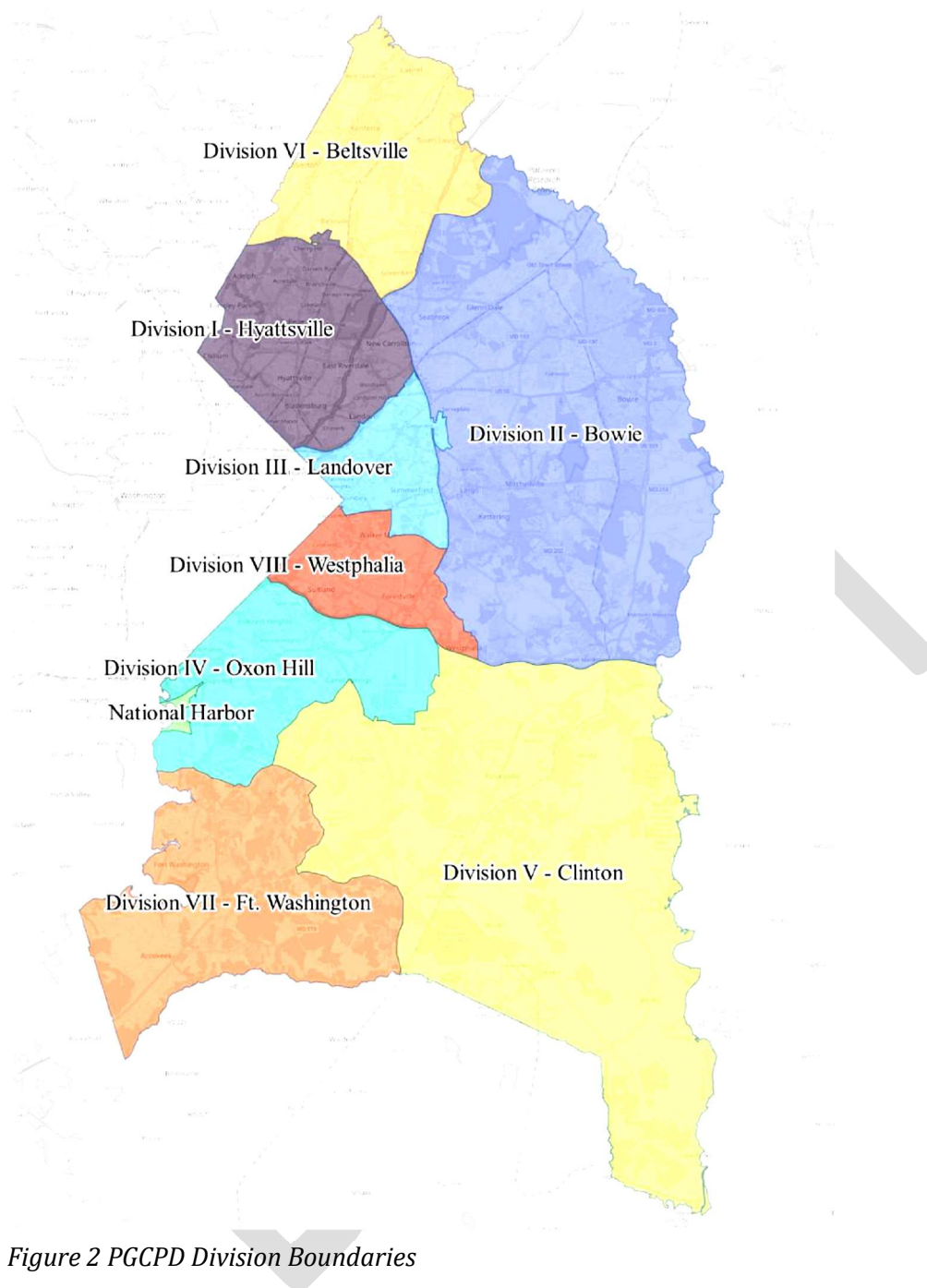
The major components of the department are illustrated in Figure One.



*Figure 1 PGCPD Command Structure*

### **Patrol Operations in PGCPD**

A deputy chief manages the bureau of patrol. Patrol services are delivered through eight police divisions. Figure two illustrates the boundaries of the divisions. Each division is directed by a major, and a captain serves as assistant commander.



*Figure 2 PGCPD Division Boundaries*

Some divisions contain more than one sector. Within each sector there are patrol beats. This is illustrated in Figure three.



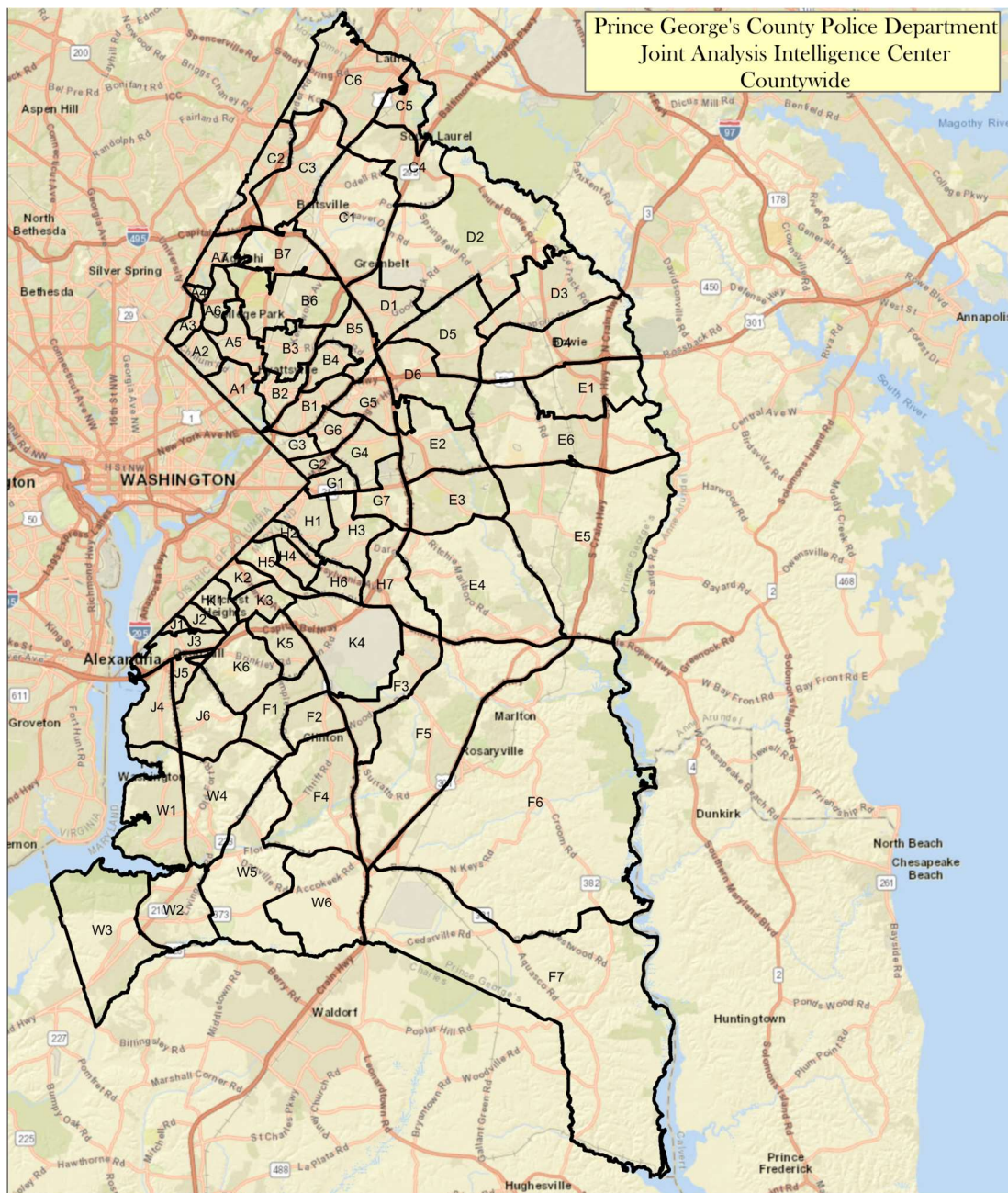


Figure 3 PGCPD Patrol Sectors and Beats

In each division there are five shifts, each consisting of a sergeant and officers. In divisions with one sector, each shift is managed by a lieutenant. In the divisions with two sectors, a lieutenant manages the shift in both sectors.<sup>2</sup>

<sup>2</sup> PGCPD uses the term “shift” to describe a work group, and not a period of time (e.g. 8AM to 4PM). In order to be consistent, we will use the word shift to define a work group and “watch” to describe the time of day.

## **A Workload-based Model for Patrol Deployment**

Our approach to police staffing focuses on officer workload, and how agencies want officers to allocate time between community-generated calls for service, and other activities. An assessment approach reflecting departmental workload can help provide a better and more objective means for determining staffing needs. Workload-based approaches derive staffing indicators from demand for service. What differentiates this approach is the requirement to systematically analyze and determine staffing needs based upon actual workload demand while accounting for service-style preferences and other agency features and characteristics. The workload approach estimates future staffing needs of police departments by modeling the level of current activity. Conducting a workload analysis can assist in determining the need for additional resources or relocating existing resources (by time and location), assessing individual and group performance and productivity, and detecting trends in workload that may illustrate changing activity levels and conditions. Furthermore, a workload analysis can be performed at every level of the police department and for all key functions, although it is more difficult to assess workload for some units than others. The importance of the workload-based approach to staffing is evidenced by it being codified as a standard (16.1.2) by the Commission on Accreditation for Law Enforcement Agencies (2006). The agency allocates personnel to, and distributes them within, all organizational components in accordance with documented workload assessments conducted at least once every 3 years.

Our study will answer these key questions:

- How many patrol units should be on duty during each shift?
- How should they be distributed among the various communities in the city?
- Should one officer or two be assigned to each car? Or, should there be a mix of one-officer and two-officer cars?
- How do patrol officers spend their time when they are not handling calls for service?
- What are the patrol beats for each car?
- Which calls merit response by a patrol car, and which ones can be handled by other means, such as taking a crime report over the telephone, or online?
- How many cars are dispatched to each call?
- What should be the starting times of patrol officers' tour of duty?
- What do patrol officers' schedules look like: days on duty, tour rotation, and so forth.

The workload approach includes six steps:

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

## **Calls for Service in PGC**

Our analysis is based on “community-generated calls for service (CFS).” These calls are defined as those in which someone calls and requests police assistance and a police officer(s) is dispatched. We exclude officer-initiated activity such as traffic stops, and cases in which calls are handled in a way that does not include dispatching an officer.

For this study we examined calls for the period of April 1, 2021 through March 30, 2022. In the first data file offered to us there were about 600,000 records. In this data set there were 275,000 calls that were not dispatched, and among that group were 123,754 “911 hang-up” calls. After some review we determined that the actual number of dispatched calls for service was 253,985.

To have some sense of the order of magnitude of 253, 985 calls consider the following:

- 696 on average per day
- Day Watch (0600-1400) 88,268 Calls, 241 per day. Typical Day watch has about 100 officers working, thus 2.4 calls per officer per Watch
- Evening Watch (1400-2200) 108,839 Calls, 298 per day; thus 3 calls per officer per Watch
- Night Watch (2200-0600) 57,000 Calls, 156 per day; for 90 officers 1.7 calls per officer per Watch

The next figure illustrates the distribution of calls for service by month. As we can observe there is relatively little variation by month.

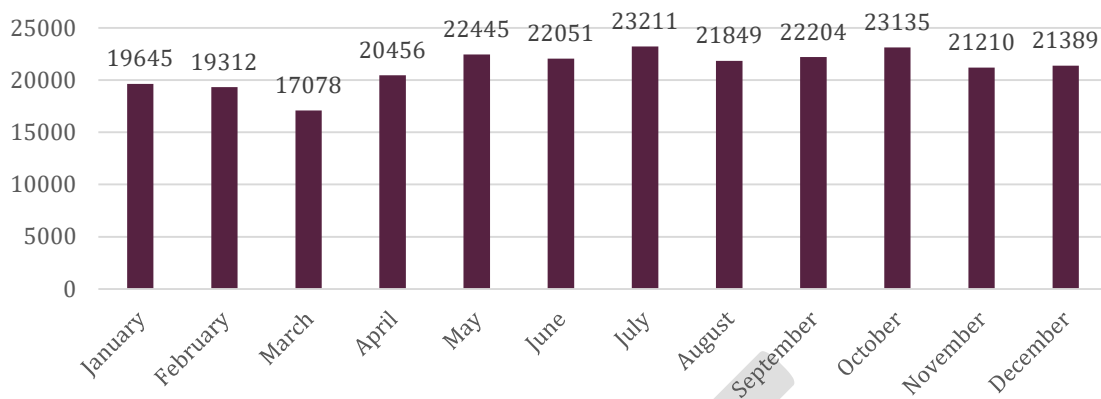


Figure 4 CFS by Month

Figure 5 shows the distribution of calls by day of week. Again, there is very little variation by day of week. This is an important factor in identifying an efficient work schedule.

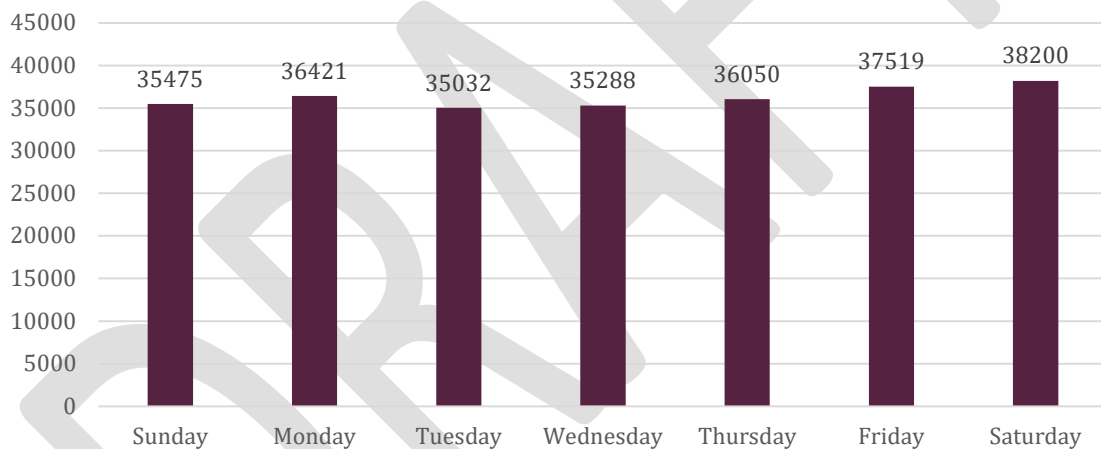


Figure 5 CFS by Day of Week

Finally, we examine the distribution of calls for service by hour of day. This result is consistent with most law enforcement agencies, where peak demand times are in late afternoon. However, in this case the peak demand times start about noon and continues until about 8:00 PM.

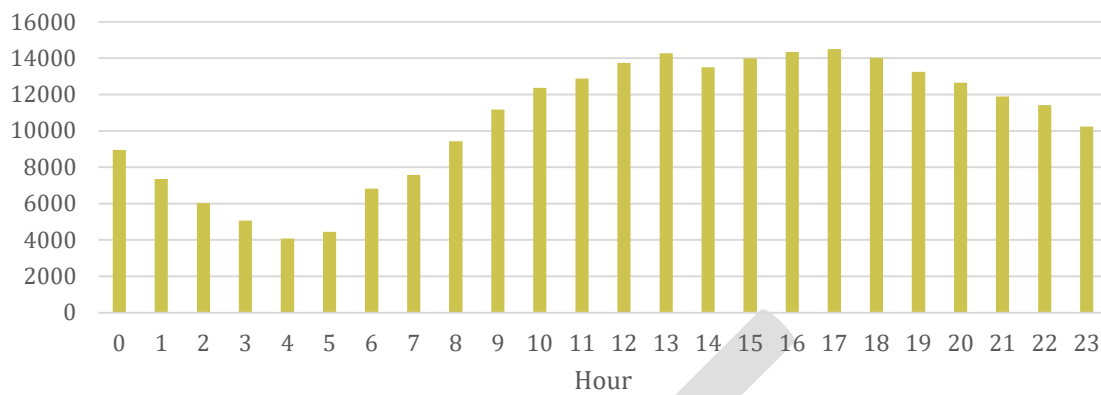


Figure 6 CFS by Hour of Day

It is also instructive to examine the distribution of calls by watch<sup>3</sup>. This is illustrated in Figure 7. We note that the percentage of calls occurring during the evening watch is almost twice as that of the graveyard watch. At present, the number of officers assigned to each watch is nominally the same.

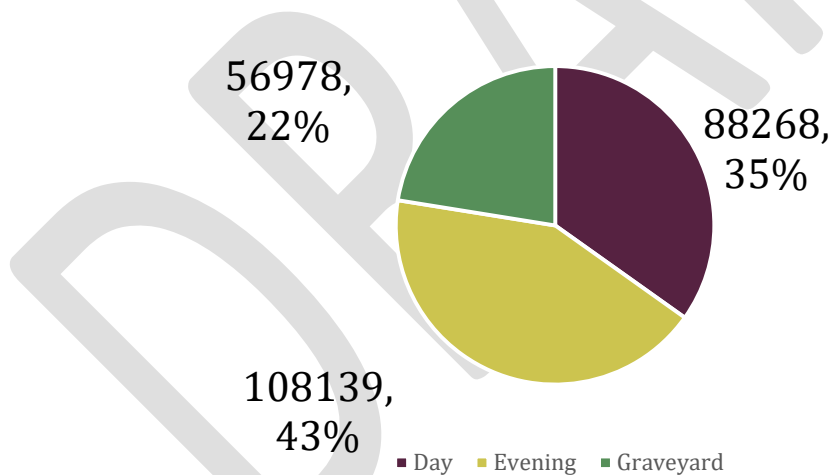
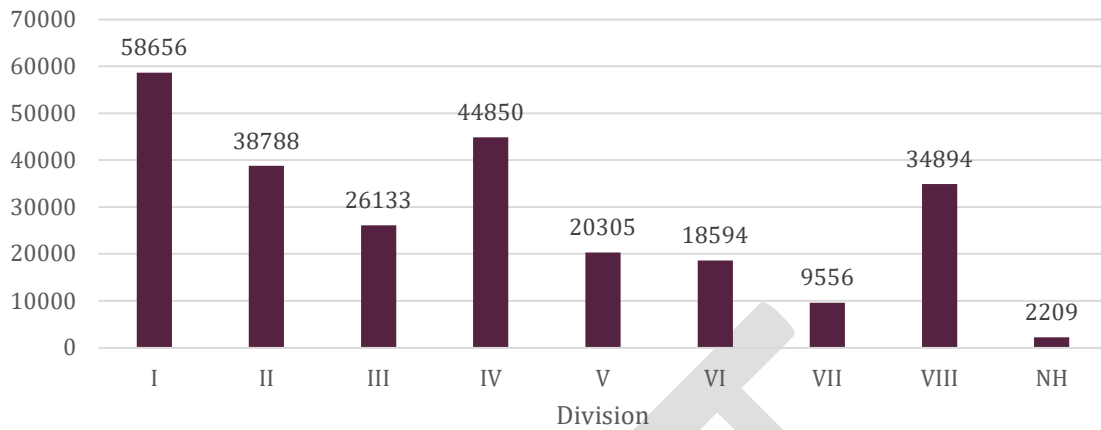


Figure 7 CFS by Watch

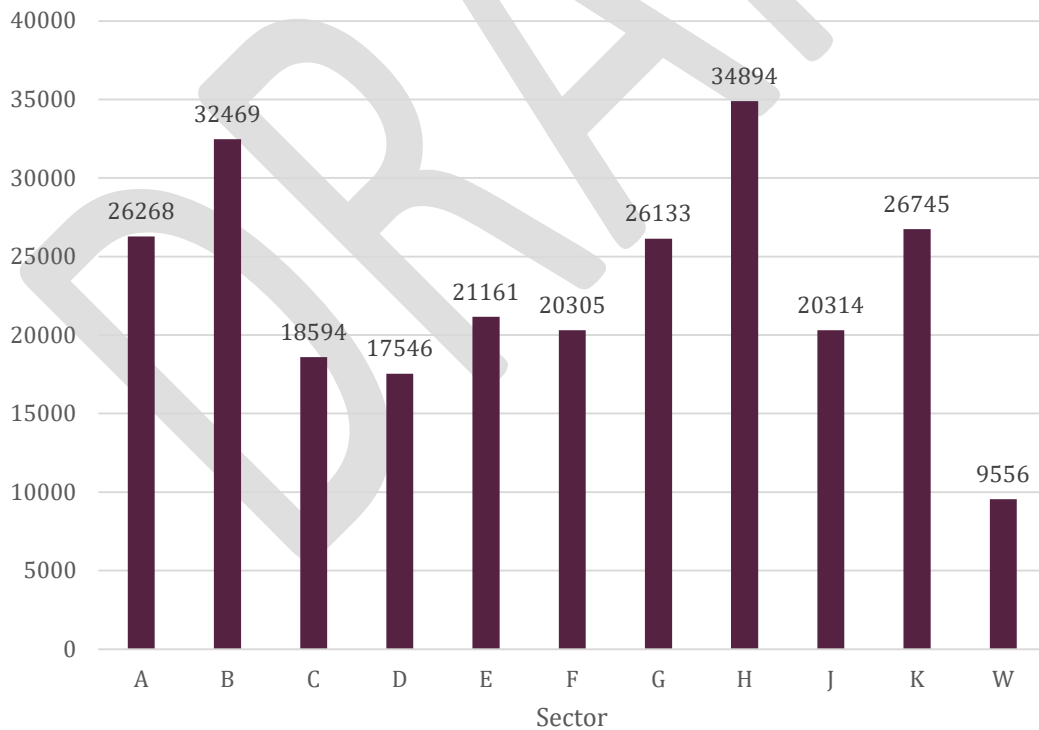
Next, we illustrate the number of calls by division. It is interesting to note the significant variation by division. For example, officers in Division I respond to six times the number of calls as do officers in Division VII. While it is possible to allocate officers proportionately to adjust for these differences, it is more difficult to adjust for the significant challenges in the management of these busier divisions.

<sup>3</sup> Watch Times: Day 0600-1400, Evening, 1400-2200, Graveyard, 2200-0600.

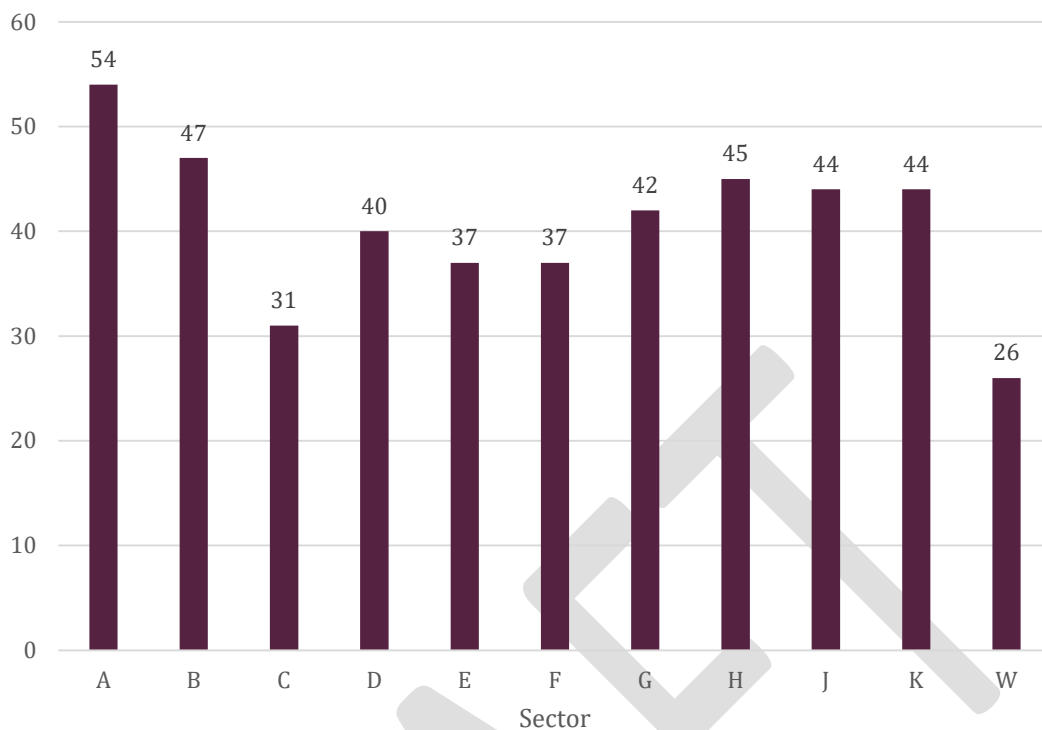


*Figure 8 CFS by Division*

In Figures 9 and 10 we illustrate the number of calls by sector, and the number of officers assigned to the sectors. As we can see, there is a relatively high correspondence between the two measures.



*Figure 9 CFS by Sector*



*Figure 10 Officers Assigned by Sector*

It is important to examine the nature of calls that officers respond to for a number of reasons. First, it's a good indicator of how officers are spending their time. Second, it is a way to identify whether some calls can be handled by alternative means (TRU, on-line reporting, etc.) Finally, examining where these calls are being generated may inform deployment. For example, some areas may have fewer calls for service, but the calls are of a more violent nature.

The following table illustrates the call types by division. There are some things to note in this table:

- Calls described as "combined" indicate that police and fire or EMS were dispatched.
- There are a number of categories with very few calls recorded
- There is some ambiguity about the classifications. For example, there are "domestic" calls and "family disputes"
- There are a significant number of calls that could be more effectively managed such as alarms and found items.

| Incident Type                             | I    | II   | III  | IV   | V    | VI   | VII | VIII | NH  | Total |
|-------------------------------------------|------|------|------|------|------|------|-----|------|-----|-------|
| 3SI ALERT                                 | 3    | 1    | 2    | 3    | 3    | 4    |     | 3    |     | 19    |
| 911 DISCONNECT                            | 419  | 482  | 216  | 325  | 186  | 181  | 69  | 143  | 49  | 2070  |
| ABDUCTION                                 | 16   | 7    | 7    | 4    | 5    | 3    | 1   | 6    |     | 49    |
| ABDUCTION COMBINED                        | 1    |      |      | 1    |      |      | 1   |      |     | 3     |
| ABDUCTION REPORT                          | 2    |      |      | 1    |      | 1    | 1   | 2    |     | 7     |
| ABDUCTION, HOSTAGE OR ATTEMPTED ABDUCTION | 4    |      | 5    | 1    |      | 1    |     | 4    | 1   | 16    |
| ABDUCTION, HOSTAGE, OR ATTEMPT W/ WEAPON  | 2    | 2    |      | 1    |      | 1    |     | 1    |     | 7     |
| ACCIDENT                                  | 4033 | 2030 | 1515 | 2420 | 1065 | 1136 | 543 | 1348 | 164 | 14254 |
| ACTIVE ASSAILANT / SHOOTER                |      |      |      |      |      |      |     | 1    |     | 1     |
| ADDED INFORMATION                         | 312  | 205  | 119  | 213  | 84   | 123  | 41  | 181  | 15  | 1293  |
| ALS COMBINED                              | 41   | 23   | 23   | 43   | 18   | 8    | 9   | 27   | 1   | 193   |
| ANIMAL COMPLAINT                          | 156  | 163  | 69   | 140  | 110  | 60   | 69  | 102  | 1   | 870   |
| ANIMAL COMPLAINT COMBINED                 | 39   | 11   | 16   | 18   | 12   | 14   | 2   | 26   | 1   | 139   |
| ARMED PERSON                              | 903  | 363  | 384  | 614  | 190  | 169  | 97  | 686  | 36  | 3442  |
| ARMED PERSON REPORT                       | 16   | 6    | 12   | 14   | 7    | 8    | 4   | 10   | 1   | 78    |
| ASSAULT                                   | 348  | 138  | 106  | 158  | 68   | 69   | 26  | 168  | 23  | 1104  |
| ASSAULT COMBINED                          | 305  | 114  | 104  | 183  | 67   | 62   | 14  | 131  | 17  | 997   |
| ASSAULT LARGE/SMALL GROUP WITH WEAPON     |      | 1    | 2    |      |      | 1    |     | 1    | 1   | 6     |
| ASSAULT REPORT                            | 119  | 80   | 40   | 68   | 51   | 38   | 15  | 41   | 5   | 457   |
| ASSIST                                    | 318  | 163  | 111  | 166  | 70   | 127  | 16  | 103  | 11  | 1085  |
| ASSIST FIRE EMS                           | 383  | 219  | 178  | 310  | 111  | 128  | 52  | 250  | 21  | 1652  |
| ATT SUICIDE COMBINED                      | 406  | 335  | 168  | 310  | 171  | 178  | 76  | 259  | 18  | 1921  |
| BARKING DOOG SUSPICIOUS ACTIVITY          | 1    | 1    |      |      | 2    |      |     |      |     | 4     |
| BARRICADE COMBINED                        |      | 1    |      |      |      |      | 1   | 1    |     | 3     |
| BLS COMBINED                              | 34   | 20   | 21   | 20   | 8    | 16   | 5   | 21   | 4   | 149   |
| BREAK IN IN PROGRESS                      | 368  | 371  | 208  | 276  | 203  | 109  | 107 | 309  | 2   | 1953  |
| BREAK IN REPORT                           | 237  | 165  | 126  | 195  | 102  | 60   | 42  | 223  | 3   | 1153  |
| CARJACKING REPORT                         | 9    | 3    | 3    | 8    | 1    | 1    |     | 6    |     | 31    |
| CARJACKING REPORT COMBINED                | 5    |      | 1    | 2    | 1    | 1    |     | 1    |     | 11    |
| CASINO INVESTIGATION                      |      |      |      |      |      |      |     |      | 3   | 3     |
| CDS COMPLAINT                             | 274  | 170  | 219  | 259  | 51   | 129  | 26  | 325  | 2   | 1455  |
| CHECK OCCUPANCY                           |      |      |      |      |      |      |     | 1    |     | 1     |
| CHECK WELFARE                             | 2241 | 1807 | 1031 | 2011 | 918  | 799  | 492 | 1344 | 63  | 10706 |
| CHECK WELFARE COMBINED                    | 1609 | 943  | 858  | 1501 | 470  | 403  | 232 | 957  | 70  | 7043  |
| CHECK WELFARE MENTAL                      | 156  | 170  | 79   | 171  | 74   | 62   | 40  | 116  | 7   | 875   |
| CHECK WELFARE VIOLEN                      | 74   | 99   | 70   | 81   | 45   | 29   | 25  | 62   | 1   | 486   |
| CHILD CUSTODY                             | 60   | 68   | 83   | 74   | 47   | 23   | 9   | 130  |     | 494   |
| CIT ROBBERY COMBINED                      | 25   | 7    | 2    | 7    |      | 1    | 1   | 12   |     | 55    |



|                            | I    | II   | III  | IV   | V    | VI   | VII | VIII | NH  | Total |
|----------------------------|------|------|------|------|------|------|-----|------|-----|-------|
| CIT ROBBERY REPORT         | 27   | 5    | 4    | 10   | 3    | 4    | 1   | 4    |     | 58    |
| CPR COMBINED               | 46   | 41   | 29   | 45   | 37   | 17   | 20  | 23   | 2   | 260   |
| CROSSING GUARD ASSIGNMENT  | 1052 | 443  | 347  | 74   | 145  | 108  | 1   | 237  |     | 2407  |
| CUTTING                    | 10   | 6    | 5    | 10   | 9    | 3    |     | 5    |     | 48    |
| CUTTING COMBINED           | 76   | 20   | 25   | 37   | 17   | 15   | 5   | 48   | 1   | 244   |
| CVA ABUSE                  | 54   | 28   | 13   | 36   | 18   | 15   | 6   | 25   | 2   | 197   |
| CVA ABUSE COMBINED         | 1    | 4    | 4    | 1    | 1    | 2    |     | 3    |     | 16    |
| CVA ABUSE REPORT           | 22   | 27   | 7    | 10   | 14   | 17   | 3   | 10   | 1   | 111   |
| CW18                       | 2    | 1    |      | 2    | 1    |      |     | 5    | 1   | 12    |
| DEATH REPORT               | 158  | 324  | 95   | 169  | 279  | 51   | 78  | 124  |     | 1278  |
| DEATH REPORT COMBINED      | 9    | 11   | 5    | 19   | 14   | 8    | 3   | 10   |     | 79    |
| DEPT ACCIDENT FD           | 5    | 7    | 1    | 1    | 1    | 3    | 3   | 5    |     | 26    |
| DEPT ACCIDENT PD           | 9    | 4    | 1    | 5    | 3    | 4    | 1   | 4    | 1   | 32    |
| DEPT ACCIDENT FD COMBINED  | 28   | 28   | 7    | 22   | 11   | 16   | 14  | 11   |     | 137   |
| DEPT ACCIDENT PD COMBINED  | 2    | 6    | 1    | 1    | 2    | 1    | 3   | 2    |     | 18    |
| DEVICE/PKG/THREAT COMBINED | 21   | 18   | 14   | 7    | 14   | 7    | 3   | 9    | 2   | 95    |
| DISORDERLY                 | 8202 | 3628 | 3220 | 5882 | 1695 | 2068 | 610 | 4385 | 393 | 30083 |
| DISPUTE W/ WEAPONS         | 114  | 69   | 65   | 101  | 39   | 27   | 31  | 113  |     | 559   |
| DOA COMBINED               | 20   | 13   | 12   | 18   | 15   | 4    | 9   | 9    |     | 100   |
| DOMESTIC                   | 3475 | 2012 | 1550 | 3753 | 951  | 1244 | 434 | 2658 | 83  | 16160 |
| DOMESTIC COMBINED          | 171  | 85   | 91   | 184  | 46   | 53   | 22  | 150  | 1   | 803   |
| DOMESTIC STANDBY           | 198  | 171  | 165  | 302  | 104  | 91   | 52  | 306  | 5   | 1394  |
| DOMESTIC W/ WEAPON         | 278  | 143  | 140  | 324  | 90   | 81   | 34  | 257  | 3   | 1350  |
| DRAG RACERS                | 24   | 26   | 26   | 22   | 39   | 40   | 5   | 20   | 1   | 203   |
| DROWNING                   | 1    |      |      |      |      |      |     |      |     | 1     |
| DROWNING COMBINED          |      | 2    |      |      |      | 1    |     |      |     | 3     |
| DWI DRIVER                 | 109  | 49   | 25   | 43   | 28   | 34   | 41  | 24   | 4   | 357   |
| ESCAPE                     |      |      |      |      |      |      |     | 1    |     | 1     |
| EVICION                    | 26   | 7    | 5    | 9    | 1    | 12   |     | 9    |     | 69    |
| EXPLOSION COMBINED         | 3    | 4    | 2    | 3    | 3    | 1    | 3   | 1    |     | 20    |
| EXPLOSIVE DEV SIG 44       | 2    | 4    |      | 1    | 2    | 1    | 1   | 2    |     | 13    |
| FALRMAC                    | 1    | 3    |      | 1    | 1    | 1    |     | 1    |     | 8     |
| FALRMC                     |      | 3    | 3    | 1    | 1    |      | 3   |      |     | 11    |
| FAMILY DISPUTE             | 1286 | 1234 | 932  | 1457 | 645  | 419  | 349 | 1249 | 10  | 7581  |
| FIGHT                      | 577  | 253  | 229  | 436  | 111  | 185  | 37  | 342  | 31  | 2201  |
| FIGHT COMBINED             | 70   | 37   | 31   | 65   | 17   | 22   | 8   | 45   | 8   | 303   |
| FOUND                      | 561  | 292  | 246  | 425  | 178  | 243  | 78  | 366  | 25  | 2414  |
| FRAUD                      | 688  | 851  | 296  | 554  | 392  | 404  | 203 | 421  | 25  | 3834  |

|                                           | I    | II  | III | IV   | V   | VI  | VII | VIII | NH | Total |
|-------------------------------------------|------|-----|-----|------|-----|-----|-----|------|----|-------|
| GAMBLING COMPLAINT                        |      |     | 1   | 1    | 1   |     |     | 1    |    | 4     |
| GUNSHOTS                                  | 348  | 323 | 245 | 474  | 235 | 123 | 112 | 443  | 3  | 2306  |
| HATE CRIME                                | 1    |     |     | 1    |     |     |     |      |    | 2     |
| HELP FOR FF EMS                           | 3    | 2   | 3   | 2    | 2   | 3   | 1   | 1    |    | 17    |
| HIGHWAY ACCIDENT                          | 1    |     | 1   | 1    | 1   |     | 3   | 1    |    | 8     |
| HIGHWAY ACCIDENT COMBINED                 | 21   | 23  | 13  | 19   | 12  | 7   | 14  | 7    | 1  | 117   |
| HIT AND RUN                               | 2197 | 939 | 796 | 1496 | 466 | 586 | 190 | 1155 | 71 | 7896  |
| HIT AND RUN W INJURY                      | 1    |     | 3   | 3    |     |     | 1   | 3    |    | 11    |
| HIT AND RUN W/INJURY COMBINED             | 78   | 39  | 49  | 76   | 22  | 16  | 7   | 76   | 3  | 366   |
| HOLD UP ALARM                             | 198  | 179 | 106 | 207  | 107 | 73  | 23  | 176  | 6  | 1075  |
| IMPOUND                                   | 2    | 1   |     | 3    | 1   |     |     | 1    |    | 8     |
| INDUSTRIAL ACCIDENT                       | 3    | 2   |     |      |     |     |     |      |    | 5     |
| INDUSTRIAL ACCIDENT COMBINED              |      | 2   |     | 1    | 2   |     |     |      |    | 5     |
| INJURED PERSON                            | 37   | 20  | 20  | 43   | 15  | 8   | 7   | 15   | 1  | 166   |
| JUVENILE COMPLAINT                        | 5    | 1   | 3   | 2    | 1   | 7   |     | 2    |    | 21    |
| KIDNAPPING                                | 6    |     | 1   | 2    |     | 3   |     | 2    |    | 14    |
| LOCK OUT                                  | 39   | 24  | 20  | 38   | 11  | 8   | 4   | 32   | 10 | 186   |
| LOCK OUT IN                               | 30   | 16  | 7   | 20   | 5   | 8   | 1   | 19   | 4  | 110   |
| LOCK OUT/IN COMBINED                      | 84   | 74  | 33  | 67   | 46  | 42  | 11  | 58   | 9  | 424   |
| LOITERING COMPLAINT                       | 35   | 13  | 17  | 40   | 6   | 17  | 1   | 26   | 1  | 156   |
| LOST PROPERTY                             | 495  | 365 | 189 | 331  | 175 | 222 | 73  | 240  | 36 | 2126  |
| LOUD MUSIC COMPLAINT                      | 1219 | 660 | 390 | 327  | 282 | 424 | 152 | 243  | 15 | 3712  |
| MISC CALLS                                | 55   | 36  | 49  | 24   | 32  | 20  | 5   | 37   |    | 258   |
| MISC POLICE INCIDENT                      | 478  | 346 | 171 | 328  | 141 | 136 | 67  | 238  | 26 | 1931  |
| MISSING PERSON                            | 600  | 489 | 282 | 408  | 225 | 207 | 105 | 380  | 13 | 2709  |
| MOTORCYCLE ACCIDENT COMBINED              | 40   | 33  | 12  | 35   | 20  | 24  | 9   | 19   | 1  | 193   |
| MOTOROCYCLE ACCIDENT                      |      | 4   | 1   | 2    | 3   | 2   |     | 2    |    | 14    |
| NATIONAL HARBOR                           |      |     |     |      |     |     | 1   |      |    | 1     |
| NEIGHBOR COMPLAINT                        | 46   | 65  | 29  | 47   | 28  | 17  | 16  | 53   |    | 301   |
| NOISE COMPLAINT                           | 411  | 178 | 149 | 212  | 66  | 200 | 24  | 151  | 17 | 1408  |
| NON-COMPLIANCE                            | 1    |     |     | 3    |     |     |     | 1    |    | 5     |
| NOTIFICATION                              | 178  | 147 | 76  | 132  | 67  | 69  | 37  | 105  | 3  | 814   |
| OFFICER NEEDS ASSISTANCE POSSIBLE WEAPONS |      | 1   |     |      |     |     |     |      |    | 1     |
| OPEN DOOR WINDOW                          | 30   | 47  | 26  | 34   | 15  | 6   | 9   | 26   | 1  | 194   |
| OVERDOSE                                  | 9    | 1   | 1   |      | 2   |     | 1   | 2    |    | 16    |
| OVERDOSE ALS COMBINED                     | 153  | 62  | 92  | 106  | 40  | 42  | 23  | 81   | 5  | 604   |
| OVERDOSE BLS COMBINED                     | 84   | 38  | 30  | 44   | 22  | 20  | 11  | 44   | 3  | 296   |
| OVERDOSE COMBINED                         | 8    | 11  | 6   | 11   | 4   | 5   | 4   | 12   |    | 61    |

|                                           | I    | II   | III  | IV   | V    | VI  | VII  | VIII | NH | Total |
|-------------------------------------------|------|------|------|------|------|-----|------|------|----|-------|
| PAPER SERVICE                             | 108  | 147  | 49   | 117  | 31   | 54  | 36   | 104  |    | 646   |
| PARENTAL / CUSTODIAL ABDUCTION            | 9    | 8    | 5    | 7    | 2    | 4   | 1    | 5    |    | 41    |
| PARENTAL OR CUSTODIAL ABDUCTION W/ WEAPON |      | 1    |      |      | 1    |     |      | 1    |    | 3     |
| PARK CALLOUT                              |      | 1    |      |      |      |     |      |      |    | 1     |
| PARKING ENFORCEMENT                       | 37   | 17   | 13   | 16   | 5    | 16  | 2    | 11   |    | 117   |
| PART TIME                                 | 22   | 35   | 13   | 11   | 4    | 7   |      | 15   | 1  | 108   |
| PARTY COMPLAINT                           | 493  | 340  | 101  | 163  | 173  | 195 | 109  | 94   | 6  | 1674  |
| PAST ABDUCTION                            | 8    | 6    | 3    | 2    | 2    | 2   | 1    | 4    |    | 28    |
| PAST SUSPICIOUS PERSON                    | 67   | 43   | 15   | 34   | 22   | 16  | 14   | 25   |    | 236   |
| PAST TRESPASSING / UNWANTED               | 5    | 3    | 1    | 5    | 2    | 1   | 2    | 2    |    | 21    |
| PEDESTRIAN STRUCK                         | 23   | 9    | 11   | 6    | 6    | 8   | 3    | 6    | 3  | 75    |
| PEDESTRIAN STRUCK COMBINED                | 131  | 46   | 33   | 76   | 27   | 25  | 8    | 52   | 2  | 400   |
| PREMISE CHECK                             | 1115 | 84   | 69   | 66   | 51   | 58  | 32   | 473  | 4  | 1952  |
| PROPERTY ALARM                            | 18   | 19   | 13   | 23   | 10   | 4   | 4    | 10   | 1  | 102   |
| PROPERTY ALARM COMMERCIAL                 | 1212 | 1142 | 844  | 987  | 718  | 732 | 155  | 811  | 24 | 6625  |
| PROPERTY DAMAGE                           | 564  | 301  | 210  | 419  | 147  | 147 | 56   | 290  | 28 | 2162  |
| REPORTED CARJACKING                       | 91   | 32   | 67   | 110  | 11   | 14  | 5    | 109  | 2  | 441   |
| REPORTED CIT ROBBERY                      | 201  | 27   | 82   | 89   | 10   | 22  | 3    | 68   | 3  | 505   |
| REPORTED T/A ROBBERY                      | 33   | 8    | 20   | 35   | 18   | 12  | 1    | 24   |    | 151   |
| RESIDENTIAL ALARM                         | 1012 | 3952 | 1045 | 2080 | 2441 | 630 | 1480 | 1602 | 50 | 14292 |
| RESIDENTIAL PANIC ALARM                   | 42   | 185  | 63   | 102  | 136  | 28  | 76   | 101  | 6  | 739   |
| ROBBERY                                   | 27   | 2    | 13   | 19   | 2    | 3   | 2    | 11   | 3  | 82    |
| ROBBERY COMBINED                          | 5    | 2    | 2    | 4    |      |     |      | 1    |    | 14    |
| ROBBERY REPORT                            | 18   | 2    | 1    | 2    | 1    | 4   |      | 7    |    | 35    |
| SCHOOL ALARM                              | 144  | 63   | 40   | 66   | 35   | 30  | 24   | 38   |    | 440   |
| SCHOOL RESOURCE                           | 15   | 5    | 5    | 21   | 2    | 4   | 3    | 3    |    | 58    |
| SEXUAL ASALT REPORT                       | 48   | 46   | 11   | 30   | 24   | 11  | 6    | 26   | 2  | 204   |
| SEXUAL ASSAULT                            | 18   | 16   | 8    | 9    | 5    | 5   | 1    | 5    | 2  | 69    |
| SEXUAL ASSAULT COMBINED                   | 47   | 14   | 4    | 17   | 6    | 10  | 3    | 15   | 3  | 119   |
| SHERIFF ARMED PERSON                      |      | 1    |      |      |      |     |      |      |    | 1     |
| SHERIFF DISORDERLY                        |      | 2    | 3    |      |      |     |      | 4    |    | 9     |
| SHERIFF DOMESTIC                          | 1    |      | 6    | 1    |      |     |      | 10   |    | 18    |
| SHERIFF OTHER                             | 1    | 3    |      |      |      |     |      |      |    | 4     |
| SHERIFF SUS PERSON                        |      |      |      |      |      |     |      | 1    |    | 1     |
| SHERIFF TRAFFIC STOP                      |      |      | 2    |      | 1    |     |      | 2    |    | 5     |
| SHOOTING                                  | 68   | 36   | 37   | 73   | 33   | 16  | 17   | 77   | 3  | 360   |
| SHOOTING COMBINED                         | 110  | 60   | 87   | 131  | 31   | 32  | 8    | 131  | 2  | 592   |
| SHOPLIFTING                               | 53   | 23   | 20   | 68   | 15   | 13  | 3    | 26   | 3  | 224   |

|                              | I    | II   | III | IV   | V   | VI  | VII | VIII | NH  | Total |
|------------------------------|------|------|-----|------|-----|-----|-----|------|-----|-------|
| SIGNAL 100                   | 6    | 4    | 4   | 1    | 2   | 4   | 1   | 6    | 1   | 29    |
| SIGNAL 100 SERVICE           | 23   | 22   | 14  | 17   | 9   | 7   | 4   | 24   |     | 120   |
| SIGNAL 13                    | 5    | 5    | 2   | 3    | 1   | 5   | 1   | 5    |     | 27    |
| SIGNAL 13 COMBINED           | 3    | 2    | 2   | 3    | 1   | 1   |     | 3    |     | 15    |
| STADIUM EVENT                |      |      | 12  |      |     |     |     |      |     | 12    |
| STALKING                     | 16   | 21   | 5   | 15   | 11  | 5   | 2   | 11   |     | 86    |
| STALKING REPORT              | 1    | 2    | 2   | 1    | 2   | 1   | 1   | 1    |     | 11    |
| STOLEN VEH                   | 1506 | 850  | 776 | 1528 | 362 | 565 | 124 | 1218 | 52  | 6981  |
| SUBJECT STOP                 | 12   | 4    | 6   | 8    | 1   | 3   | 1   | 7    | 3   | 45    |
| SUICIDE                      | 44   | 31   | 29  | 25   | 24  | 11  | 9   | 18   | 1   | 192   |
| SUSPICIOUS AUTO              | 801  | 626  | 472 | 683  | 388 | 364 | 187 | 536  | 14  | 4071  |
| SUSPICIOUS OCC AUTO          | 897  | 1027 | 445 | 836  | 564 | 334 | 326 | 530  | 27  | 4986  |
| SUSPICIOUS PERSON            | 1632 | 1033 | 709 | 1188 | 504 | 438 | 218 | 881  | 47  | 6650  |
| T - Traffic Stop             | 3    | 12   | 9   | 9    | 2   |     |     | 7    |     | 42    |
| T/A ROBBERY COMBINED         |      |      |     |      |     | 1   |     |      |     | 1     |
| T/A ROBBERY REPORT           |      |      |     | 1    | 1   |     |     | 1    |     | 3     |
| TACKUP                       | 31   | 28   | 11  | 16   | 12  | 12  | 1   | 23   |     | 134   |
| TAMPERING                    | 54   | 33   | 30  | 26   | 3   | 11  | 5   | 24   | 5   | 191   |
| TELEPHONE COMPLAINT          | 17   | 20   | 12  | 9    | 10  | 8   | 5   | 10   | 2   | 93    |
| TEXT REQUEST FOR EMER SERV   | 6    | 2    |     | 5    | 2   | 2   | 1   | 2    |     | 20    |
| THEFT FROM AUTO              | 1909 | 919  | 677 | 1049 | 447 | 506 | 124 | 983  | 64  | 6678  |
| THEFT FROM AUTO J O          | 210  | 73   | 66  | 115  | 62  | 54  | 13  | 90   | 7   | 690   |
| THEFT J O                    | 761  | 276  | 311 | 603  | 223 | 158 | 61  | 492  | 33  | 2918  |
| THEFT REPORT                 | 1169 | 723  | 472 | 854  | 433 | 395 | 179 | 705  | 99  | 5029  |
| THREATS COMPLAINT            | 393  | 279  | 137 | 230  | 113 | 140 | 46  | 188  | 12  | 1538  |
| TRAFFIC ASSIGNMENT           | 81   | 34   | 35  | 6    | 23  | 3   |     | 4    |     | 186   |
| TRAFFIC COMPLAINT            | 1381 | 911  | 627 | 822  | 484 | 557 | 336 | 492  | 47  | 5657  |
| TRAFFIC HAZARD               | 141  | 136  | 62  | 133  | 52  | 79  | 73  | 70   | 14  | 760   |
| TRAFFIC PURSUIT              | 2    |      |     | 3    |     |     |     |      |     | 5     |
| TRAIN EMERGENCY COMBINED     | 1    |      |     |      | 1   |     |     |      |     | 2     |
| TRANSFER TO BOWIE CITY       |      | 4    |     |      |     |     |     |      |     | 4     |
| TRANSFER TO HYATTSVILLE CITY | 1    |      |     |      |     |     |     |      |     | 1     |
| TRANSFER TO LCP              |      |      |     |      |     | 2   |     |      |     | 2     |
| TRANSFER TO RIVERDALE PARK   | 2    |      |     |      |     |     |     |      |     | 2     |
| TRANSPORT                    | 5    | 41   |     |      | 3   | 1   | 1   |      |     | 51    |
| TRASH DUMPING COMPL          | 33   | 30   | 18  | 29   | 20  | 8   | 12  | 32   |     | 182   |
| TRESPASSING COMPL            | 662  | 336  | 320 | 509  | 164 | 137 | 69  | 409  | 149 | 2755  |
| UNKNOWN TROUBLE              | 1774 | 871  | 699 | 1296 | 407 | 499 | 221 | 950  | 74  | 6791  |

|                           | I     | II    | III   | IV    | V     | VI    | VII  | VIII  | NH   | Total  |
|---------------------------|-------|-------|-------|-------|-------|-------|------|-------|------|--------|
| VANDALISM                 | 976   | 540   | 473   | 812   | 274   | 297   | 106  | 783   | 13   | 4274   |
| VEHICLE ACCIDENT          | 32    | 8     | 11    | 16    | 9     | 8     | 3    | 6     |      | 93     |
| VEHICLE ACCIDENT COMBINED | 1108  | 965   | 565   | 994   | 555   | 406   | 366  | 625   | 47   | 5631   |
| VEHICLE ALARM             | 36    | 20    | 4     | 20    | 7     | 18    | 2    | 12    | 2    | 121    |
| WARRANT INVEST            | 1     | 1     |       | 2     | 1     | 1     |      | 3     |      | 9      |
| WARRANT SERVICE           | 22    | 44    | 22    | 24    | 30    | 5     | 11   | 40    |      | 198    |
| WATER RESCUE COMBINED     | 1     |       |       |       |       |       |      |       |      | 1      |
| WIRES DOWN                | 5     |       | 1     | 1     |       | 1     | 1    | 1     |      | 10     |
| WIRES DOWN COMBINED       | 4     | 6     | 2     | 1     | 4     | 2     | 2    | 1     |      | 22     |
| Total                     | 58656 | 38788 | 26133 | 44850 | 20305 | 18594 | 9556 | 34894 | 2209 | 253985 |

*Table 1 CFS Type by Division*

Like most agencies, PGCPD classifies calls by priority-with the highest priority assigned to life threatening situations. Call classification, however, is somewhat problematic. The County Public Safety Communications Center that dispatches for the police department has a policy that describes the call prioritization scheme. The definitions and objective dispatch times are defined below:

- Priority E calls involve an immediate threat to life, a violent act in progress or just occurred and there is likelihood that the suspects could be apprehended 2 minutes
- Priority 1 calls involve a potential threat to property or other crimes against property that just occurred, and the suspects are still in the area of the scene. 5 Minutes
- Priority 2 calls involve incidents where a delay in police response is not likely to result in further injury, property loss, and the suspects are not in the area of the scene. 30 Minutes
- Priority 3 calls involve incidents where a delay in police response is not likely to adversely affect an investigation, no injuries have been reported, and the suspects are not in the area of the scene. 30 Minutes
- Priority 4 calls are self-initiated calls noting activity of a police officer or calls noting a transfer of a 9-1-1 call to another jurisdiction.

The police department does not utilize this scheme. Rather, they have “priority calls” and “non-priority” calls. The priority calls include all ‘E’ calls and a small subset of the communication center priority one calls. This difference is significant. In the communications database during the study year there were

58,000 type E or priority one calls. By contrast, there about 15,000 priority calls using the police department definition.

Table 2 shows the number of priority (PGCPD definition) by division.

| Division | Priority Calls |
|----------|----------------|
| 1        | 3757           |
| 2        | 2113           |
| 3        | 1654           |
| 4        | 2780           |
| 5        | 1126           |
| 6        | 1086           |
| 7        | 501            |
| 8        | 2329           |
| NH       | 131            |

*Table 2 Priority Calls by Division*

We next examine how the PGCPD responds to calls for service, particularly Priority calls. There are three components of police response time, illustrated in Figure 11. The first is the time from when a call is received until an officer(s) is dispatched. There are two parts for this: the process time from when a call is received until it is entered in CAD system, and the queue time from when a call is entered in the CAD system until it is dispatched. Because the PGCPD cannot disaggregate the process time from the queue time, we consider only the combined time in our analyses below. The second measure we use is from dispatch to arrival of the first officer on scene, or the travel time. The third measure is the “on scene” time to clear, that is, the time from when the first officer arrives until the last officer clears the scene. For the purposes of defining officer workload and required staffing, we define the total call time as

travel time plus the on-scene time, represented by the second and third elements in the figure below.



Figure 11 Response Time Components

Table 3 shows average response time data for the agency. We should note that when one considers *all calls* the department is able to dispatch a unit in around seven minutes. However, for *priority calls* a unit is dispatched in a little under three minutes. A significant issue for PGCPD response performance is travel time-the time from dispatch to arrival. Even for priority calls travel times, on average, exceed eight minutes. This occurs, in part, as a result of large geographic commands, and areas of the county with highly congested roadways.

|                              | All Calls | Priority |
|------------------------------|-----------|----------|
| <b>Created to Dispatched</b> | 0:07:10   | 0:02:54  |
| <b>Dispatched to Arrival</b> | 0:11:31   | 0:08:11  |
| <b>Arrival to Close</b>      | 0:14:51   | 0:12:31  |
| <b>Dispatch to Closed</b>    | 0:35:39   | 0:50:23  |

Table 3 Response Time Data: County-Wide

Table 4 illustrates average response time data by division for priority calls. Note that in all of the divisions, units are, on average, dispatched in three minutes or less, but that travel times remain relatively high.

| <b>Division</b> | <b>Created to Dispatched</b> | <b>Dispatch to Arrival</b> | <b>Dispatch to Close</b> | <b>Arrival to Closed</b> |
|-----------------|------------------------------|----------------------------|--------------------------|--------------------------|
| <b>I</b>        | 0:02:31                      | 0:07:15                    | 0:42:27                  | 0:13:05                  |
| <b>II</b>       | 0:02:40                      | 0:09:32                    | 0:46:01                  | 0:12:12                  |
| <b>III</b>      | 0:03:02                      | 0:07:14                    | 1:03:54                  | 0:12:35                  |
| <b>IV</b>       | 0:03:28                      | 0:07:43                    | 0:56:33                  | 0:11:29                  |
| <b>V</b>        | 0:03:06                      | 0:11:35                    | 0:53:09                  | 0:13:14                  |
| <b>VI</b>       | 0:02:47                      | 0:08:47                    | 0:41:43                  | 0:13:20                  |
| <b>VII</b>      | 0:02:44                      | 0:10:06                    | 0:43:02                  | 0:14:26                  |
| <b>VIII</b>     | 0:03:01                      | 0:07:28                    | 0:55:20                  | 0:11:48                  |
| <b>NH</b>       | 0:02:31                      | 0:06:04                    | 0:34:30                  | 0:13:50                  |

*Table 4 Average Response Time for Priority Calls by Division*

## **Shift Relief Factor and Work Schedule**

Now that we have examined the nature of PGCPD calls for service, we can prepare a staffing estimate. The first step is to calculate the shift relief factor (SRF). The shift relief factor indicates how many officers should be assigned to a work group to ensure that the appropriate number of officers are on duty. We calculate the SRF by dividing the maximum number of hours an officer can work in a year by the actual number worked. The shift relief factor will vary depending on the work schedule, so it is instructive to first examine police work scheduling.



Police work schedules come in all shapes and sizes. Although each seems unique, there are ways to compare them. Among the important components of a work schedule are:

- Average work week
- Shift length
- Number of consecutive work days
- Weekend time off
- Staffing by day of week
- Percentage of officers on duty each day.

Figure 12 illustrates a work schedule in which officers work five consecutive eight-hour days and then have two off days.

|      | S   | M   | T   | W   | T   | F   | S   |
|------|-----|-----|-----|-----|-----|-----|-----|
| 1    | Off | Off |     |     |     |     |     |
| 2    |     | Off | Off |     |     |     |     |
| 3    |     |     | Off | Off |     |     |     |
| 4    |     |     |     | Off | Off |     |     |
| 5    |     |     |     |     | Off | Off |     |
| 6    |     |     |     |     |     | Off | Off |
| 7    | Off |     |     |     |     |     | Off |
| % On | 71  | 71  | 71  | 71  | 71  | 71  | 71  |

Figure 12 Example of a 5/2 Work Schedule

Such a schedule has several noteworthy properties, including

- Fixed days off
- Three groups having either a full or partial weekend off
- Equal staffing by day of week
- An on-duty cycle of five days.

**Importantly, we observe that 71 percent (five of seven) officers are assigned to be on duty each day.**

Figure 13 shows a similar 5/2 schedule that increases staffing on weekends. In this figure, the number of officers increases from seven to nine, with the number of officers whose off-days are Monday and Tuesday increasing to two (Group 2), and the number of officers with Tuesday and Wednesday off-days also increasing to two (Group 3). This allows the reduction of staffing on some days, and the increase on others. This schedule is particularly attractive to employees who want fixed days off but also may be going to school or assisting in childcare. The disadvantage is that most employees never get a weekend day off.

|       | S   | M   | T   | W   | T   | F   | S   |
|-------|-----|-----|-----|-----|-----|-----|-----|
| 1     | Off |     |     |     |     |     | Off |
| 2 (2) |     | Off | Off |     |     |     |     |
| 3 (2) |     |     | Off | Off |     |     |     |
| 4     |     |     |     | Off | Off |     |     |
| 5     |     |     |     |     | Off | Off |     |
| 6     |     |     |     |     |     | Off | Off |
| 7     | Off | Off |     |     |     |     |     |
| On    | 7   | 6   | 5   | 6   | 7   | 7   | 7   |
| Off   | 2   | 3   | 4   | 3   | 2   | 2   | 2   |
| % On  | 77% | 66% | 55% | 66% | 77% | 77% | 77% |

Figure 13 Example of 5/2 Schedule with Variable Staffing by Day of Week

## Ten-Hour Shifts

Another schedule structure is the “4-10” plan, which law enforcement agencies began adopting more than 40 years ago. Under this plan, officers work four 10-hour shifts and have 3 days off each week. The plan appeals to officers because it reduces the number of days worked, the likelihood of working on a holiday, and commuting time. The plan can also appeal to agencies because the work schedules have an “overlap” period between shifts, when officers on two shifts are working. This can allow the agency to double staffing during peak demand times. The following figure illustrates a typical 4/10 plan, one that is based on a seven-week duty cycle.

|   | S   | M   | T   | W   | T   | F   | S   |
|---|-----|-----|-----|-----|-----|-----|-----|
| 1 | OFF | OFF |     |     |     |     | OFF |
| 2 | OFF | OFF | OFF |     |     |     |     |
| 3 |     | OFF | OFF | OFF |     |     |     |
| 4 |     |     | OFF | OFF | OFF |     |     |
| 5 |     |     |     | OFF | OFF | OFF |     |
| 6 |     |     |     |     | OFF | OFF | OFF |
| 7 | OFF |     |     |     |     | OFF | OFF |
| % | 57  | 57  | 57  | 57  | 57  | 57  | 57  |

Figure 14 Example of 4/10 Work Schedule

Compared to 8-hour shifts, the above 10-hour schedule significantly reduces the proportion of officers assigned to be on duty, from **71% to 57%**. This happens because the agency must use the same number of officers to provide

30 hours of coverage that it used to provide 24 hours of staffing per day. In many agencies, those additional 6 hours of coverage are unnecessary.

Consider the following example. A department using a 5/2 schedule has 300 officers assigned to patrol, with 100 officers assigned to each eight-hour shift. On each shift, we would expect about **71 officers** (71%) to be assigned to duty. The department decides to implement a 4/10 plan with shift times of 0600 to 1600, 1400 to 2400, and 2200 to 0800. If it were to continue to assign 100 officers to each shift, we would expect **57 officers** (57%) to be assigned to work each day. This means that, except during the hours of the overlap, the agency will have fewer officers assigned to duty under the 10-hour schedule. Of course, the agency may use the additional capacity that comes from overlap times in a 4/10 plan to its advantage. But it must understand that any advantage it experiences in this way may be at the expense of another goal.

### ***PGCPD Patrol Work Schedules***

The bureau of patrol uses a mix of 4/10 and 5/2 schedules. Each division has five “shifts” or work groups. Because officers rotate across three watches the work groups must be of nominally equal size. Officers assigned to the day and evening watch rotate between the two watches and days off. This pattern is illustrated in Figure 15. By examining this illustration several findings emerge:

- Officers on the day and evening watch work ten-hour days
- There is a mixed pattern of days off each week (some weeks 4 on 3 off, other weeks 3 on and 4 off)
- This is an eight-week duty cycle-at the conclusion of the cycle officers are assigned to the graveyard watch on a fixed days off, 5/2 work schedule
- On six of out seven days 50 percent of officers are assigned to be on duty
- One day each week all units in the division are assigned to be on duty
- In divisions 1-4 the double staffing days are Wednesday, Thursday, Friday and Saturday. However, in divisions 5-8 the double staffing days are Sunday, Monday, Tuesday and Wednesday.

| <b>Week</b> | <b>S</b> | <b>M</b> | <b>T</b> | <b>W</b> | <b>TH</b> | <b>F</b> | <b>S</b> |
|-------------|----------|----------|----------|----------|-----------|----------|----------|
| <b>1</b>    | X        | D        | D        | D        | D         | X        | X        |
| <b>%ON</b>  | 50       | 50       | 50       | 50       | 100       | 50       | 50       |
| <b>2</b>    | X        | X        | E        | E        | E         | E        | X        |
| <b>%ON</b>  | 50       | 50       | 50       | 50       | 50        | 100      | 50       |
| <b>3</b>    | X        | X        | X        | D        | D         | D        | D        |
| <b>%ON</b>  | 50       | 50       | 50       | 50       | 50        | 50       | 100      |
| <b>4</b>    | X        | X        | X        | E        | E         | E        | E        |
| <b>%ON</b>  | 50       | 50       | 50       | 100      | 50        | 50       | 50       |
| <b>5</b>    | E        | X        | X        | X        | E         | E        | E        |
| <b>%ON</b>  | 50       | 50       | 50       | 50       | 100       | 50       | 50       |
| <b>6</b>    | E        | E        | X        | X        | X         | E        | E        |
| <b>%ON</b>  | 50       | 50       | 50       | 50       | 50        | 100      | 50       |
| <b>7</b>    | E        | E        | E        | X        | X         | X        | D        |
| <b>%ON</b>  | 50       | 50       | 50       | 50       | 50        | 50       | 100      |
| <b>8</b>    | D        | D        | D        | D        | X         | X        | X        |
| <b>%ON</b>  | 50       | 50       | 50       | 100      | 50        | 50       | 50       |

*Figure 15 PGCPD Patrol 4-10 Work Schedule*

In Figure 16 we illustrate the graveyard watch work schedule. This schedule has fixed days off that are assigned by the shift supervisor. As we can observe the daily staffing levels are significantly higher than on either the day or evening watch.

|             | <b>S</b>   | <b>S</b>   | <b>M</b>   | <b>T</b>   | <b>W</b>   | <b>TH</b>  | <b>F</b>   |
|-------------|------------|------------|------------|------------|------------|------------|------------|
| <b>ON</b>   | 8          | 6          | 7          | 8          | 7          | 7          | 7          |
| <b>OFF</b>  | 2          | 4          | 3          | 2          | 3          | 3          | 3          |
| <b>% ON</b> | <b>80%</b> | <b>60%</b> | <b>70%</b> | <b>80%</b> | <b>70%</b> | <b>70%</b> | <b>70%</b> |

*Figure 16 PGCPD Patrol Graveyard Work Schedule*

### *Calculating Shift Relief Factors*

To calculate shift relief factors, which are essential to determining how many workers to assign for a shift, we need to know how many hours an officer could, and could not, work.

The shift relief factor is defined as: the number of hours that could be worked/the actual number worked. Table 5 lists the number of hours taken by 589 officers (corporal and below) assigned to patrol for one year.

| <b>Category</b>                   | <b>Annual Hours</b> |
|-----------------------------------|---------------------|
| <b>Absent w/o Leave</b>           | 206.5               |
| <b>Administrative Leave-Civ</b>   | 10                  |
| <b>Administrative Leave-Govt</b>  | 514                 |
| <b>Administrative Leave-Other</b> | 16715.5             |
| <b>Annual Leave</b>               | 33176.75            |
| <b>County Comp Paid</b>           | 44039.5             |
| <b>COVID Admin Leave</b>          | 794                 |
| <b>Disability Leave</b>           | 7628                |
| <b>Discretionary Leave</b>        | 12192.5             |
| <b>FLSA Comp Paid</b>             | 575.5               |
| <b>FMLA Annual Leave</b>          | 2369                |

|                            |                 |
|----------------------------|-----------------|
| <b>FMLA Holiday Leave</b>  | 126             |
| <b>FMLA Parental Leave</b> | 3391.5          |
| <b>FMLA Personal</b>       | 34              |
| <b>FMLA Sick Leave</b>     | 5640.5          |
| <b>FMLA-CO Comp Pd</b>     | 1077.5          |
| <b>FMLA-FLSA Comp Pd</b>   | 215             |
| <b>Holiday Leave</b>       | 8251.5          |
| <b>HS Admin</b>            | 1588            |
| <b>Leave Without Pay</b>   | 175.5           |
| <b>Military Leave</b>      | 4488            |
| <b>Military LWOP</b>       | 13476           |
| <b>Personal Leave</b>      | 6721.25         |
| <b>Sick Emerg Pd Lv</b>    | 268             |
| <b>Sick Leave</b>          | 43447.5         |
| <b>Suspension</b>          | 285             |
| <b>Grand Total</b>         | <b>207406.5</b> |

*Table 5 Total Benefit Time off for Patrol Officers*

Based on this data we conclude that the average officers assigned to patrol uses 352 hours of benefit time off per year. We now can calculate the shift relief factor. Table 6 illustrates the calculation for officers assigned to eight-hour shifts.

| Category                                | Hours      |
|-----------------------------------------|------------|
| <b>BTO Average</b>                      | 352        |
| <b>In service training <sup>4</sup></b> | 40         |
| <b>Sub total</b>                        | 392        |
| <b>RDO (16 X 52)</b>                    | 832        |
| <b>Total Time Off</b>                   | 1224       |
| <b>Maximum Worked</b>                   | 2920       |
| <b>Actual Worked</b>                    | 1696       |
| <b>SRF Max/Actual</b>                   | <b>1.7</b> |

*Table 6 Shift Relief Factor for Eight-Hour Work Schedules*

| Category                   | Hours      |
|----------------------------|------------|
| <b>BTO Average</b>         | 352        |
| <b>In service training</b> | 40         |
| <b>Sub total</b>           | 392        |
| <b>RDO (52 x 30)</b>       | 1560       |
| <b>Total Time Off</b>      | 1952       |
| <b>Maximum Worked</b>      | 3650       |
| <b>Actual Worked</b>       | 1698       |
| <b>SRF</b>                 | <b>2.1</b> |

*Table 7 Shift Relief Factor for 10 Hour Schedules*

As we can observe, the shift relief factor depends, in part, on the work schedule. Even though officers on both schedules work the same number of hours each year, they work, depending on their shift, different numbers of days: 260 for those on 8-hour shifts, and 208 for those on 10-hour shifts.

In practical terms, the shift relief factor tells us the number of officers that should be assigned to a shift to ensure that the appropriate number will be on duty. For example, if the agency wanted to staff ten officers on patrol for an

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<sup>4</sup> This is an estimate of annual in-service training.

eight-hour shift, then the SRF of 1.7 indicates it would need to assign 17 ( $1.7 \times 10$ ) to the shift. To deploy 10 officers on ten-hour shifts, the agency would need to assign 21 ( $10 \times 2.1$ ) officers to it.

### Patrol Staffing Estimates

Tables 8 and 9 illustrate our patrol staffing estimates. The first column of the table indicates the division and watch. The second indicates the CFS for each division and watch, showing, for example, that the day shift (starting at 6 a.m.) in Division 1 has 19,547 CFS during the study period. The third column indicates backup unit adjustments; we assume 25 percent of daytime CFS and 50 percent of evening and graveyard watch CFS have backup units respond.

Column 4, which includes the backup unit adjustment, is the basis for our analysis. The adjusted CFS is the sum of the CFS in column 2 plus the back-up requirements in column 3.

In Column 5 we estimate the total time consumed on calls (in hours) by shift, based on an average time of 40 minutes per call. Year. The unit value in column 6 is the number of officers that would be needed if they worked every day and if they only answered calls for their entire shift. An officer working eight hours all 365 days of the year would work 2,920 hours. In column 6 we show the result of the total hours divided by 2920.

For column 7, we multiply the unit value of column 6 by the performance objective. Here, we assume that each shift needs enough officers so that 40 percent of officer time is spent handling calls for service, and 60 percent is spent on other activities. Multiplying the values of column 6 by 2.5 yields the values of column 7.

For column 8 we multiply the number of officers required to be on duty, shown in column 7, by the appropriate shift relief factor—1.7 for the eight-hour shifts as calculated earlier—and rounded up to the next whole number of officers. This tells us the number to **assign** to the watch to ensure that the appropriate number of units were on duty.

In columns 9 and 10 we repeat this process, although we assume that officers will spend 50 percent of their time on calls for service and 50% on other activities.



| <b>D1 (1)</b>  | <b>2</b>    | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> | <b>7</b> | <b>8</b>  | <b>9</b> | <b>10</b> |
|----------------|-------------|----------|----------|----------|----------|----------|-----------|----------|-----------|
| <b>Watch</b>   | CFS         | Backup   | ADJ CFS  | Hours    | Units    | 40% CFS  | X SRF     | 50%      | XSRF      |
| <b>Day</b>     | 19547       | 4887     | 24434    | 16369    | 5.6      | 14       | 24        | 11.2     | 20        |
| <b>Evening</b> | 24754       | 12377    | 37131    | 24878    | 8.5      | 21.25    | 37        | 17       | 29        |
| <b>Night</b>   | 14355       | 7178     | 21533    | 14427    | 4.9      | 12.25    | 21        | 9.2      | 16        |
|                |             |          |          |          |          |          | <b>82</b> |          | <b>65</b> |
| <b>D2</b>      |             |          |          |          |          |          |           |          |           |
| <b>Watch</b>   | CFS         | Backup   | ADJ CFS  | Hours    | Units    | 40% CFS  | X SRF     | 50%      | XSRF      |
| <b>Day</b>     | 14132       | 3533     | 17665    | 11836    | 4.1      | 10.1     | 18        | 8.2      | 14        |
| <b>Evening</b> | 16429       | 8215     | 24644    | 16512    | 5.7      | 14       | 24        | 11.4     | 20        |
| <b>Night</b>   | <b>8227</b> | 4139     | 12366    | 8285     | 2.8      | 7.1      | 13        | 5.6      | 10        |
|                |             |          |          |          |          |          | <b>55</b> |          | <b>44</b> |
| <b>D3</b>      |             |          |          |          |          |          |           |          |           |
| <b>Watch</b>   | CFS         | Backup   | ADJ CFS  | Hours    | Units    | 40% CFS  | X SRF     | 50%      | XSRF      |
| <b>Day</b>     | 9250        | 2313     | 11563    | 7747     | 2.7      | 6.6      | 12        | 5.4      | 10        |
| <b>Evening</b> | 11075       | 5538     | 16613    | 11131    | 3.8      | 9.5      | 17        | 7.6      | 13        |
| <b>Night</b>   | <b>5808</b> | 2904     | 8712     | 5837     | 2        | 5        | 9         | 4        | 7         |
|                |             |          |          |          |          |          | <b>38</b> |          | <b>30</b> |
| <b>D4</b>      |             |          |          |          |          |          |           |          |           |
| <b>Watch</b>   | CFS         | Backup   | ADJ CFS  | Hours    | Units    | 40% CFS  | X SRF     | 50%      | XSRF      |
| <b>Day</b>     | 15573       | 3893     | 19466    | 13042    | 4.5      | 11.25    | 20        | 9        | 16        |
| <b>Evening</b> | 19192       | 9596     | 28788    | 19288    | 6.6      | 16.5     | 29        | 13.2     | 23        |
| <b>Night</b>   | 10085       | 5043     | 15128    | 10136    | 3.5      | 8.8      | 15        | 7        | 12        |
|                |             |          |          |          |          |          | <b>64</b> |          | <b>51</b> |

*Table 8 Staffing Estimates Divisions 1-4*

| D5             | 2     | 3      | 4       | 5     | 6     | 7       | 8         | 9    | 10        |
|----------------|-------|--------|---------|-------|-------|---------|-----------|------|-----------|
| <b>Watch</b>   | CFS   | Backup | ADJ CFS | Hours | Units | 40% CFS | X SRF     | 50%  | XSRF      |
| <b>Day</b>     | 7321  | 1831   | 9152    | 6132  | 2.1   | 5.25    | 9         | 4.2  | 8         |
| <b>Evening</b> | 8674  | 4337   | 13011   | 8717  | 3     | 7.5     | 13        | 6    | 11        |
| <b>Night</b>   | 4310  | 2155   | 6465    | 4332  | 1.5   | 3.7     | 7         | 3    | 6         |
|                |       |        |         |       |       |         | <b>29</b> |      | <b>25</b> |
| <b>D6</b>      |       |        |         |       |       |         |           |      |           |
| <b>Watch</b>   | CFS   | Backup | ADJ CFS | Hours | Units | 40% CFS | X SRF     | 50%  | XSRF      |
| <b>Day</b>     | 6379  | 1595   | 7974    | 5343  | 1.8   | 4.6     | 8         | 3.6  | 7         |
| <b>Evening</b> | 7807  | 3904   | 11711   | 7846  | 2.7   | 6.7     | 12        | 5.4  | 10        |
| <b>Night</b>   | 4408  | 2204   | 6612    | 4430  | 1.5   | 3.8     | 7         | 3    | 6         |
|                |       |        |         |       |       |         | <b>27</b> |      | <b>23</b> |
| <b>D7</b>      |       |        |         |       |       |         |           |      |           |
| <b>Watch</b>   | CFS   | Backup | ADJ CFS | Hours | Units | 40% CFS | X SRF     | 50%  | XSRF      |
| <b>Day</b>     | 3374  | 844    | 4218    | 2826  | 1     | 2.5     | 5         | 2    | 4         |
| <b>Evening</b> | 4136  | 2068   | 6204    | 4157  | 1.4   | 3.6     | 7         | 2.8  | 5         |
| <b>Night</b>   | 2046  | 1023   | 3069    | 2056  | 0.7   | 1.8     | 6         | 1.4  | 3         |
|                |       |        |         |       |       |         | <b>18</b> |      | <b>12</b> |
| <b>D8</b>      |       |        |         |       |       |         |           |      |           |
| <b>Watch</b>   | CFS   | Backup | ADJ CFS | Hours | Units | 40% CFS | X SRF     | 50%  | XSRF      |
| <b>Day</b>     | 12188 | 3047   | 15235   | 10207 | 3.5   | 8.7     | 15        | 7    | 12        |
| <b>Evening</b> | 15014 | 7507   | 22521   | 15089 | 5.2   | 12.9    | 22        | 10.4 | 18        |
| <b>Night</b>   | 7692  | 3846   | 11538   | 7730  | 2.7   | 6.6     | 12        | 5.4  | 10        |
|                |       |        |         |       |       |         | <b>49</b> |      | <b>40</b> |

Table 9 Staffing Estimates Division 5-8

Table 10 summarizes the staffing requirements for 40 percent time on calls for service and eight-hour schedules. It is important to point out that if the agency continues to use 10-hour schedules the number of officers required will increase by 20 percent.

| Division     | Day        | Evening    | Night     |            |
|--------------|------------|------------|-----------|------------|
| 1            | 24         | 37         | 21        |            |
| 2            | 18         | 24         | 13        |            |
| 3            | 12         | 17         | 9         |            |
| 4            | 20         | 29         | 15        |            |
| 5            | 9          | 13         | 7         |            |
| 6            | 8          | 12         | 7         |            |
| 7            | 5          | 7          | 6         |            |
| 8            | 15         | 22         | 12        |            |
| <b>Total</b> | <b>111</b> | <b>161</b> | <b>90</b> | <b>362</b> |

*Table 10 Summary of Staffing Requirements*

There are a few things to consider when evaluating the staffing methodology. First, it is based on hourly and daily average activity. There will be days when a significant portion of the officers on duty will be assigned to calls for service for the majority of their shift. On other days there may be long periods with few calls for service. Second, this methodology does not work well when the number of calls for service is relatively low (e.g., Division 7), or in cases where the number of calls is modest but the nature of the calls is more severe. In both cases it is wise to rely on local knowledge. Finally, these estimates do not include supervisors, or officers assigned as investigators, or community policing specialists.

### **Patrol Staffing Recommendations**

**The department has enough officers assigned to patrol but it is essential that the PGCPD begin the process of eliminating the 10-hour work schedule as it is extraordinarily inefficient.** Although the agency can easily revert to an eight-hour schedule, many agencies faced with similar situations have adopted a 12-hour work schedule. Because we believe that 12-hour shifts will provide significant benefits for the PGCPD, we review its attributes below.

The most-commonly used 12-hour schedule is relatively straightforward with a 14-day duty cycle. As shown in Figure 17, this pattern consists of two days

on / two days off, three days on / two days off, two days on / three days off. This schedule results in a 42-hour average workweek.<sup>5</sup> Over the two-week cycle, officers would earn four additional hours. All officers are assigned to one of two groups. This schedule makes it easier for supervisors and officers to work on the same schedule.

|                 | Su  | M   | T   | W   | T   | F   | Sa  |
|-----------------|-----|-----|-----|-----|-----|-----|-----|
| <b>Week One</b> | Off |     |     | Off | Off |     |     |
| <b>Week Two</b> |     | Off | Off |     |     | Off | Off |
| <b>% On</b>     | 50  | 50  | 50  | 50  | 50  | 50  | 50  |

Figure 17 Example of a 12 Hour Work Schedule

Officers have rotating days off during the duty cycle, but the pattern is repeated every two weeks. Officers assigned to this pattern would have every other weekend off.

At first glance, it looks like 12-hour shifts actually reduce resource availability, but the agency needs only staff two shifts per day, so it as efficient as eight-hour schedules.

We illustrate an alternative 12-hour work schedule for two work groups in Figure 20 that may more closely conform to a schedule with fixed days off.

| Group | S   | M   | T   | W   | T   | F   | S   | S   | M   | T   | W   | T   | F   | S   |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1     |     |     |     | OFF | OFF | OFF | OFF |     |     |     |     | OFF | OFF | OFF |
| 2     | OFF | OFF | OFF |     |     |     |     | OFF | OFF | OFF | OFF |     |     |     |

Figure 18 Example of a 12-Hour Schedule with Nominally Fixed Days Off

This schedule has two platoons and a 14-day duty cycle. Officers in the first platoon work on Sunday, Monday and Tuesday of the first week and then have four days off. During the second week of the cycle, officers work on Sunday, Monday, Tuesday, and Wednesday and then have three days off. The second platoon has what is nominally the opposite on and off pattern. This work schedule also results in a 42-hour workweek (84 hours over two weeks).

The Corona, California, Police Department uses still another version of the 12-hour schedule that is popular among Southern California agencies. In this

<sup>5</sup> This can be modified to reduce average workweek to 40 hours.

schedule, each officer works three 12.5-hour shifts per week and has four days off. The day on / off configuration is fixed. Depending on the number of officers assigned to each day off group, the agency can vary staffing by day of week. With this schedule, officers work 75 hours in each two-week period. This means that, over the course of the year, the officer “owes” the agency 130 hours, which can be used for training or for occasions when extra staffing is required. Figure 19 illustrates this schedule.

|   | S   | M   | T   | W   | T   | F   | S   |
|---|-----|-----|-----|-----|-----|-----|-----|
| 1 |     |     |     | OFF | OFF | OFF | OFF |
| 2 | OFF |     |     |     | OFF | OFF | OFF |
| 3 | OFF | OFF |     |     |     | OFF | OFF |
| 4 | OFF | OFF | OFF |     |     |     | OFF |
| 5 | OFF | OFF | OFF | OFF |     |     |     |
| 6 |     | OFF | OFF | OFF | OFF |     |     |

Figure 19 Corona CA Work Schedule

Agencies that adopt 12-hour work schedules are particularly concerned about officer fatigue. The evidence on this issue is mixed. On its face, a 12-hour shift seems very long, and one might predict an increase in accidents and injuries related to fatigue. The schedule also, however, provides significant amounts of time off, and most agencies that adopted this approach have not experienced increases in fatigue, accidents, or injuries. In fact, most agencies report that officers on 12-hour schedules use less sick time and have lower levels of stress and illness.<sup>6</sup> Twelve-hour work schedules continue to be popular with agencies throughout the United States and Canada.

Figure illustrates the application of the 12-hour schedule to the staffing estimate for Division I. As can be seen the number of officers required is essentially the same as the number required with the eight-hour

|       | CFS   | BAC   | ADJ<br>CFS | Hours | Units | 40%<br>CFS | XSRF |
|-------|-------|-------|------------|-------|-------|------------|------|
| Day   | 31950 | 11182 | 43132      | 28898 | 6.6   | 16.5       | 43   |
| Night | 26706 | 13353 | 40059      | 26840 | 6.2   | 15.3       | 40   |
|       |       |       |            |       |       |            | 83   |

Figure 20 Twelve Hour Work Schedule for Division I.

**The PGCPD should also take steps, as indicated below, to better manage demand for police services, particularly with respect to property-damage crashes and burglar alarms. We discuss below some possible approaches here.**

<sup>6</sup> Adler, E. (2017, December 27). "More Minnesota Police Departments Going to 12-hour Work Schedules." Minneapolis *Star-Tribune*. <https://www.startribune.com/more-police-departments-going-to-12-hour-work-schedules/466894893/>

## *Property-Damage Traffic Crashes*

Property-damage crashes can create significant demands for law enforcement agencies. Even though most are not reportable under Maryland law the department continues to devote significant resources to accident response.

Such crashes can be labor-intensive for police. In addition to the investigating officer, the scene often requires a second or third officer to control traffic. Those involved in the crash often wait for the police in the trafficway, thus creating risk of subsequent injury and additional crashes. Moreover, when other first responders attend the crash, it can cause significant traffic backups and delays.

The department can handle these property damage crashes in a few different ways.

- First, it should encourage those involved in property damage crashes to move off the roadway, and to complete forms at the police station or by phone. Agencies often use this type of strategy during storms.
- Second, it should use nonsworn staff to investigate crashes. The City of Denver, for example, recently hired 15 civilian crash investigators.<sup>7</sup> As nonsworn investigators acquire more skill and experience, the department could assign them to investigate injury accidents as well.
- Third, it should consider a novel approach: the collision reporting center, which was originally established in Canada and more recently adopted in the United States. This originated in Ontario when police realized it had become unfeasible to investigate every property-damage collision; the resulting waits for on-scene investigations resulted in an increase in secondary collisions. While the government approved dropping the requirement for police to investigate property damage collisions, insurance companies were concerned that fraud would increase. The solution was to develop collision reporting centers.<sup>8</sup> After notifying police dispatch, participants could drive to a center and complete the accident report. The centers are a joint effort of the government, the police, and the insurance industry. In addition to the scores of sites across Canada, there are now sites in Tucson, Arizona;<sup>9</sup> Gardena and Salinas, California; Hampton, Virginia; and Ogden Utah.

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<sup>7</sup> "Civilian Crash Investigators Added to Denver Police Force (2017, May 31). CBS Denver.

<https://denver.cbslocal.com/2017/05/31/civilian-crash-investigators-denver-police/>

<sup>8</sup> "About Accident Support Services," (2021). Accident Support Services International, Ltd.

<https://www.accsupport.com/Home/About>

<sup>9</sup> City of Tucson (AZ) (2018, June 1). "First Collision Reporting Center Opens in Tucson."

<https://www.tucsonaz.gov/newsnet/first-collision-reporting-center-opens-tucson>

- Finally, the agency could allow traffic crashes to be reported online. The Colorado State Patrol, for example, provides a link for such reports.<sup>10</sup>

### *False Alarms*

Nationwide, police departments respond to millions of false alarms annually at a cost that tops \$1 billion. False alarms are a wasteful use of police resources and a problem that many law enforcement agencies struggle to manage. By one estimate, solving the problem of false alarms would relieve 35,000 officers from providing an essentially private service.”<sup>11</sup> Moreover, an alarm signal is not an indicator of criminal activity. In most instances, the alarm system is designed to detect motion but can also activate for other reasons such as “human error, system malfunctions and abnormal conditions, most of which have little to do with crime.”<sup>12</sup> Police departments and the municipalities that finance them can realize significant savings and increase productivity by reducing this often-unproductive use of officers’ time.<sup>13</sup>

Many communities are taking an aggressive approach to reducing response to false alarms. For example, the Milwaukee Police Department implemented the Verified Response Policy for burglar alarms in September 2004. Under this policy, the Milwaukee Police Department does not respond to the report of a burglar alarm activation unless a private first responder service first verifies it. The policy also requires alarm services to provide first responder services to respond to activated alarms and, if determining that a crime or an attempted crime has occurred or is occurring, to call for immediate police response.<sup>14</sup> As a result of this policy change, Milwaukee reduced its number of calls for service due to alarms from more than 30,000 in 2004 to 620 in 2012.

### **PGCPD should work to refine communication center policy and data.**

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10 Colorado State Patrol (2021). “Crash Information.”

<https://www.colorado.gov/pacific/csp/crash-information>

11 Simpson, R. (2005). *False Burglar Alarms*, 2<sup>nd</sup> ed. Tempe, Ariz: Arizona State University Center for Problem-Oriented Policing. <https://popcenter.asu.edu/content/false-burglar-alarms-2nd-ed>

12 Jones, Lee. (2004). “Selective Citizen Privileges.” Report to Mayor and City Councils

13 Schaenman, P.S., Horvath, A., and Hatry, H. P. (2013, January). “Opportunities for Police Cost Savings Without Sacrificing Service Quality: Reducing False Alarms.” The Urban Institute. <https://www.urban.org/research/publication/opportunities-police-cost-savings-without-sacrificing-service-quality-reducing-false-alarms>

14 Milwaukee (WI) Police Department (2021). “Burglar Alarm Policy.”

<https://city.milwaukee.gov/police/Information-Services/Burglar-Alarm-Policy>



Many law enforcement agencies participate in consolidated public safety communication centers-in many ways it is more efficient. However, even when part of a consolidated center, it is critical that the agency ensure that its voice is heard in decisions about how the center is managed. This is particularly true in this case because PGCPD is the largest participant in the center. We have discussed, for example, that the department and the center use different schemes for prioritization. There are issues related to data collection.

There are a number of call categories that appear to overlap. For example, consider the following categories:

- Loud music, Noise complaint, Party complaint
- Accident, Highway accident, Vehicle accident
- Lock out, Lock out/in

**PGCPD should examine ways to reduce travel time to priority calls for service.**

Our study suggests that there are a sufficient number of officers on duty in patrol so as to ensure that officers can be quickly dispatched to priority call for service. However, response times are adversely influenced by relatively long travel times. To a large extent, adding more officers will not help to alleviate this issue, because unlike fire engines, police officers are not in fixed locations. This is exacerbated because in PGC like other large agencies, communications are organized around division boundaries. Officers may not know about calls in another division for which they are very close, and officers assigned to a division are rarely assigned to calls in another division.

Fortunately. This dilemma can be addressed through the use of automated vehicle locator (AVL) systems. These systems allow a dispatcher to see the precise location of units, and can dispatch the closest unit, rather than the unit recommended by the CAD system. These systems are in use in many communities, and evidence suggests improved response time performance. Moreover, it can be an effective tool as part of intelligence lead policing, because department leadership can readily obtain a comprehensive view of available resources.<sup>15</sup>

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<sup>15</sup> Hee-Sub Shim. The Effects of Automated Vehicle Locator (AVL) System on Police Response Time to In-Progress Armed Robbery. *International Journal of Control and Automation* Vol. 11, No. 3 (2018), pp.201-210.