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# **Data and Operational Analysis Report Alameda, CA Police Operations**

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## **ICMA Background**

The International City/County Management Association (ICMA) is the premier local government leadership and management organization. Since 1914, ICMA's mission has been to create excellence in local governance by developing and advocating professional local government management worldwide. ICMA provides an information clearinghouse, technical assistance, training, and professional development to more than 9,000 city, town, and county experts and other individuals throughout the world.

## **ICMA Consulting Services**

The ICMA Consulting Services team helps communities solve critical problems by providing management consulting support to local governments. One of ICMA Consulting Services' areas of expertise is public safety services, which encompasses the following areas and beyond: organizational development, leadership and ethics, training, assessment of calls for service workload, staffing requirements analysis, designing standards and hiring guidelines for police and fire chief recruitment, police/fire consolidation, community-oriented policing, and city/county/regional mergers.

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## **I. Introduction**

This study was authorized by the City of Alameda, California, to review operations and staffing of the Alameda Police Department and to develop a strategic plan for the future. Our work focused on both the internal performance of the police department and detailed data analysis, which focused on three main areas: workload analysis, deployment analysis, and response-time analysis. These three data areas are almost exclusively related to patrol operations, which constitutes by far the majority of the police department's personnel and financial commitment. However, in our operations review, we consider all aspects of the police department.

The purpose of this study is to provide management with an overview of police operations and identify city management issues that should be addressed within the agency, particularly in the area of staffing. It is not designed to be a how-to manual for operating the police agency. Rather, its purpose is to provide local officials with a list of specific areas that the management of the police department should address. We expect that competent police managers will be able to carry out the various recommendations in the report in a timely fashion and routinely report back to the manager their progress in meeting these recommendations.

We fully understand and acknowledge the serious financial challenges facing the city, and we believe that the recommendations contained herein can be implemented with minimal effect on the services delivered by the Alameda Police Department.

We thank the officers and civilians of the Alameda Police Department for their assistance in completing this project. We also thank the staff of the City of Alameda for their hospitality during our on-site visits.

## II. Workload Analysis

We encountered a number of issues while analyzing the data supplied by the police department, and we made assumptions and decisions to address them. We describe these issues, assumptions, and decisions below.

- A small but significant percentage of calls involving patrol units had zero time on-scene (5.5 percent). Most of these were traffic-related calls or suspicious incidents.
- The computer software generates a large number of call codes, which can be customized by the dispatchers. This led to 171 different call descriptions, which we reduced to 15 categories for our tables and 9 categories for our figures.
- A proportion of calls ( 10.4 percent) were missing arrival times. For these, we could not calculate a valid response time or on-scene time.
- The data set also included approximately 7,700 instances where the same unit was recorded as being dispatched to, arriving at, and clearing a call location multiple times. The times were not identical and could not be explained. After consulting with the police department, we chose to use the record with the earliest arrival time and the latest clear time. This would ensure the existence of a response time and estimate the largest workload for a call.
- We also encountered approximately 20,200 recorded calls that lacked matching information regarding units. After consulting with the city, we determined that we could safely ignore these records as calls to which no patrol unit was assigned. This means that these calls did not add to the patrol force's workload.

Our study team has previously worked with many of these problems with call-for-service data. To identify calls that were canceled en route, we assumed zero time on-scene to account for a significant portion of them. Any call with an on-scene time of less than 30 seconds was labeled *zero on-scene*. We also used the information stored in the dispatch records to distinguish between patrol-initiated calls and other-initiated calls.

Before describing the workload analysis, we briefly review the data received. In the period from July 2007 to June 2008, there were approximately 52,200 calls for service (with accompanying unit information). Of that total, approximately 48,100 included a patrol unit as either the primary responder or a secondary unit. When focusing on our four-week periods, we analyzed 3,729 (patrol-related) calls in August 2007 and 3,599 calls in February 2008. In addition, when analyzing workloads and response times, we ignored calls with incorrect or missing time data. The inaccuracies included elapsed times that either were negative or exceeded 8 hours. For the entire year, we excluded fewer than 400 calls (less than 1 percent) from our analysis.

From July 2007 to June 2008, the police department reported 132 calls for service per day. As mentioned above, about 5.5 percent of these calls show no officer time spent on the call.

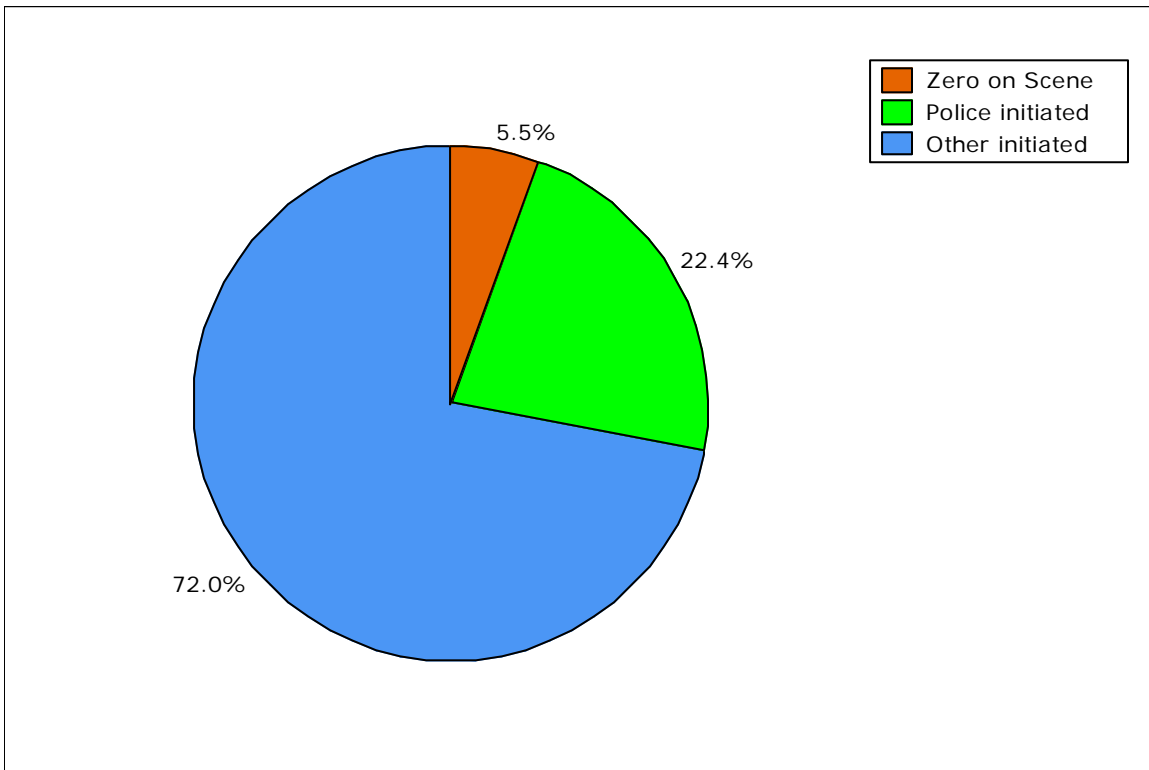
In the following pages, we show two types of data: activity and workload. The activity levels are measured by the average number of calls per day, broken down by the type and origin of the calls and categorized by the nature of the calls (e.g., crime or traffic).

Workloads are measured in average work-hours per day. Activity

levels show calls indicating when a patrol unit was out of service. The following tables use 15 call categories. For the graphs, some of these categories are consolidated to 9 distinct categories. We show our categories chart on the next page. We also examined out-of-service records, which we broke down into 2 categories.

<b>Table categories</b>	<b>Figure categories</b>
Accidents	Traffic
Traffic Enforcement	
Alarm	Investigations
Check/Investigation	
Animal Calls	General Non-Criminal
Miscellaneous	
Assist Other Agency	Assist Other Agency
Crime—Persons	Crime
Crime—Property	
Directed Patrol	Directed Patrol
Disturbance	Suspicious Incident
Suspicious Person/Vehicle	
Juvenile	Juvenile
Out of Service—Administrative	Out of Service
Out of Service—Personal	
Prisoner—Arrest	Arrest
Prisoner—Transport	

**Figure 1: Percentage Calls per Day, by Initiator**



*Note.* Percentages are based on a total of 48,142 calls.

**Table 1. Calls per Day, by Initiator**

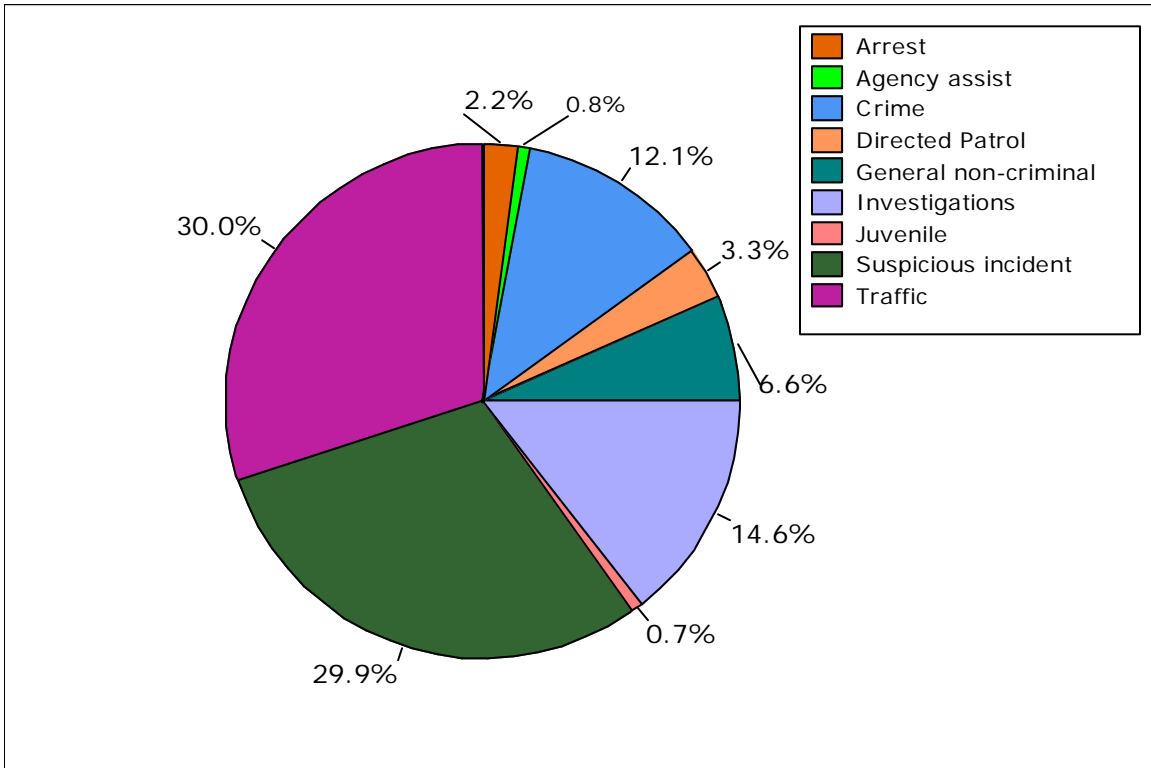
<b>Initiator</b>	<b>Total Calls</b>	<b>Calls per Day</b>
Zero On-Scene	2,671	7.3
Police-Initiated	10,786	29.6
Other-Initiated	34,682	95.0
<b>Total</b>	<b>48,139</b>	<b>131.9</b>

*Note.* This table excludes 3 calls with missing time data.

Observations:

- About 5.5 percent of the calls reported involve zero on-scene time and are included in these numbers as well as Figure 2 and Table 2. Later in the report, we exclude calls with zero on-scene time.
- The data records included a large number of patrol-initiated activities: 30 per day, or about 22 percent of all activities.
- There were a total of 132 calls per day, or 5.5 per hour.

**Figure 2. Percentage Calls per Day, by Category**



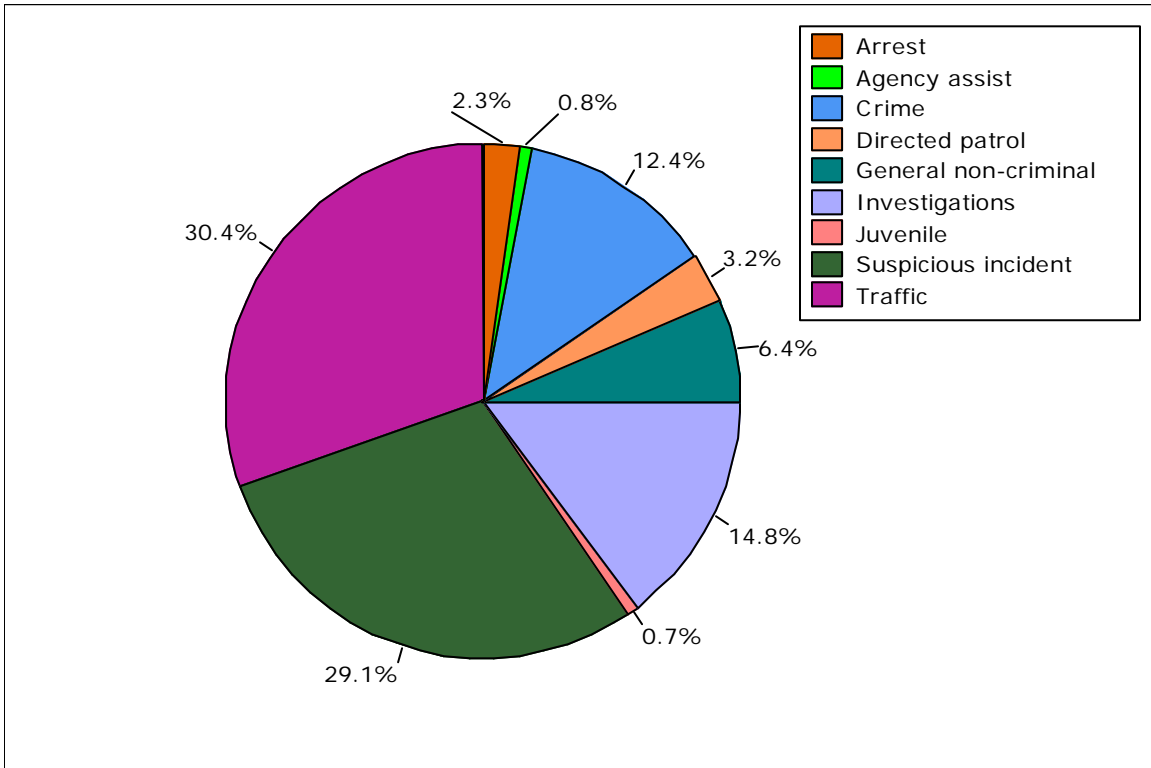
**Table 2. Calls per Day, by Category**

Category	Total Calls	Calls per Day
Accidents	1,557	4.3
Alarm	2,479	6.8
Animal Calls	1,661	4.5
Assist Other Agency	363	1.0
Check/Investigation	4,539	12.4
Crime—Persons	1,305	3.6
Crime—Property	4,516	12.3
Directed Patrol	1,572	4.3
Disturbance	7,506	20.5
Juvenile	314	0.9
Miscellaneous	1,528	4.2
Prisoner—Arrest	844	2.3
Prisoner—Transport	192	0.5
Suspicious Person/Vehicle	6,885	18.8
Traffic Enforcement	12,878	35.2
<b>Total</b>	<b>48,139</b>	<b>131.5</b>

Observations:

- Four categories (traffic, suspicious incident, investigations, and crime) accounted for 87 percent of activities.
- 30 percent of calls were traffic-related.
- 30 percent of calls were suspicious incidents, including general disturbances.
- 15 percent of calls were investigations.
- 12 percent of calls involved crimes.

**Figure 3. Percentage Non-Zero Calls per Day, by Category**



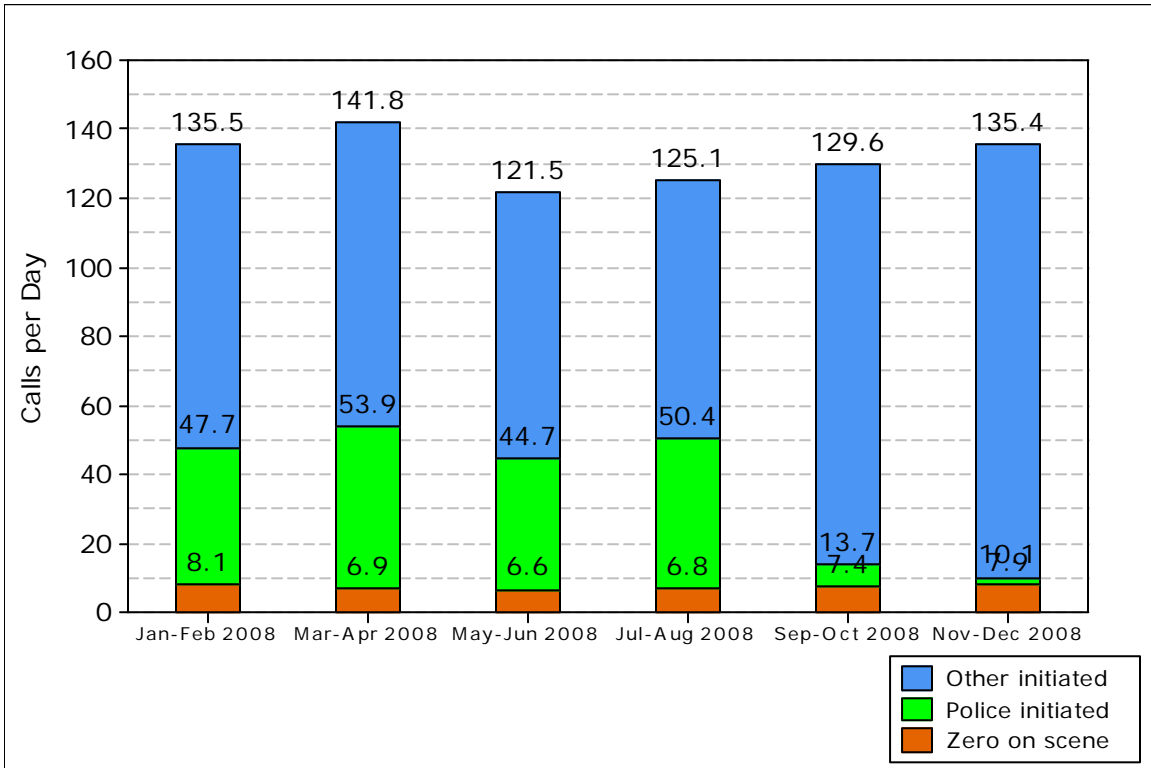
**Table 3. Non-Zero Calls per Day, by Category**

Category	Total Calls	Calls per Day
Accidents	1,534	4.2
Alarm	2,404	6.6
Animal Calls	1,495	4.1
Assist Other Agency	356	1.0
Check/Investigation	4,311	11.8
Crime—Persons	1,286	3.5
Crime—Property	4,332	11.8
Directed Patrol	1,467	4.0
Disturbance	6,788	18.5
Juvenile	310	0.8
Miscellaneous	1,407	3.8
Prisoner—Arrest	840	2.3
Prisoner—Transport	191	0.5
Suspicious Person/Vehicle	6,452	17.6
Traffic Enforcement	12,295	33.6
<b>Total</b>	<b>45,468</b>	<b>124.2</b>

Observations:

- When zero-on-scene calls are excluded, there were only 124 calls per day, or 5.2 per hour.
- The top four categories and their percentages remain essentially unchanged.

**Figure 4. Calls per Day, by Initiator and by Months**



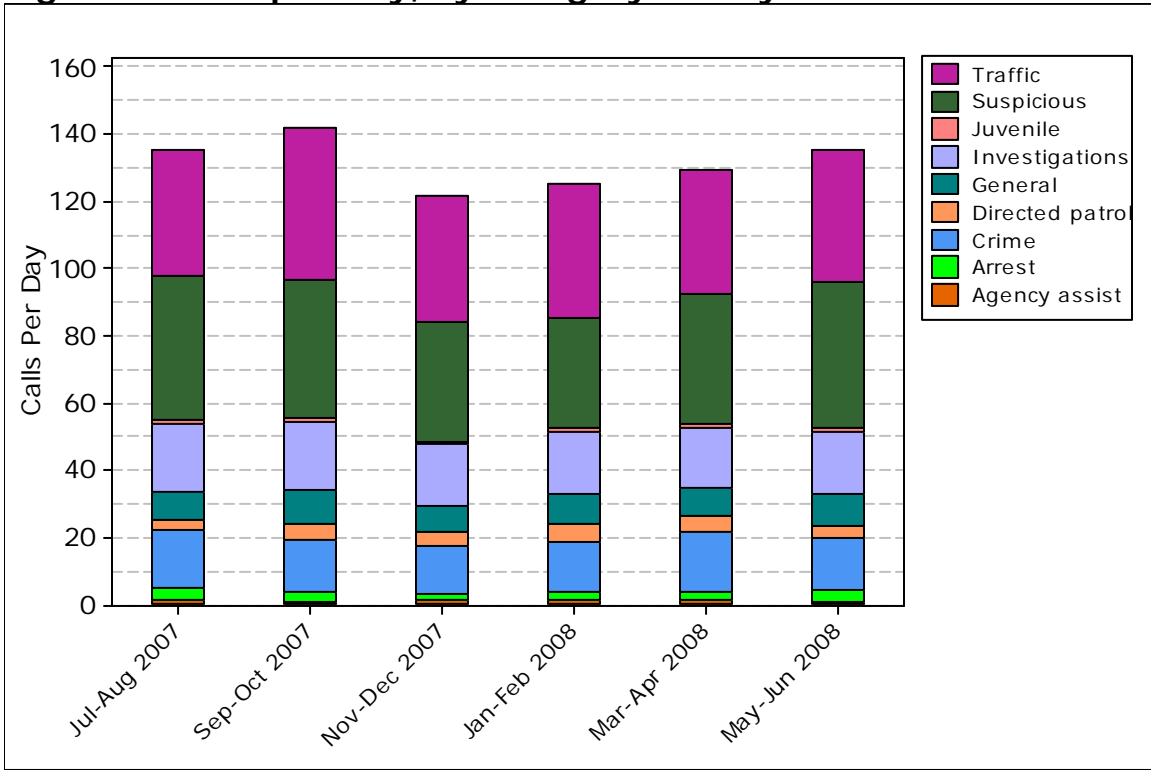
**Table 4. Calls per Day, by Initiator and by Months (July 2007 to June 2008)**

Initiator	Jul-Aug	Sep-Oct	Nov-Dec	Jan-Feb	Mar-Apr	May-Jun
Zero On-Scene	8.1	6.9	6.6	6.8	7.4	7.9
Police-Initiated	39.6	47.0	38.1	43.7	6.3	2.2
Other-Initiated	87.8	87.9	76.8	74.6	115.9	125.3
<b>Total</b>	<b>135.5</b>	<b>141.8</b>	<b>121.5</b>	<b>125.1</b>	<b>129.6</b>	<b>135.4</b>

**Observations:**

- The number of calls was highest from September to October.
- The number of calls was lowest from November to December.
- The longest months had 17 percent more calls than the shortest ones did.
- The number of police-initiated calls varied dramatically from month to month, leading us to believe that our method of identifying police-initiated calls may be inaccurate.

**Figure 5. Calls per Day, by Category and by Months**



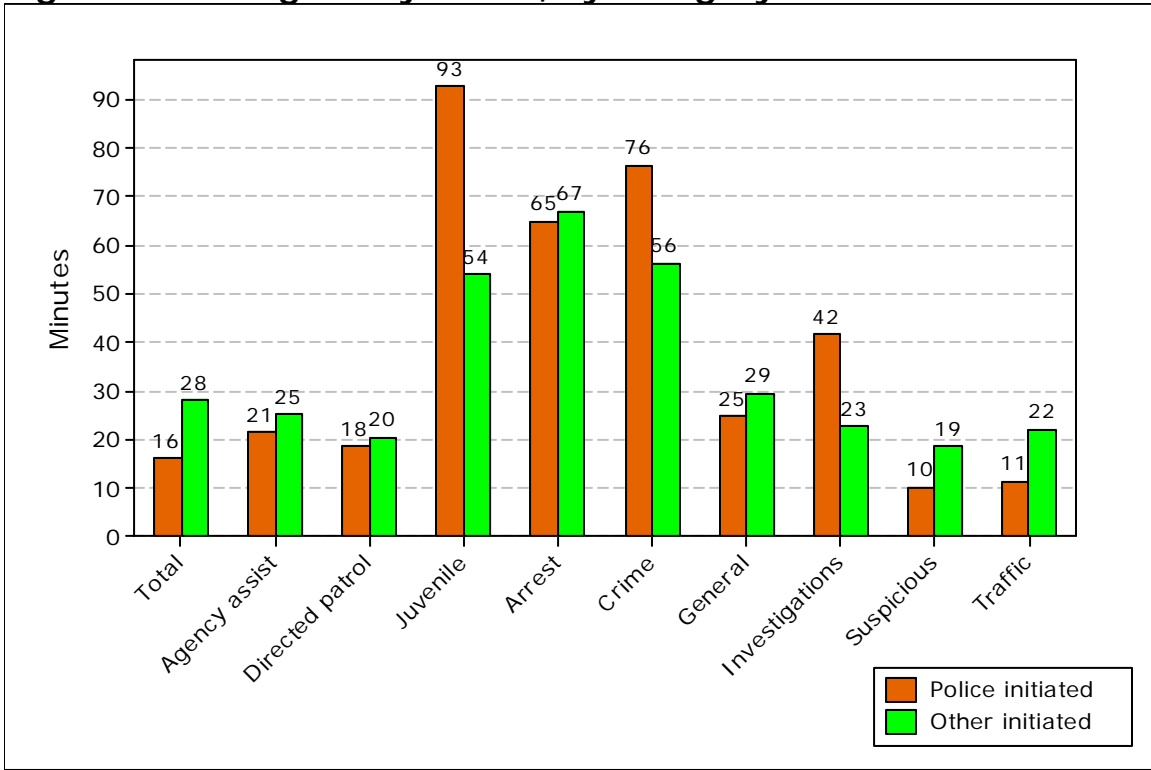
**Table 5. Calls per Day, by Category and by Months**

Category	Jul-Aug	Sep-Oct	Nov-Dec	Jan-Feb	Mar-Apr	May-Jun
Accidents	4.3	4.2	4.2	4.3	4.9	3.7
Alarm	7.0	7.6	6.7	6.4	6.4	6.5
Animal Calls	4.0	5.6	4.2	4.0	4.3	5.1
Assist Other Agency	1.3	0.8	1.0	0.9	1.1	0.8
Check/Investigation	13.3	13.1	12.1	12.3	11.8	11.8
Crime—Persons	3.5	3.4	3.0	3.5	4.0	3.9
Crime—Property	14.0	12.0	11.5	11.1	13.8	11.6
Directed Patrol	3.2	4.7	4.0	5.6	4.7	3.6
Disturbance	24.1	21.3	17.2	15.2	20.3	24.7
Juvenile	0.8	0.8	0.7	0.7	0.9	1.2
Miscellaneous	4.3	4.3	3.2	4.7	3.9	4.6
Prisoner—Arrest	2.4	2.4	1.7	2.6	2.1	2.6
Prisoner—Transport	0.8	0.5	0.3	0.4	0.4	0.8
Suspicious Person/Vehicle	18.8	20.2	18.6	17.9	18.4	19.1
Traffic Enforcement	33.6	40.9	33.1	35.4	32.6	35.5
<b>Total</b>	<b>135.5</b>	<b>141.8</b>	<b>121.5</b>	<b>125.1</b>	<b>129.6</b>	<b>135.4</b>

Observations:

- Traffic-related calls and suspicious incidents were the most common types of calls throughout the year.
- Traffic-related calls (enforcement and accidents) in general averaged between 37 and 40 per day, with the exception of September to October, when the total rose to 45 per day.
- Together, traffic-related calls (enforcement and accidents) and suspicious incidents (persons and disturbances) per day were consistently between 58 percent and 61 percent of all calls.
- Crime calls varied between 15 (November to February) and 18 (July to August and March to April) per day throughout the year.
- Investigations (checks and alarms) varied from 18 (March to June) to 21 (September to October) calls per day throughout the year.

**Figure 6. Average Busy Times, by Category and Initiator**



**Table 6. Average Busy Times, by Category and Initiator**

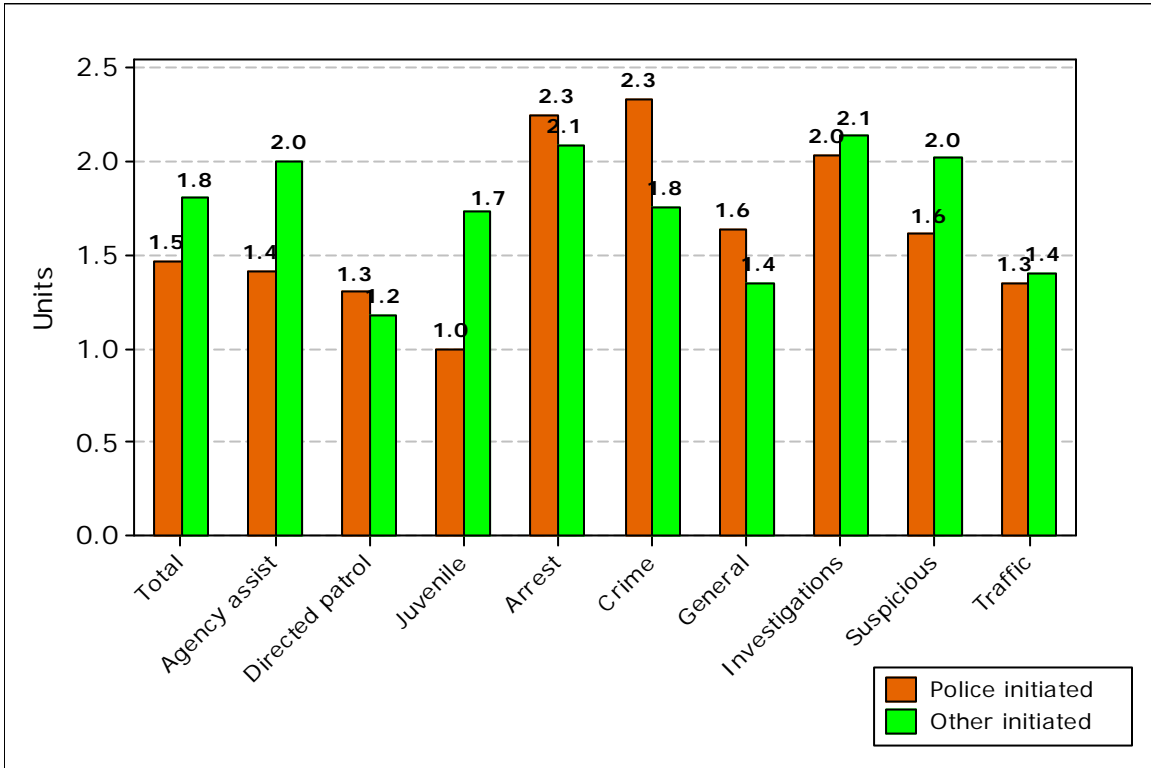
Category	Police-Initiated		Other-Initiated	
	Total Calls	Minutes	Total Calls	Minutes
Accidents	64	35.5	1,463	50.5
Alarm	25	8.5	2,376	13.1
Animal Calls	21	13.7	1,474	22.1
Assist Other Agency	34	21.4	322	25.1
Check/Investigation	91	50.6	4,212	28.0
Crime—Persons	45	91.9	1,220	76.9
Crime—Property	201	72.9	4,122	50.1
Directed Patrol	1,084	18.5	380	20.4
Disturbance	237	32.6	6,550	20.3
Juvenile	2	92.7	306	54.0
Miscellaneous	182	26.0	1,222	38.2
Prisoner—Arrest	401	65.0	436	66.5
Prisoner—Transport	14	62.5	177	67.7
Suspicious Person/Vehicle	2,050	7.4	4,400	15.9
Traffic Enforcement	6,325	11.1	5,966	15.0
<b>Total</b>	<b>10,776</b>	<b>16.0</b>	<b>34,626</b>	<b>28.0</b>

Note. Figure 6 and Table 6 exclude zero-on-scene calls.

Observations:

- The average time spent on a call ranged from 7 to 93 minutes overall, with significant variation by call type and initiator.
- The longest average times spent were above 90 minutes, for juvenile calls and crimes against persons that were initially identified by police officers.
- Police-initiated traffic-related calls averaged 11 minutes per call, while other-initiated traffic calls averaged 22 minutes.
- Crime calls averaged 76 minutes for police-initiated calls and 56 minutes for other-initiated calls.

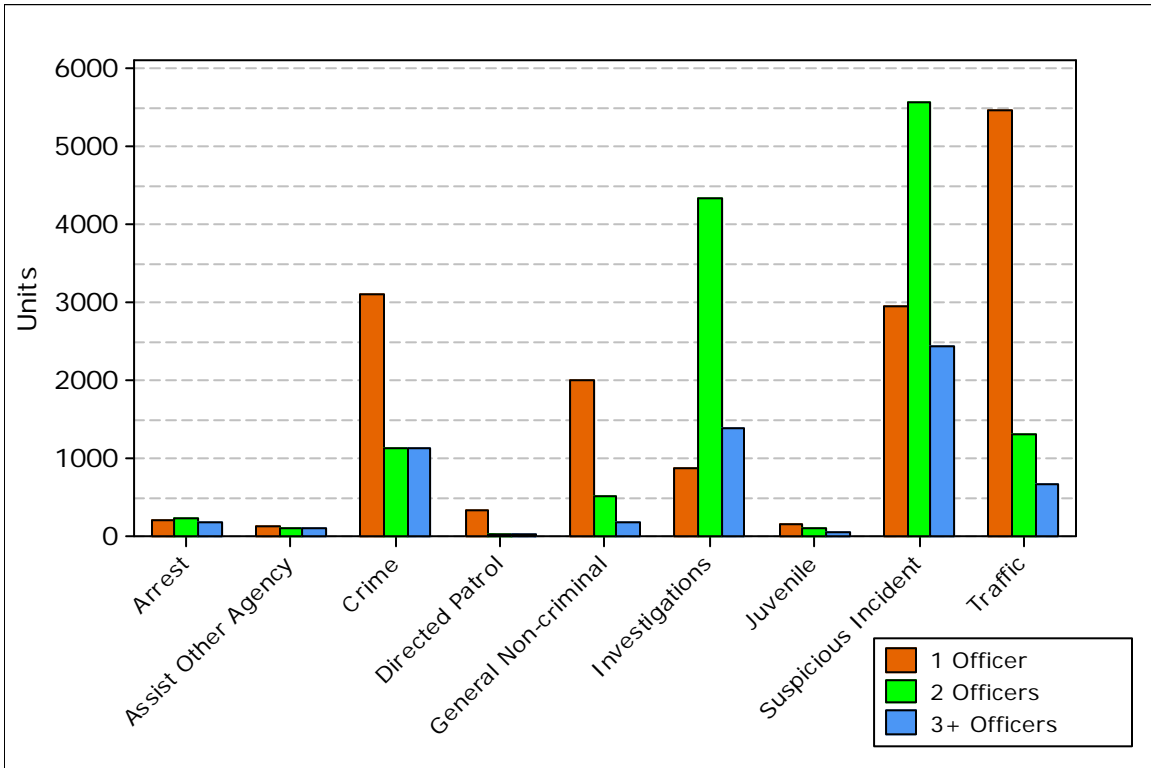
**Figure 7. Number of Responding Units, by Initiator and Category**



**Table 7. Number of Responding Units, by Initiator and Category**

Category	Police-Initiated		Other-Initiated	
	Average	Total Calls	Average	Total Calls
Accidents	1.8	64	2.0	1,470
Alarm	2.0	25	2.2	2,379
Animal Calls	1.1	21	1.2	1,474
Assist Other Agency	1.4	34	2.0	322
Check/Investigation	2.0	92	2.1	4,219
Crime—Persons	2.8	47	2.3	1,239
Crime—Property	2.2	201	1.6	4,131
Directed Patrol	1.3	1,086	1.2	381
Disturbance	2.2	237	2.1	6,551
Juvenile	1.0	2	1.7	308
Miscellaneous	1.7	183	1.6	1,224
Prisoner—Arrest	2.3	402	2.4	438
Prisoner—Transport	1.1	14	1.4	177
Suspicious Person/Vehicle	1.5	2,050	1.9	4,402
Traffic Enforcement	1.3	6,328	1.3	5,967
<b>Total</b>	<b>1.5</b>	<b>10,786</b>	<b>1.8</b>	<b>34,682</b>

**Figure 8. Number of Units Responding, by Category**



**Table 8. Number of Units Responding, by Category**

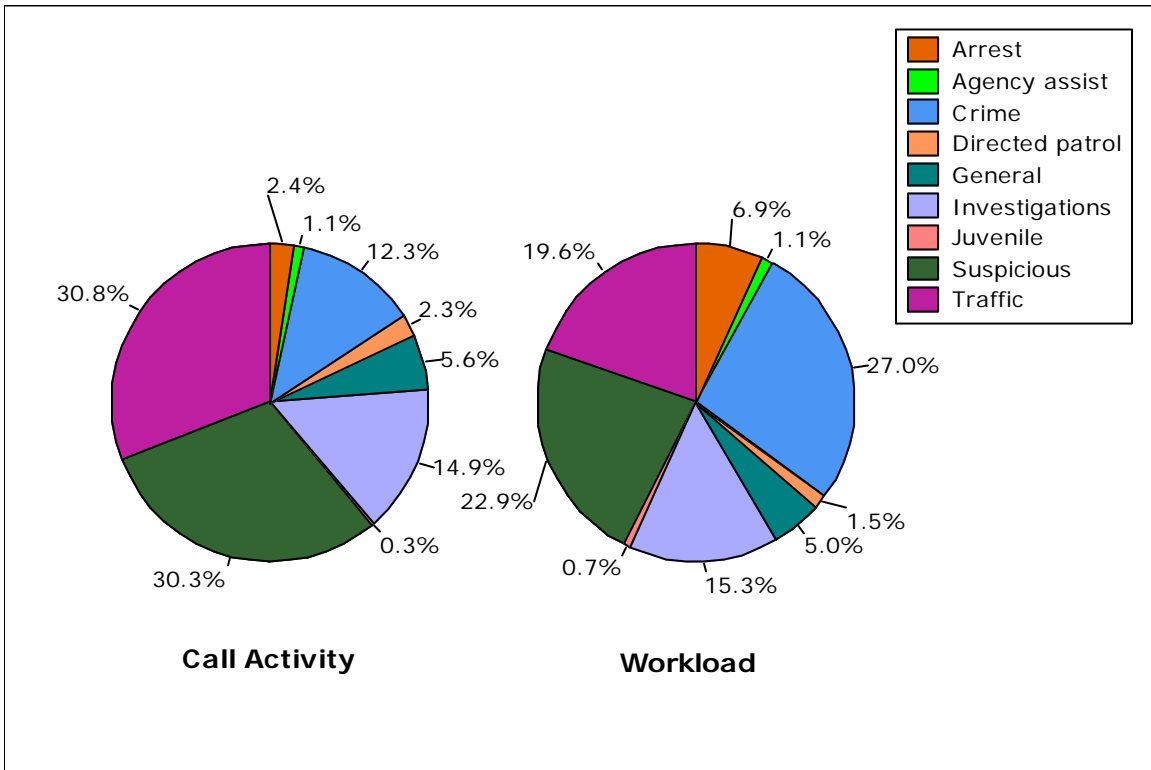
Category	Responding Units		
	One	Two	Three or More
Accidents	702	353	415
Alarm	105	1,749	525
Animal Calls	1,259	182	33
Assist Other Agency	126	106	90
Check/Investigation	767	2,589	863
Crime—Persons	487	237	515
Crime—Property	2,619	897	615
Directed Patrol	332	36	13
Disturbance	1,522	3,494	1,535
Juvenile	152	103	53
Miscellaneous	742	330	152
Prisoner—Arrest	90	178	170
Prisoner—Transport	116	54	7
Suspicious Person/Vehicle	1,424	2,070	908
Traffic Enforcement	4,759	945	263
<b>Total</b>	<b>15,202</b>	<b>13,323</b>	<b>6,157</b>

Note. Figure 8 and Table 8 include other-initiated calls.

Observations:

- The overall mean number of responding units was 1.5 for police-initiated calls and 1.8 for other-initiated calls.
- The mean number of responding units was a maximum of 2.8, for police-initiated calls involving crimes against persons.
- The number of responding units was also high for calls involving arrests, with an average of 2.3 units per call for police-initiated calls and 2.4 units for other-initiated calls.
- Slightly more calls involved one responding unit (44 percent) than two responding units (38 percent).
- Overall, more calls involved multiple units (56 percent) than a single unit.
- The largest group of calls with three or more responding units involved suspicious incidents.

**Figure 9. Percentage of Calls and Work-Hours, by Category, in August 2007**



*Note.* Calculations include only non-zero on-scene calls.

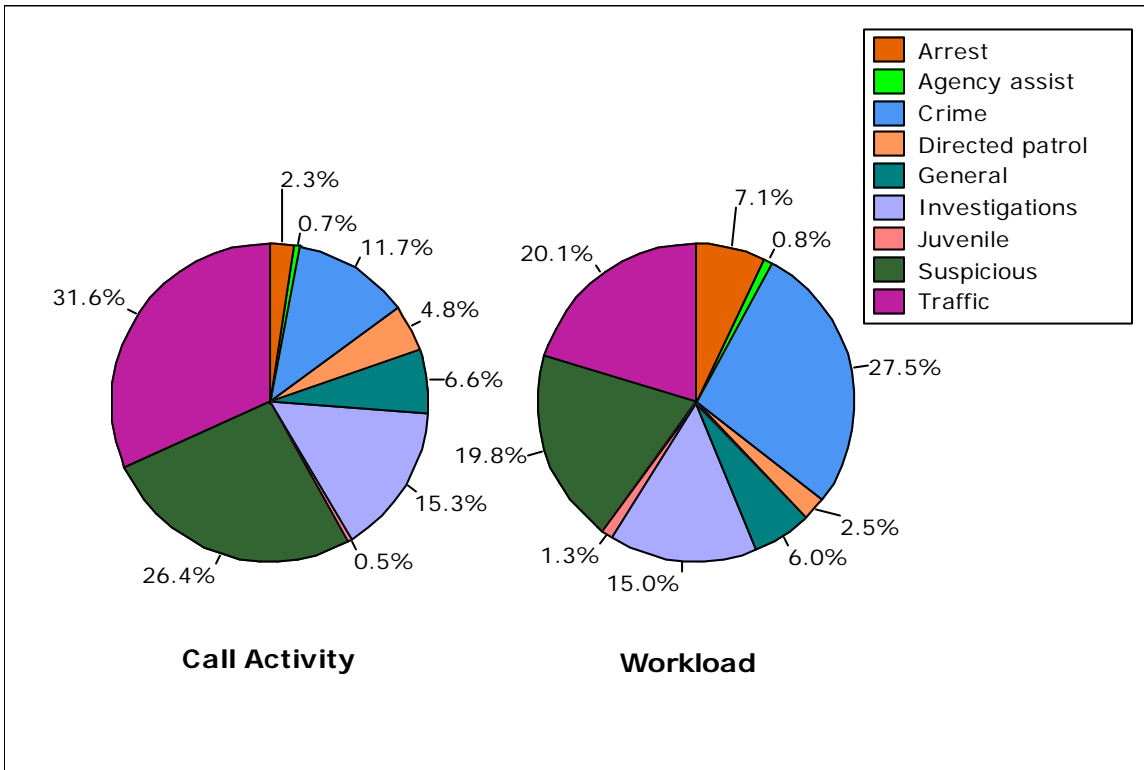
**Table 9. Calls and Work-Hours per Day, by Category, in August 2007**

Category	Per Day	
	Calls	Work-Hours
Arrest	3.1	5.1
Assist Other Agency	1.4	0.8
Crime	15.5	20.1
Directed Patrol	3.0	1.1
General Non-Criminal	7.1	3.7
Investigations	18.8	11.4
Juvenile	0.4	0.5
Suspicious Incident	38.3	17.0
Traffic	38.9	14.6
<b>Total</b>	<b>126.3</b>	<b>74.4</b>

Observations:

- Total calls were 126.3 per day, or 5.3 per hour.
- Total workload was 74.4 work-hours per day. This means that an average of 3.1 personnel per hour were busy responding to calls.
- Traffic-related events constituted 31 percent of calls but only 20 percent of workload.
- Crimes constituted 12 percent of calls but 27 percent of workload.
- Investigations, including premise checks, were 15 percent of calls and workload.
- Suspicious incidents were 30 percent of calls and 23 percent of workload.

**Figure 10. Percentage of Calls and Work-Hours, by Category, in February 2008**



*Note.* Calculations include only non-zero-on-scene calls.

**Table 10. Calls and Work-Hours per Day, by Category, in February 2008**

Category	Per Day	
	Calls	Work-Hours
Arrest	2.8	5.3
Assist Other Agency	0.9	0.6
Crime	14.1	20.4
Directed Patrol	5.8	1.8
General Non-Criminal	7.9	4.5
Investigations	18.5	11.1
Juvenile	0.6	1.0
Suspicious Incident	31.9	14.7
Traffic	38.2	15.0
<b>Total</b>	<b>120.8</b>	<b>74.3</b>

Observations:

- In February, the total calls and workload were slightly lower than they were in August.
- The total number of calls was 120.8 per day, or 5 per hour. This is 4 percent lower than the total number in August.
- The total workload was 74.3 work-hours per day, or 3.1 personnel per hour. This is practically identical to the workload in August.
- There were no significant differences in the percentage of calls by category between February 2008 and August 2007.

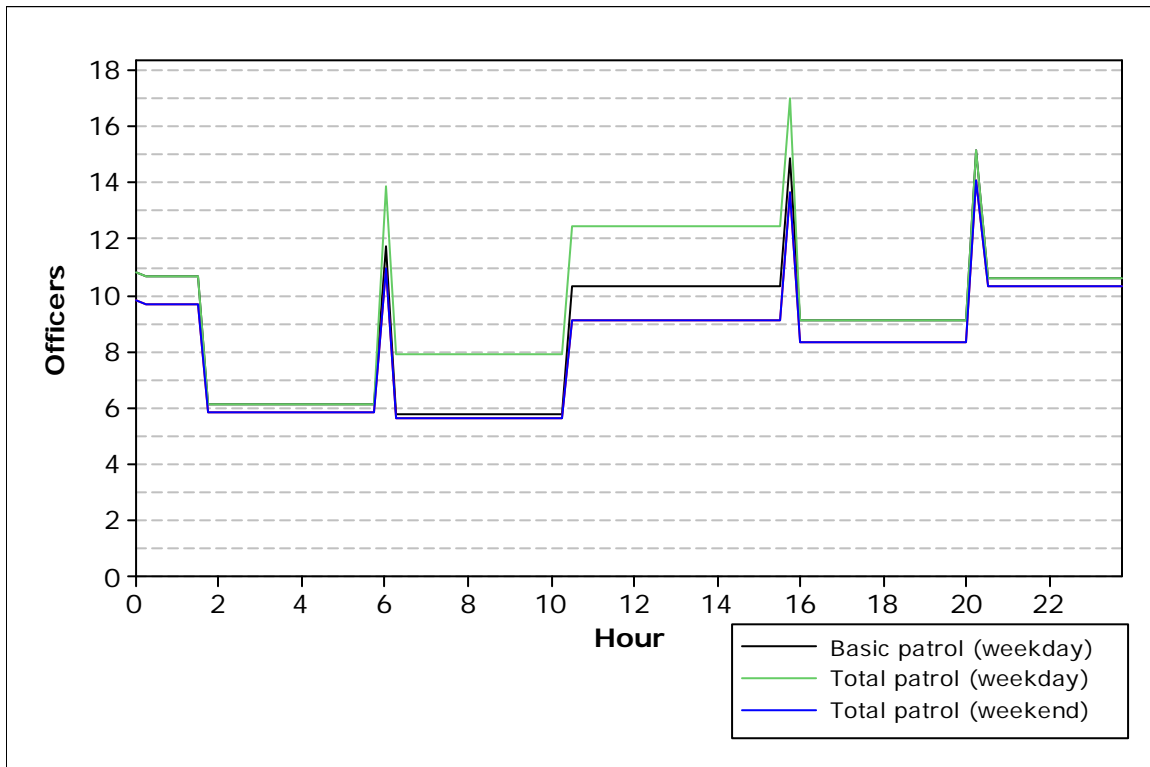
### **III. Deployment**

The department operates with four 10-hour shifts: starting at 8:15 PM (night shift), starting at 6 AM (morning shift), starting at 3:45 PM (evening shift), and starting at 10:30 AM (day shift). The department had regular patrol officers as well as additional officers performing patrol-related traffic enforcement duties. We did not include school resource officers in our analysis. The patrol unit included officers and supervisors. We included all officers and supervisors from the rank of sergeant and below in our analysis. Based upon the input of the police department, we assumed that patrol supervisors were on patrol 60 percent of their time.

The department deployed an average of 8.5 patrol officers during the 24-hour day in August 2008 and 8.7 patrol officers in February 2008. When including the additional units, the department deployed an average of 9.2 and 9.5 officers, respectively, during the 24-hour day in August 2008 and February 2008. The deployment varied slightly by season and a bit more between weekends and weekdays. It varied much more by time of day. Based upon shift schedules, deployment naturally peaked where the shifts overlap for 15 minutes, from 6:00 AM to 6:15 AM, from 3:45 PM to 4:00 PM, and from 8:15 PM to 8:30 PM.

We normally compare the exact same month's deployment to its workload. However, the police department initially supplied the police patrol schedule for August 2008. We double-checked with the department which verified that the schedule hardly differed from 2007 to 2008. We compared the police deployment schedule for August 2008 against the workload in August 2007.

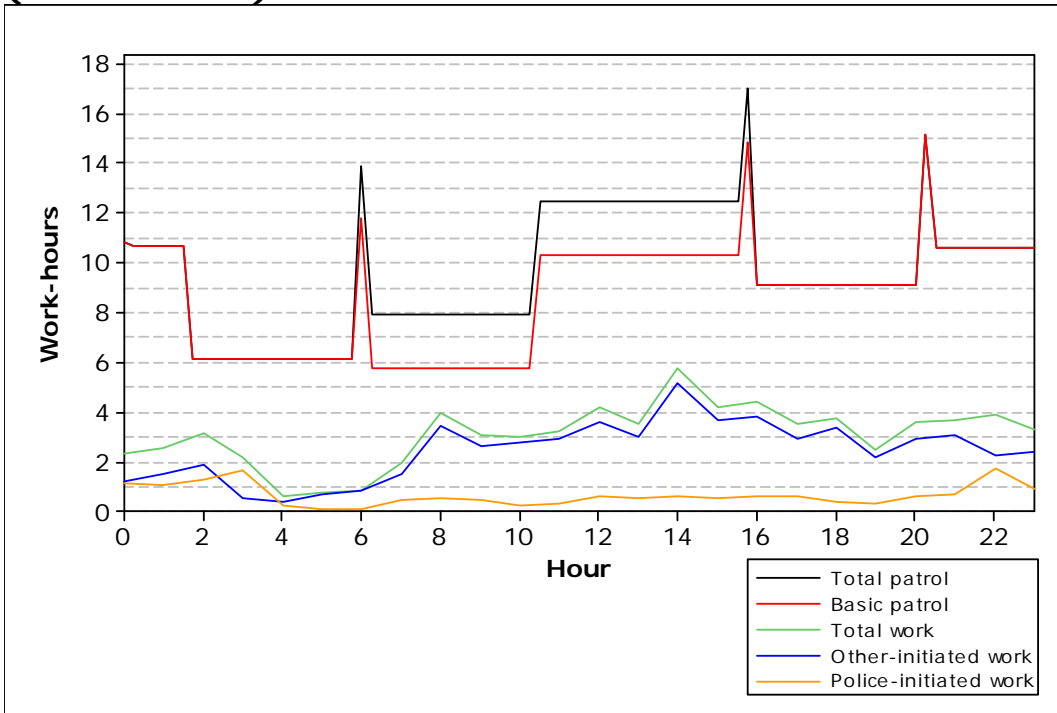
**Figure 11. Deployed Officers, by Day of Week, in August 2008**



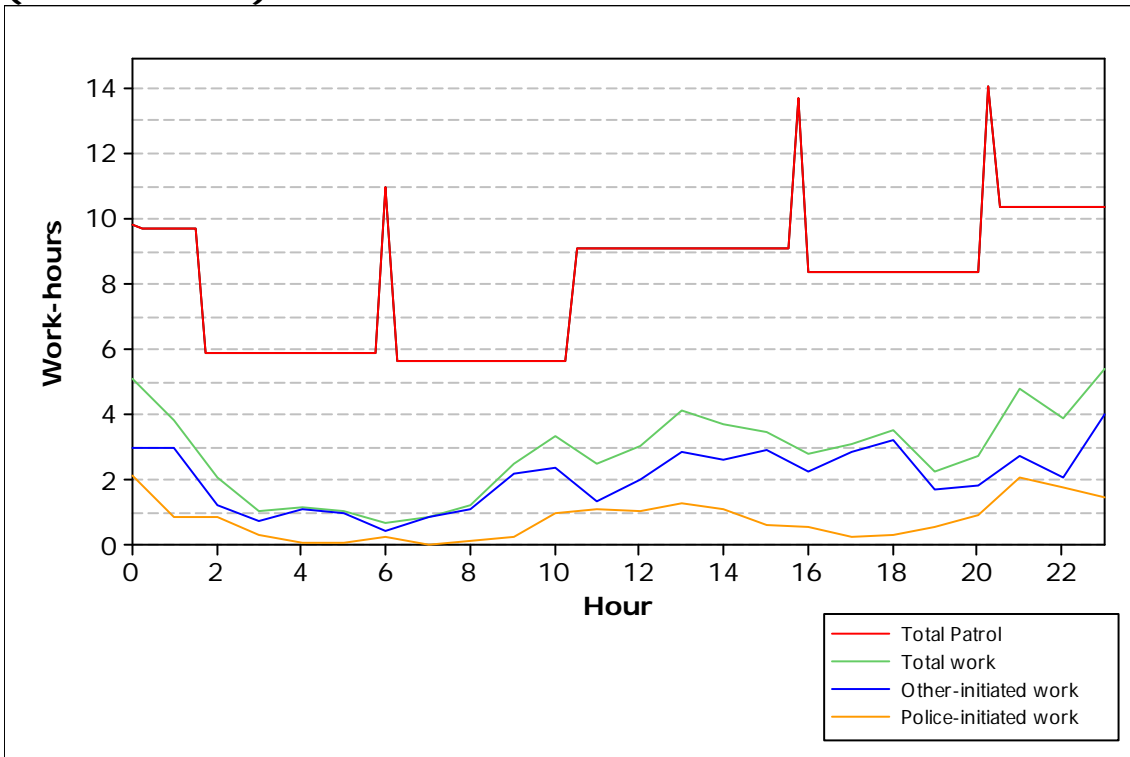
Observations:

- The average patrol deployment was approximately 9 patrol officers during the week and 8 on weekends.
- During the week, deployment reached as high as 15 officers and dropped as low as 6 officers.
- On weekends, deployment reached as high as 14 officers and dropped as low as 6 officers.
- There were fewer than 6 regular patrol officers between 2 AM and 10 AM, but on weekdays, they were supplemented by an average of 2 additional officers.
- When traffic units were added, the average deployment rose by 0.9 on weekdays, but did not rise on weekends.
- During the week, the average number of total deployed officers reached a high of 17 officers during the day.

**Figure 12. Deployment and Workload—Weekdays, August (2007 & 2008)**



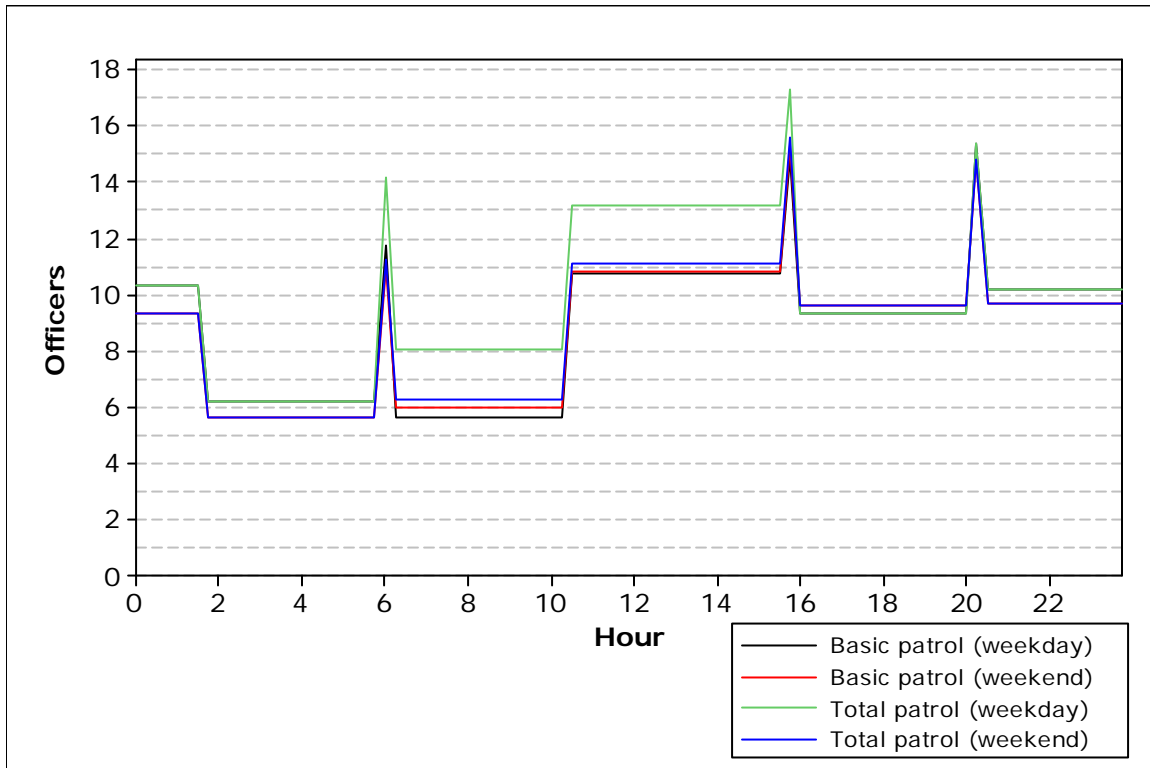
**Figure 13. Deployment and Workload—Weekends, August (2007 & 2008)**



Observations:

- During the week, patrol workload averaged 3.2 personnel per hour.
- This was 33 percent of the total deployment, meaning that patrol officers spent 33 percent of their time on patrol-related activities.
- During the week, patrol workload dropped as low as 6 percent of total deployment between 6 AM and 7 AM. It was as high as 55 percent of total deployment between 2 AM and 3 AM.
- On weekends, patrol workload averaged 2.8 personnel per hour. This was 35 percent of total deployment.
- On weekends, the patrol workload dropped as low as 6 percent of total deployment between 6 AM and 7 AM and rose as high as 60 percent of total deployment between 10 AM and 11 AM.

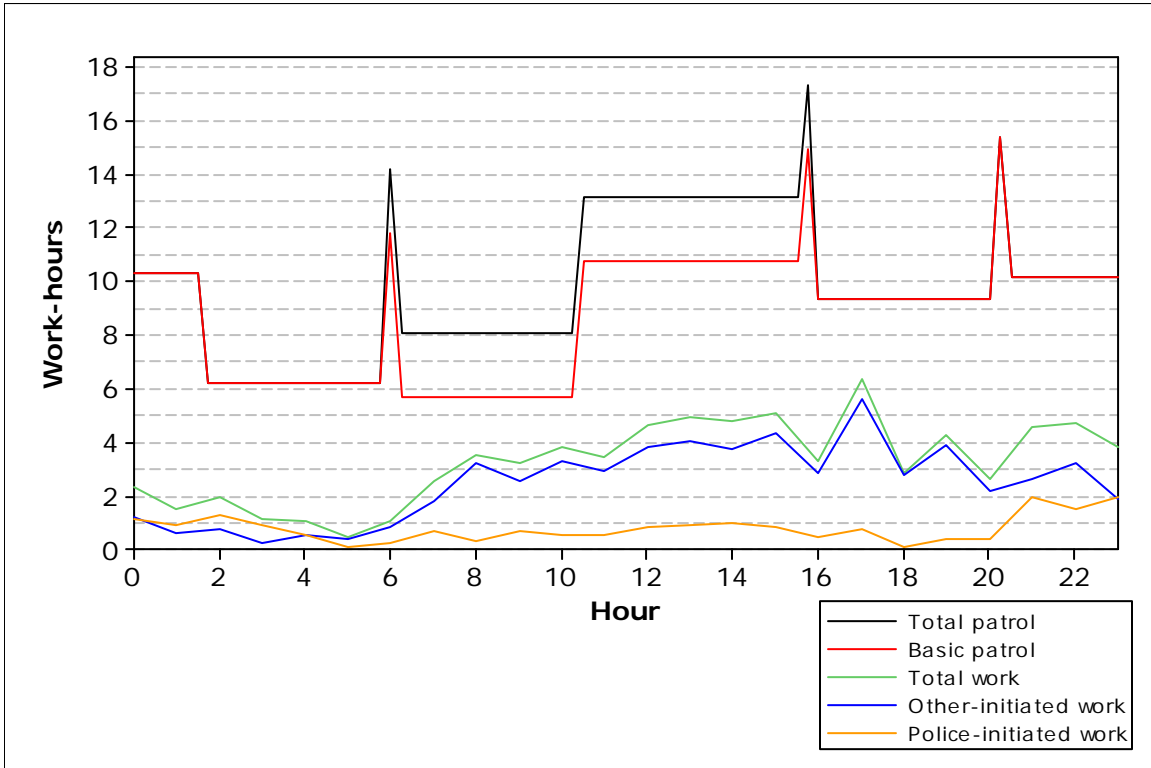
**Figure 14. Deployed Officers, by Day of Week, February 2008**



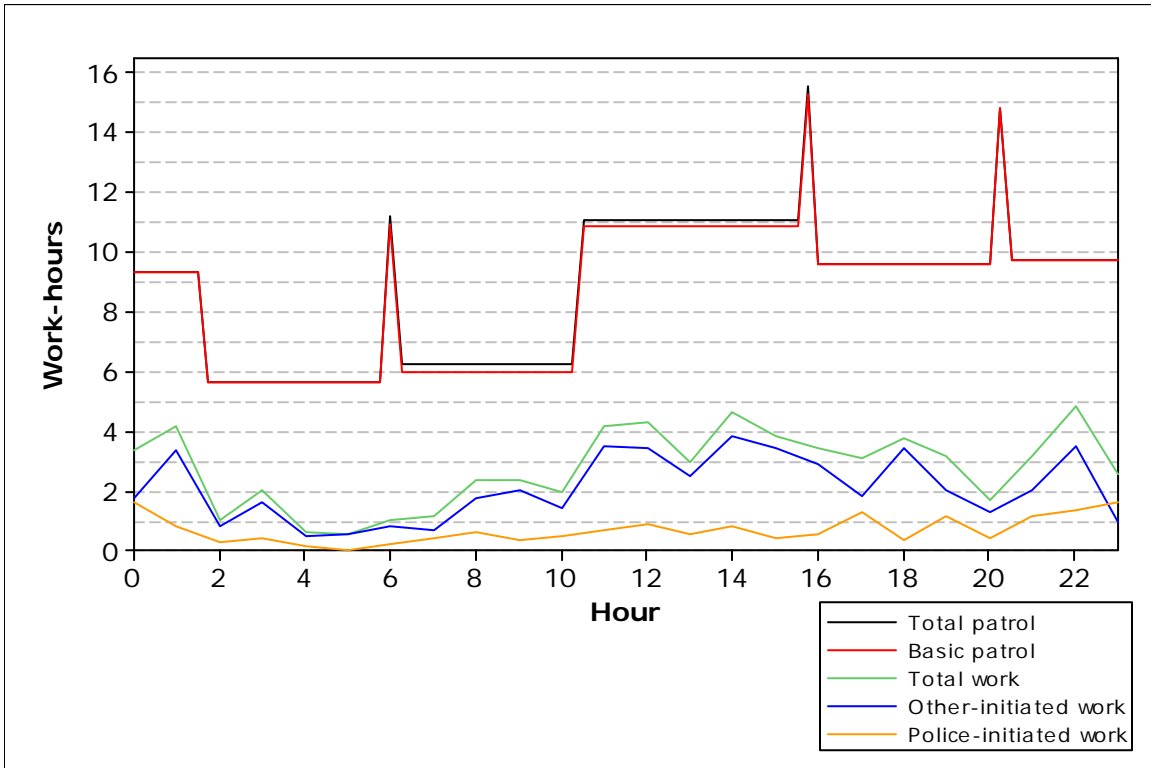
Observations:

- The number of officers deployed was slightly higher in February than it was in August.
- An average of 9 officers was deployed both during the week and on weekends.
- Basic deployment varied between 6 and 15 officers during the week and on weekends.
- When traffic units were added, the deployment rose noticeably during the week and barely on the weekends.
- Total deployment reached a maximum of 17 officers during the week and 16 officers on weekends.
- The average total deployment was 10 officers during the week and 9 officers on weekends.

**Figure 15. Deployment and Workload—Weekdays, February 2008**



**Figure 16. Deployment and Workload—Weekends, February 2008**



Observations:

- During the week, patrol workload averaged 3.2 personnel per hour. This was 33 percent of deployment, meaning that patrol officers spent 33 percent of their time on patrol-related activities.
- During the week, patrol workload dropped as low as 7 percent of total deployment between 5 AM and 6 AM and rose as high as 68 percent of total deployment between 5 PM and 6 PM.
- On weekends, patrol workload averaged 2.7 personnel per hour. This was 31 percent of total deployment.
- On weekends, the patrol workload dropped as low as 9 percent of total deployment between 6 AM and 7 AM and rose as high as 50 percent of total deployment between 10 PM and 11 PM.

Figure 17. Out-of-Service Workload—Weekdays, August 2007

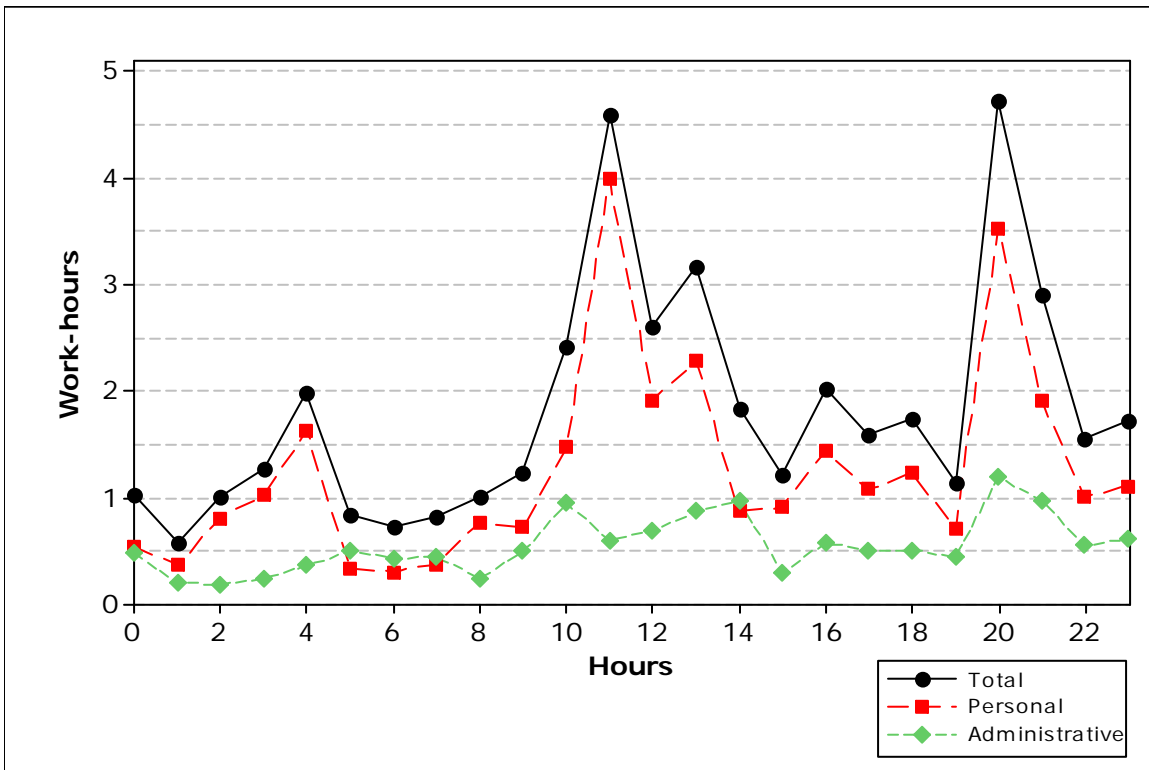


Figure 18. Out-of-Service Workload—Weekends, August 2007

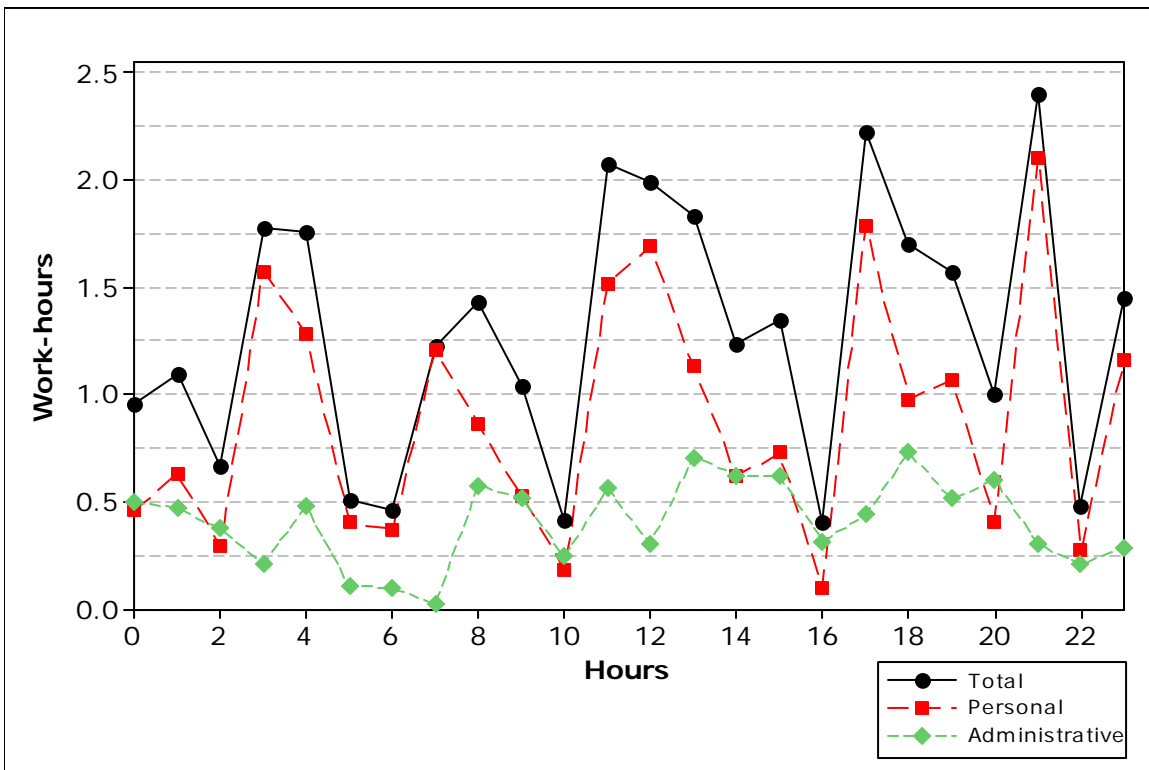


Figure 19. Out-of-Service Workload—Weekdays, February 2008

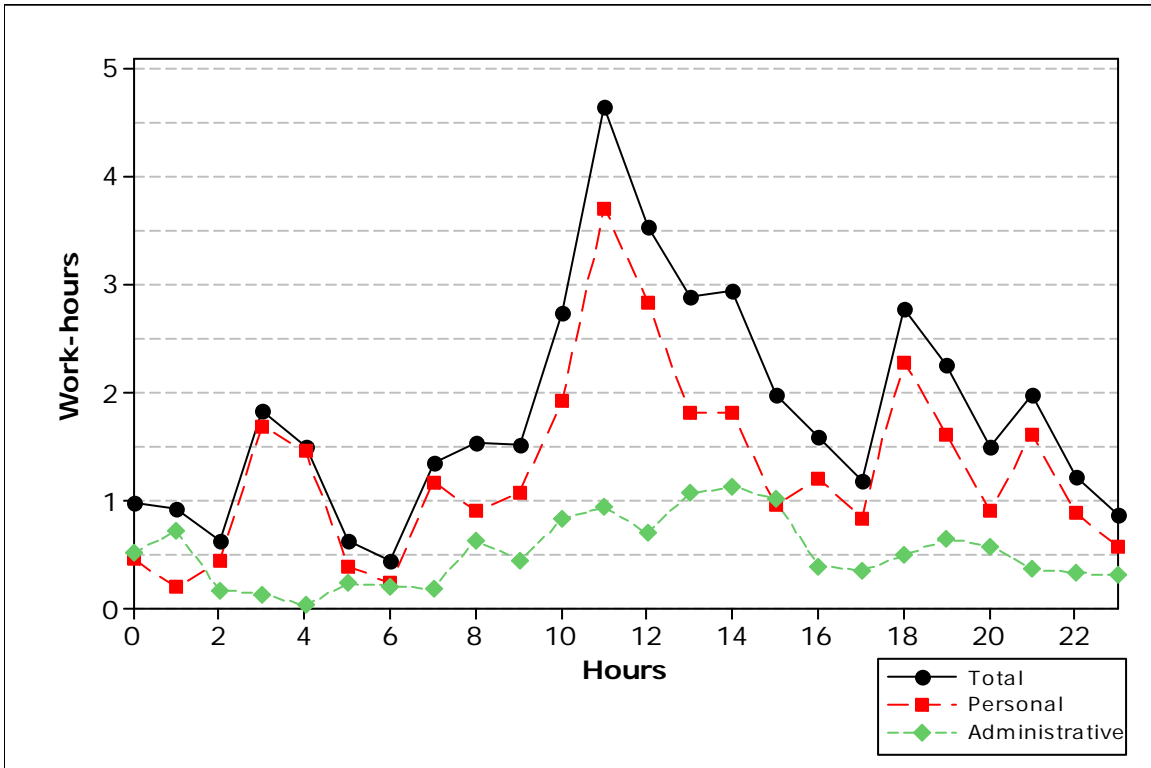
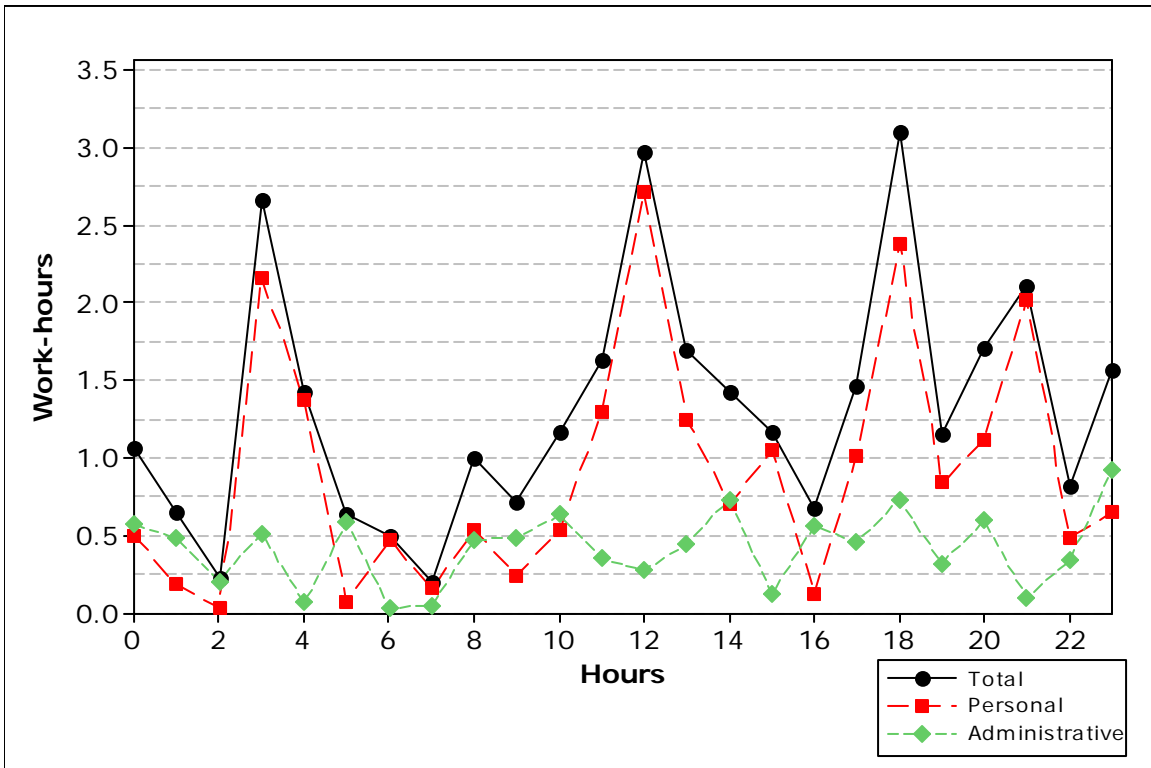


Figure 20. Out-of-Service Workload—Weekends, February 2008



#### Observations:

- We analyzed records of units listed as out of service.
- In August, an average of 68 instances of patrol units was out of service daily.
- In February, an average of 69 instances of patrol units was out of service daily.
- In August, during the week, out-of-service calls averaged 43.8 man-hours daily, or 1.8 personnel per hour.
- In February, during the week, out-of-service calls averaged 43.5 man-hours daily, or 1.8 personnel per hour.
- In August, on weekends, out-of-service calls averaged 31 work-hours daily, or 1.3 personnel per hour.
- In February, on weekends, out-of-service calls averaged 31.5 man-hours daily, or 1.3 personnel per hour.
- In August, during the week, out-of-service workload rose above 4.5 work-hours between 11 AM and noon and between 8 PM and 9 PM.
- In February, during the week, out-of-service workload rose above 4.5 work-hours between 11 AM and noon.
- In August, on weekends, out-of-service workload consistently averaged below 2.4 work-hours. In February, on weekends, out-of-service workload consistently averaged below 3.1 work-hours.
- *Approximately 0.6 personnel per hour, listed as on administrative out-of-service work, were actually conducting "follow-ups" related to actual calls for service.*
- The three peaks in out-of-service workload correspond to meal breaks associated with the different patrol shifts.

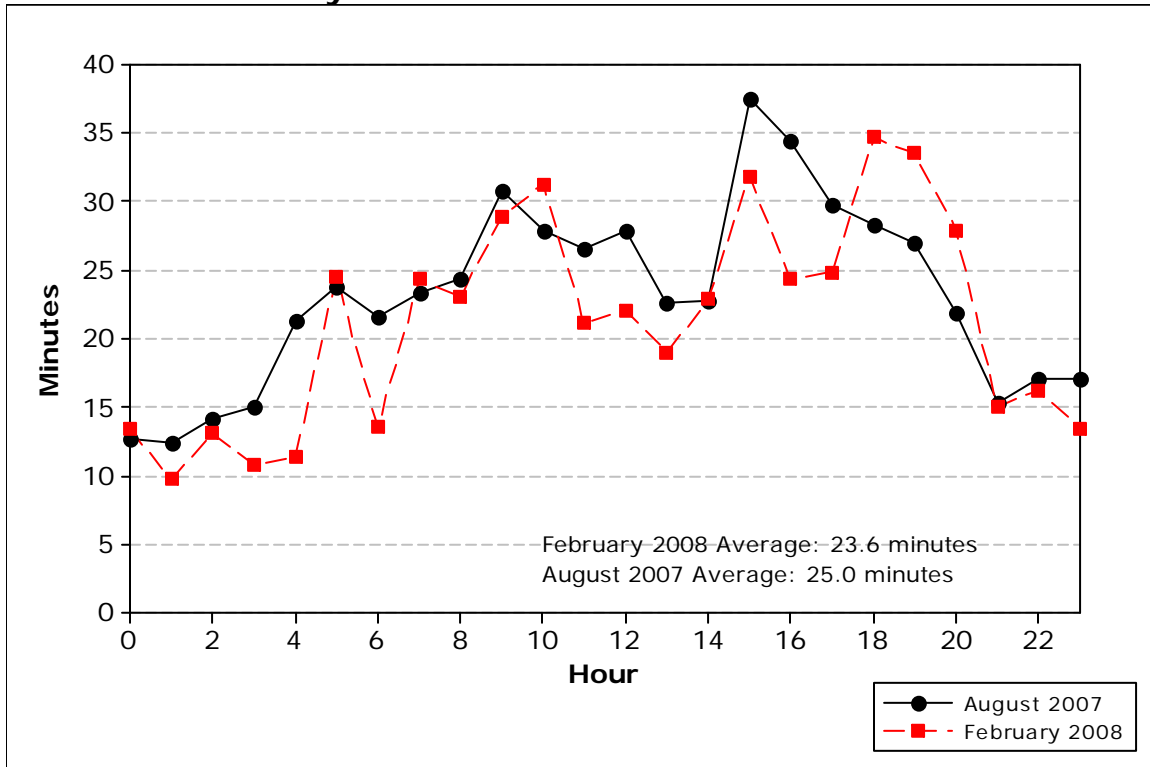
## **IV. Response Times**

We analyzed the response times to various types of calls, separating the durations into dispatch time and travel time. We begin the discussion with statistics that include all calls combined. Later, we report on the much lower response times for high-priority calls. We analyzed several types of calls to determine whether response times varied by call type. To better understand the response time issue, the study team calculated the cumulative distribution function (CDF) of response time for three types of calls. We calculated the dispatch delay, travel time, and the total response time.

Before presenting the specific figures and tables, we summarize all of the observations. We started with 3,729 calls for August 2007 and 3,599 calls for February 2008. We limited our analysis to calls that were other-initiated with non-zero-on-scene times. We also encountered a number of calls without arrival times that we were forced to exclude from our analysis due to lack of information. This left 2,234 calls for August 2007 and 1,974 calls for February 2008.

After providing the overall statistics, we present an analysis based on the priority codes provided within the data. We focus on high-priority calls for the entire year. The response times for these calls are significantly shorter than the overall average.

**Figure 21. Average Response Time, by Hour of Day, for August 2007 and February 2008**



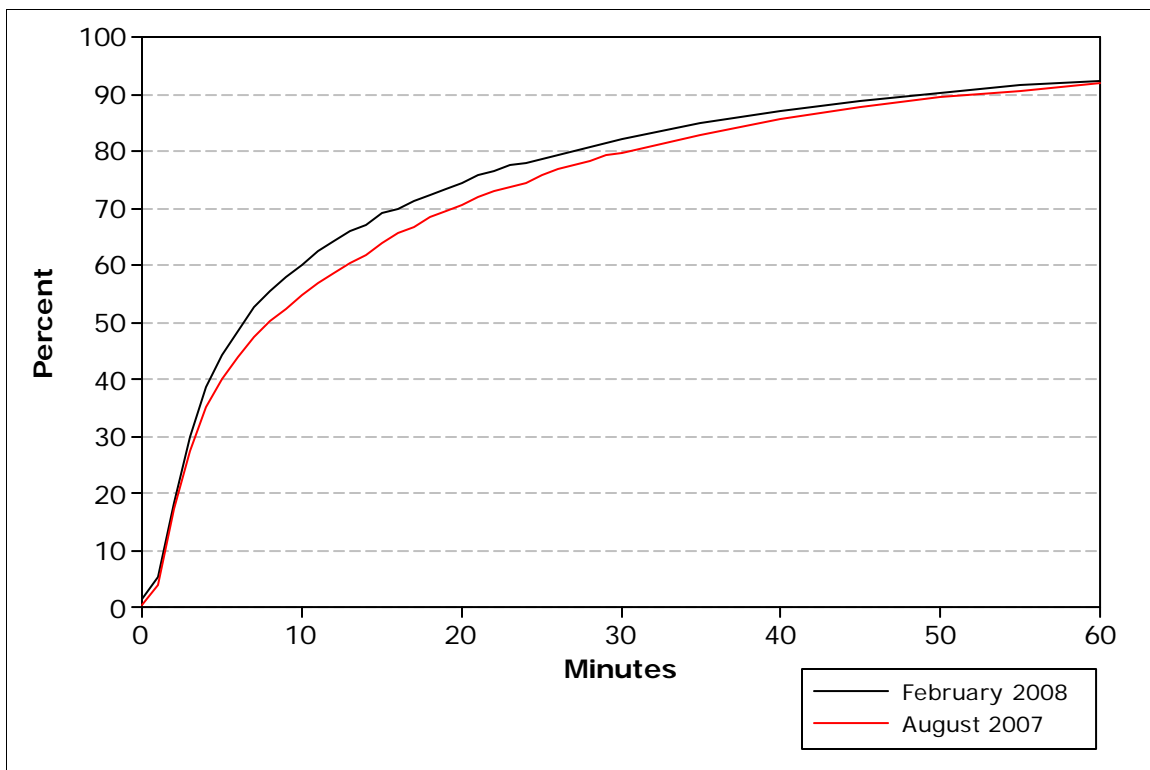
**Observations:**

- Average response times vary significantly by hour of day.
- The overall average was slightly shorter in February than it was in August.
- In August, the longest response times were between 3 PM and 4 PM, with an average of 37.5 minutes. These were primarily due to large dispatch delays. The shortest response times were between 1 AM and 2 AM, with an average of 12.4 minutes.
- In February, the longest response times were between 6 PM and 7 PM, with an average of 34.7 minutes. The shortest response times were between 1 AM and 2 AM, with an average of 9.8 minutes.

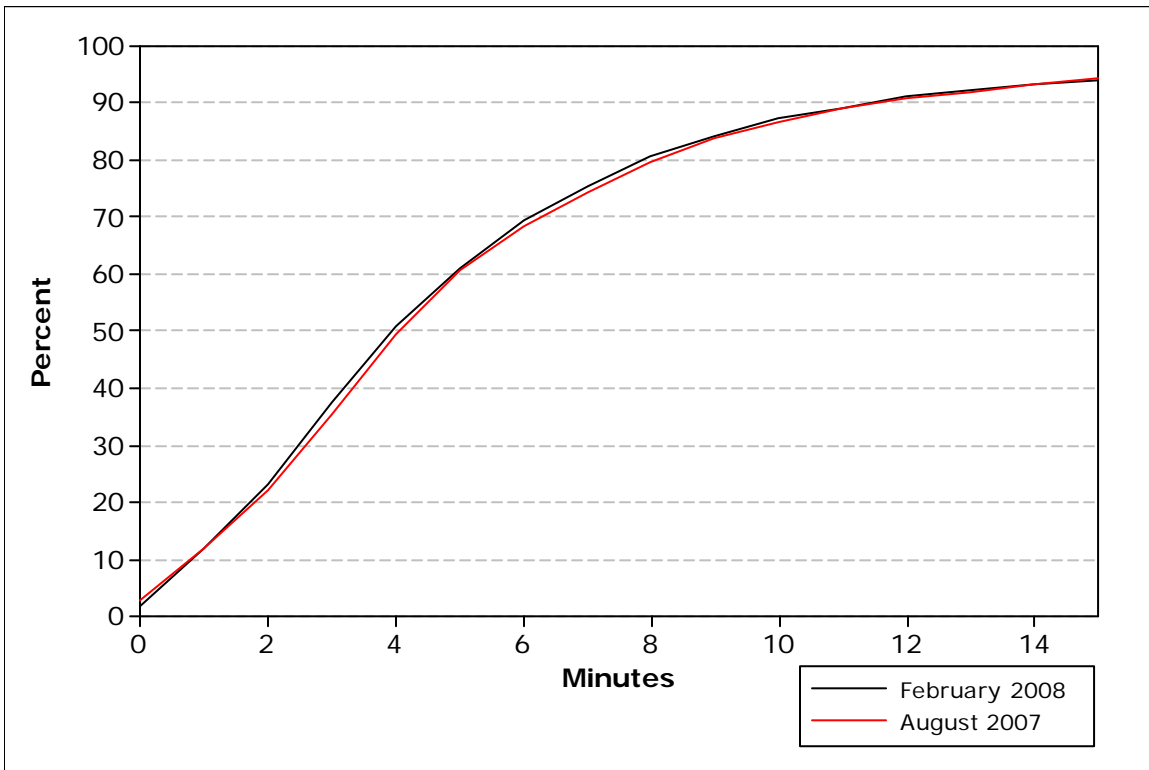
### A. Reading the Cumulative Distribution Function (CDF) Chart

The vertical axis is the probability, or percentage, of calls. The horizontal axis is the time of dispatch delay, travel time, or total response time. For example, approximately 70 percent of calls in August experienced a dispatch delay of 20 minutes or less. (The 70 percent line intersects the red curve at the 20-minute mark.) A similar percentage of calls in February experienced a dispatch delay of 16 minutes or less. When comparing different CDF lines, a higher graph represents a larger percentage of low values. Figure 22 shows that the dispatch delay is a bit shorter in February 2008 than it was in August 2007. Figure 23 shows that the travel times are similar in February and August.

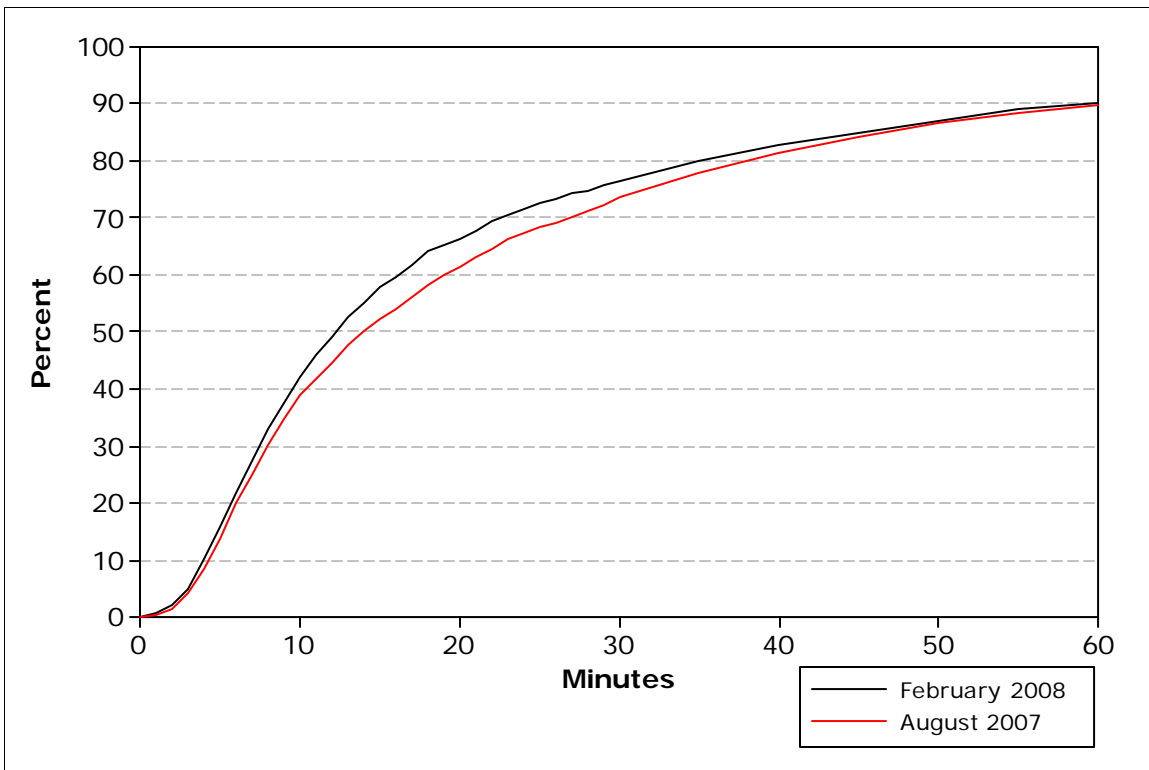
**Figure 22. Dispatch Delay Cumulative Distribution Function**



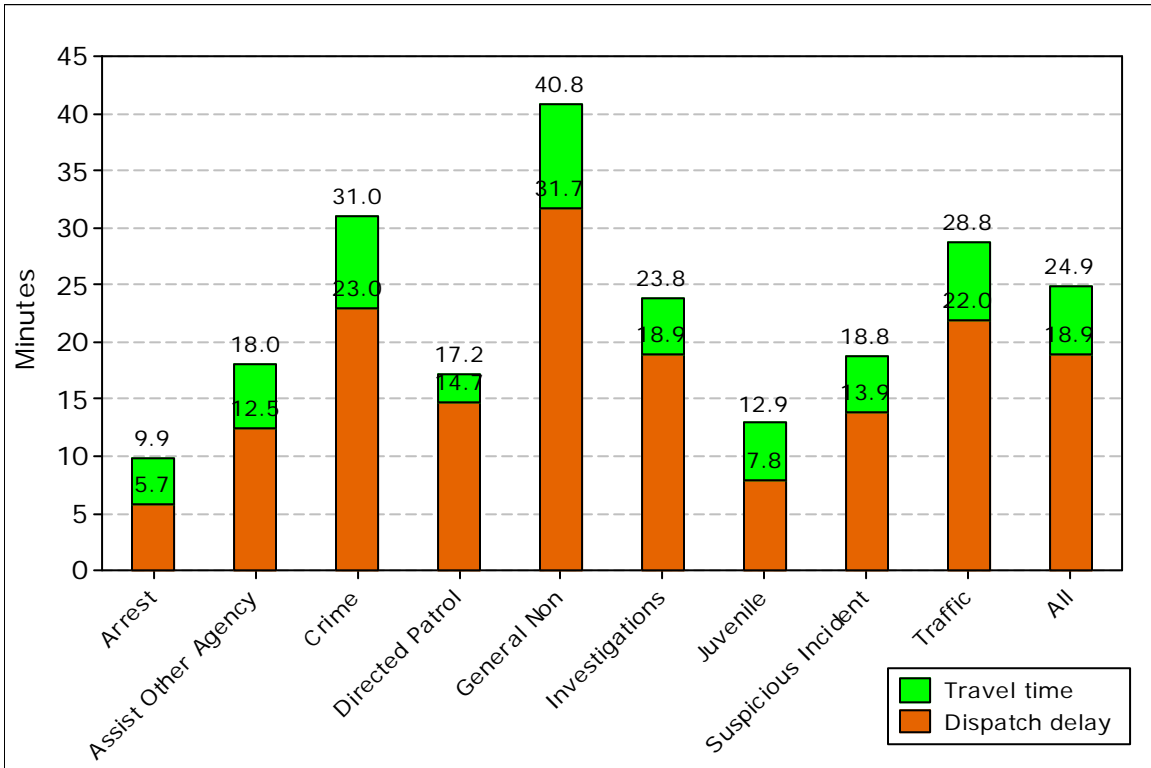
**Figure 23. Travel Time Cumulative Distribution Function**



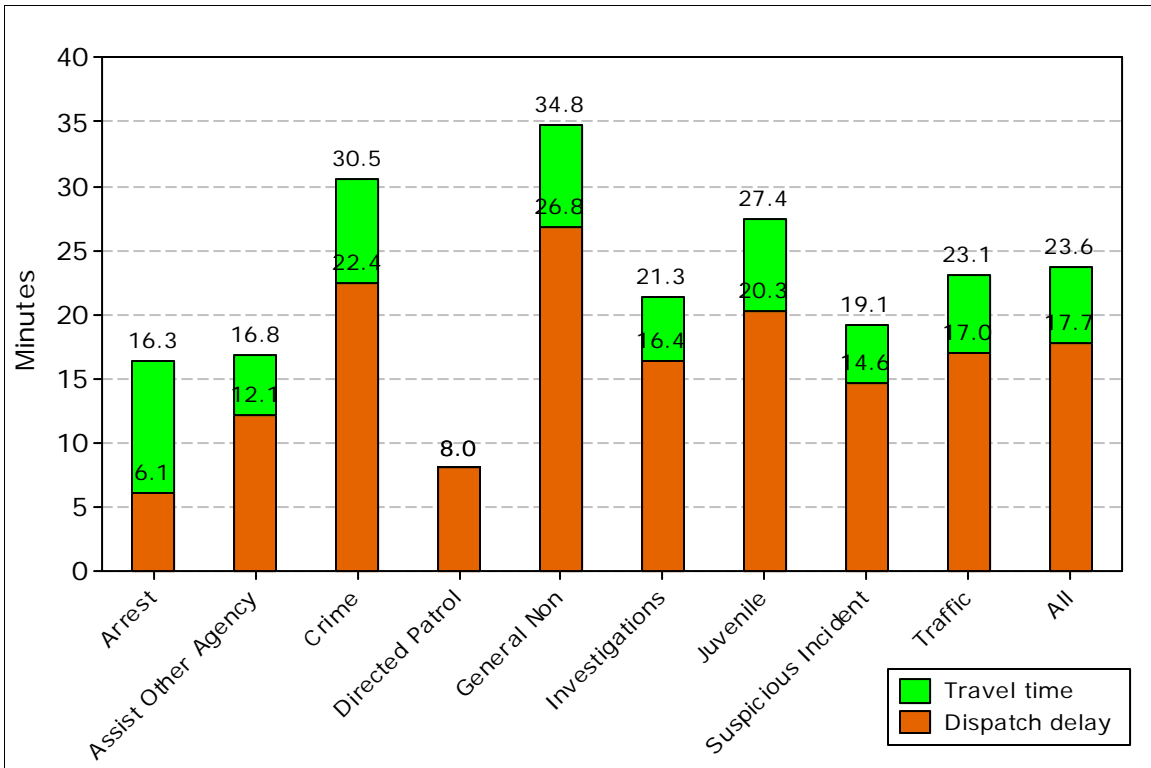
**Figure 24. Response Time Cumulative Distribution Function**



**Figure 25. Average Responses in August 2007**



**Figure 26. Average Response Times in February 2008**



**Table 11. Average Response Time Components, by Category**

Category	August 2007			February 2008		
	Dispatch	Travel	Response	Dispatch	Travel	Response
Arrest	5.7	4.1	9.9	6.1	10.2	16.3
Agency Assist	12.5	5.5	18.0	12.1	4.6	16.8
Crime	23.0	8.1	31.0	22.4	8.1	30.5
Directed Patrol	14.7	2.6	17.2	8.0	0.0	8.0
General	31.7	9.1	40.8	26.8	8.0	34.8
Investigations	18.9	4.9	23.8	16.4	5.0	21.3
Juvenile	7.8	5.1	12.9	20.3	7.1	27.4
Suspicious	13.9	4.9	18.8	14.6	4.6	19.1
Traffic	22.0	6.8	28.8	17.0	6.1	23.1
<b>Total</b>	<b>18.9</b>	<b>6.0</b>	<b>24.9</b>	<b>17.7</b>	<b>5.9</b>	<b>23.6</b>

**Table 12. 90th Percentiles for Components by Category**

Category	August 2007			February 2008		
	Dispatch	Travel	Response	Dispatch	Travel	Response
Arrest	16.4	12.3	22.3	18.9	32.0	44.8
Agency Assist	41.8	9.9	57.2	39.0	8.4	41.1
Crime	64.4	15.7	75.9	65.1	16.2	79.8
Directed Patrol	43.6	7.2	50.8	8.0	0.0	8.0
General	102.6	18.4	111.7	107.1	12.6	117.2
Investigations	50.7	9.6	57.2	42.9	9.2	50.2
Juvenile	20.9	8.7	29.5	67.2	14.3	71.4
Suspicious	36.0	9.1	44.5	39.1	8.0	47.4
Traffic	64.5	13.0	76.0	48.4	13.8	55.5
<b>Total</b>	<b>52.3</b>	<b>11.5</b>	<b>60.8</b>	<b>49.9</b>	<b>11.3</b>	<b>59.6</b>

## Observations:

- Response times varied significantly by call category.
- In August, average response times were as short as 10 minutes (for arrests) and as long as 41 minutes (for general non-criminal calls).
- In February, average response times were as short as 8 minutes (for directed patrols) and 16 minutes (for arrests) and as long as 35 minutes (for general non-criminal calls).
- Average response times for crimes exceeded 30 minutes for both months.
- Average response times increased significantly from August 2007 to February 2008 in only two categories: juvenile calls and arrests.
- In August, average dispatch delays varied between 6 minutes (for arrests) and 32 minutes (for general non-criminal calls).
- In February, average dispatch delays varied between 6 minutes (for arrests) and 27 minutes (for general non-criminal calls).
- In August, 90th-percentile values for response times were as short as 22 minutes (for arrests) and exceeded an hour in three categories.
- In February, 90th-percentile values for response times were as short as 8 minutes (for directed patrols) and exceeded an hour in three categories.

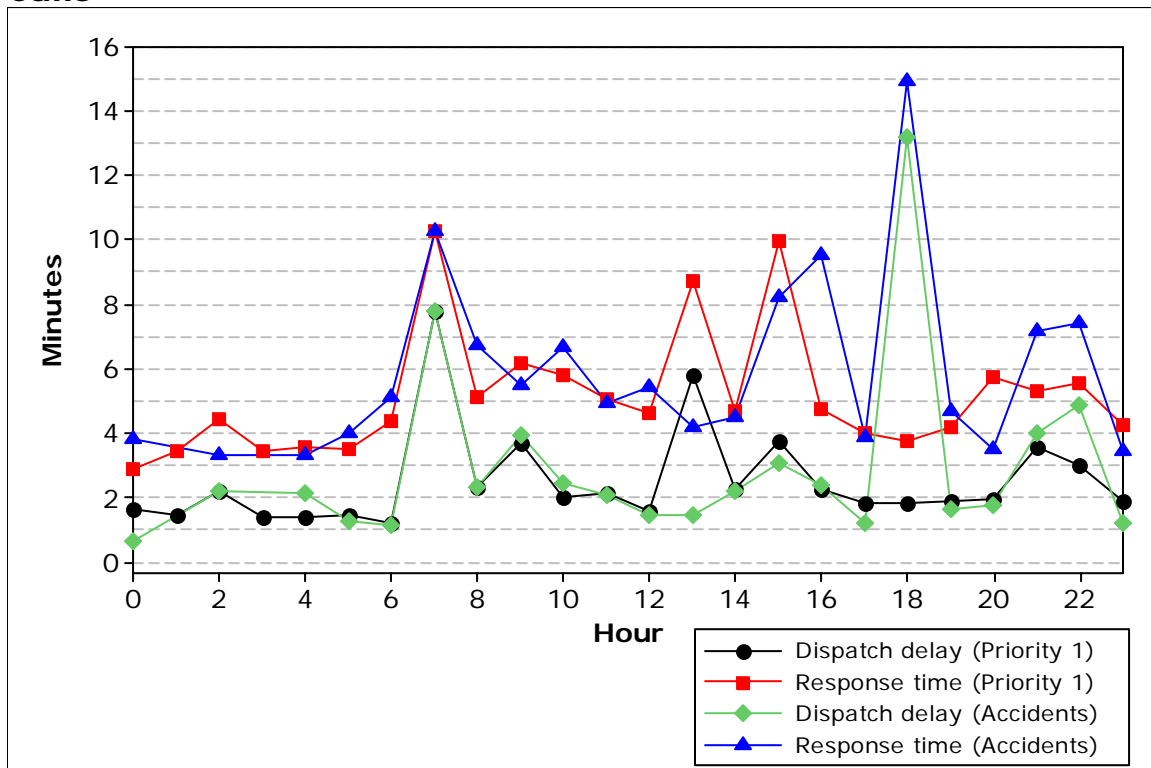
## B. High-Priority Calls

A priority code from 1 to 4 was assigned to each call by the dispatch center. Table 13 shows that average response times varied by priority. A separate category for accidents with injuries is also included. These averages included all non-zero on-scene other-initiated calls throughout the entire year (July 2007 to June 2008).

**Table 13. Average Dispatch, Travel, and Response Times, by Priority**

Priority	Dispatch	Travel	Response	Total calls
1	2.5	2.9	5.4	249
2	14.5	5.2	19.7	26,277
3	17.9	7.4	25.4	1,623
4	23.0	6.8	29.8	2,152
<b>Total</b>	<b>15.1</b>	<b>5.4</b>	<b>20.6</b>	<b>30,301</b>
Accident With Injuries	3.2	3.5	6.7	143

**Figure 27. Average Response Times, by Hour for High-Priority Calls**



Observations:

- Response times varied significantly by call priority.
- Priority 1 calls and accidents had much shorter response times, 5.4 and 6.7 minutes, respectively, compared to the overall average of 20.6 minutes.
- The average response time for priority 1 calls varied by time of day, from 2.8 minutes between midnight and 1 AM to 10.3 minutes between 7 AM and 8 AM.
- The average response time for accidents varied by time of day, from 3.3 minutes between 2 AM and 5 AM to 14.9 minutes between 6 PM and 7 PM.
- Hourly samples for priority 1 calls and accidents were relatively small. *These results should be used with caution.*
- There were no accidents with valid other-initiated response times between 1 AM and 2 AM and between 3 AM and 4 AM.

**PART II**

**Police Department  
Operations Analysis  
Alameda, California  
April 2009**

**NOT FOR RELEASE OR  
PUBLICATION**

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## **I. Introduction**

## **II. Overview**

## **III. Operations Analysis**

- A. Organizational Structure**
- B. Communications**
- C. Patrol Operations**
- D. Investigations Division**
- E. Animal Shelter/Animal Control**
- F. Jail Operations**
- G. Property and Evidence**
- H. Crime Scene**
- I. Training and Personnel**
- J. Traffic Enforcement**
- K. Internal Affairs**
- L. Policies and Procedures**

## **IV. Summary**

## **II. Overview**

The on-site visit, a review of departmental policies and procedures, and interviews with individual officers, members of police management, and elected officials led us to conclude that there is a limited opportunity to reduce some costs within the police department and that there are no significant savings to be had without seriously affecting the current performance of the agency.

### **III. Operations Analysis**

#### **A. Organizational Structure**

The department currently includes 99 sworn officers and an additional 44 civilians. The senior management of the organization includes the chief of police and two captains who are assigned as bureau commanders. The bureau commanders are in charge of the bureau of operations and the bureau of services. There are also six lieutenants: four who are assigned as watch commanders, one who is assigned to the technical services unit, and one who is assigned to investigations. There are also 17 sergeants assigned as supervisors throughout the department.

A review of the responsibilities of all of the supervisory personnel revealed a well-managed, highly motivated group of police officers. All members of the department, from the chief of police down to the patrol officers on the street, understand their mission and the goals and objectives of the department. The organization within the department seems to work well.

We believe that the division of the department into two bureaus is appropriate and, frankly, necessary. We note that many police departments of this size operate three divisions, and we believe that this current alignment is the most cost-effective and organizationally effective design.

The two captain positions are justified and needed. These two positions have wide-ranging responsibilities and report directly to the chief of police. One of them must fill in as acting chief of police while the chief is on leave or out of the office. We note that the rank of these positions is lower than what would typically be found in an

organization of this size for people with similar duties. While the addition of a deputy chief may be warranted in more economically favorable conditions, we would not recommend the creation of this position at this time.

The lieutenant positions also are well justified in that they have important responsibilities and, in fact, are the highest-ranking officers on duty during nights and weekends, thereby being responsible for the entire operation of the department. However, we believe that one lieutenant's position assigned to operations can be eliminated, as described below.

The number of sergeant positions raises concern. Having 17 sergeants in an organization of this size is unusual. There are sergeant positions in the organization that could be handled by a lower-ranking officer.

### **Recommendation #1**

Reducing the number of sergeants will streamline operations and cut down on expenses. Refer to a memorandum to the city manager written by the chief of police, dated October 21, 2008. Option #1A and Option #7 identify two sergeant positions that should be reviewed and eliminated.

A review of the lieutenant positions reveals the possibility of eliminating one of them. We recommend that the four watch commander positions be left intact. We also feel that the detective lieutenant should not be considered for elimination. The sole operations lieutenant seems to be the only lieutenant position that could be eliminated without a serious negative impact on supervision. In the event that the operations

lieutenant (who appears to have some traffic supervision responsibilities) is eliminated, the supervision of this unit could be divided among the watch commanders. We feel that the sergeant assigned to the traffic unit could handle these supervising responsibilities.

## **B. Communications**

The communications center has five console positions. All 911 calls originating in the city are received and dispatched by the center. There are three communications personnel on duty per shift. One primary position dispatches and monitors the status screens. Two call takers handle incoming calls and other responsibilities of the shift.

The communications center provides live dispatch to the officers on the street. The system can dispatch through the officers' mobile data terminal when the need arises. The equipment in the communications center works well; very few concerns were expressed by the staff members who were interviewed. During our visit to the center and the ride-along in the police vehicle, no problems were observed. The equipment in the center is approximately 18 years old. The location of the communication center within the building is excellent: removed from public areas but easily accessible to employees requiring entry. The staffing level for the unit requires routine overtime to adequately staff the center. The police department has used more than 2,600 hours of overtime to fill the vacancies created by staff-member absences.

Officers in the police vehicles have mobile data terminals. The units work well but do not allow officers to write reports and directly access the records system. The reports can only be typed in the police car.

The report is then taken to the police station, where is it downloaded and printed. The printed copy is then signed by a supervisor and later filed by hand into the system.

### **Recommendation #2**

The department should begin working on a plan to update the communications equipment. This should include the equipment necessary to allow reports to be written on mobile data terminals and submitted directly to the records management system.

## **C. Patrol Operations**

The uniform patrol division has a total authorized complement of 61 supervisors and officers. The division is divided into four platoons, with a lieutenant commanding each one. The department deploys these platoons on a 10-hour-shift schedule. The overlaps in the shifts are used for directed patrol purposes and to allow in-service training without utilizing overtime. The individual officers we spoke with like the 10-hour shifts and indicated that they prefer this arrangement to any other shift schedule. The command staff members also indicated a preference for this arrangement, as they work the 10-hour work schedule, too. We note, however, that the 10-hour shift restricts the department's ability to realign deployment with workload.

The uniformed officers we interviewed indicated great pride in their department and in providing a high level of service that their residents expect and appreciate. There also seemed to be a department-wide understanding of the current difficult economic times and how it might impact their ability to continue performing their duties as they have in the past.

A review of the uniform patrol division's equipment did not reveal any deficiencies that would prevent the officers from performing their duties. The officers who were viewed were well groomed and properly uniformed, maintained a professional appearance, and were well equipped. The officers' firearms, uniforms, computers, and other equipment seemed in good order and well maintained. Many of the police vehicles currently on the road were older Ford Crown Victoria models. These vehicles have remained in service and have higher mileage than the department's police vehicles in the past. However, the vehicles seem to be in good condition and safe for police operations. The department has purchased several new Dodge police vehicles with six-cylinder engines. The officers we interviewed indicated that the vehicle of choice was still the Ford Crown Victoria. We note that Ford has advised that it will soon discontinue production of this vehicle.

We have been provided with documents that describe all aspects of the department's operations, including patrol operations. The department has historically provided good leadership and well-documented performance guides and policy manuals covering all patrol operations and a wide range of situations that might confront the officer.

We believe that the uniform patrol division is able to function and provide a high level of service with the current number of officers (i.e., the number of officers currently employed, not necessarily those budgeted or shown on the table of organization). However, any further reduction in patrol-force staffing will have an operational impact, particularly in the amount of time available for proactive functions.

### **Recommendation #3**

We recommend that the city consider moving to a 12-hour shift as opposed to the current 10-hour schedule. The 10-hour-shift schedule creates times when additional personnel are assigned to patrol that are not warranted by workload (See Figures 12, 13, 15, and 16 in the Data Analysis Report.) Due to continuing pressure to downsize departments nationwide, this has been a way to add more officers' hours to street patrol without increasing budget demands. It has also been brought to our attention that Alameda Police Department officers are required to commute long distances to work due to high housing costs.

The 12-hour shift has appeal to both police management and the working officers. In a 12-hour shift, officers are assigned to four teams, two that work days and two that work nights, and consistently work with the same supervisors and fellow officers. This provides continuity of supervision and allows the development of a team approach to solving problems.

From the officers' perspective, such shifts allow them to respond to work only seven times within a two-week period. Officers are off every other weekend on Fridays, Saturdays and Sundays. This increases the amount of time they have to spend with family and to do other off-duty activities, and it reduces their commute time due to the fewer days reporting within a pay period.

An additional value of using the schedule to both officers and the city is that officers are able to earn additional income, while the

city increases staffing levels for a lower cost than it would be to add another officer. In a schedule that is commonly used, officers work three days one week and four days the following week, averaging 42 hours per week within the two-week pay period. This is consistent with Fair Labor Standards Act regulations and does not require paying overtime for the additional two hours per week. Accordingly, each officer works and is paid for an additional 104 hours per year, compared with the 40-hour work week, or a total of 2,184 hours per year. Thus, for every 21 officers working, this creates an additional 2,184 hours of staffing, or the equivalent of an additional officer. While the city is paying for these additional hours, it is adding additional manpower without the cost for benefits. A copy of this schedule design is attached as Exhibit 1.

#### **Recommendation #4**

Review the benefits of leasing as opposed to purchasing police vehicles. As the fleet is aging, there will also be a continual need for new police vehicles. Many departments nationwide are using leasing programs to replace vehicles in aging fleets. These plans require a minimum capital expense and allow for a purchase at the end of the lease, if desired. We recommend exploring the lease/purchase plans when considering new vehicles.

#### **D. Investigations Division**

The investigations division has six separate units working within it: the violent crimes unit, the property crimes unit, the youth services section, the narcotics unit, the special duty unit, and the

COPPS/harbor patrol Unit. Each division is commanded by a lieutenant; each investigative unit is commanded by a sergeant.

The lieutenant and all of the sergeants were interviewed regarding their assignments, the investigative process, and other duties and responsibilities. During the interviews, we learned that detectives were concerned that they were constantly supplementing patrol operations with their personnel. They seem committed to maintaining a high level of service but indicated that continuing decreases in personnel will have an impact on their ability to deliver services in the future.

A tour of the detective division's workspace revealed no deficiencies. Investigators indicated that their surveillance and audio/visual equipment is beginning to show signs of age. The equipment is still functional and used routinely.

### **Recommendation #5**

It appears that the current economic situation will continue for an extended period of time. This indicates that the transfers of personnel may continue for several years. It is our recommendation that the detective division reorganize its operation. Combining units into more cohesive and well-defined groups will provide better supervision and allow prioritization of work responsibilities.

If this recommendation is acted upon, the department's leadership must use these personnel only as a last resort to supplement patrol operations. This will also afford an opportunity

to reduce the number of sergeants in the department. The departments should also consider hiring civilians to assist in the detective division. They can be hired at lower salaries and are extremely capable of handling many tasks that will free the detectives to spend more time on investigations. The issue of aging equipment should be reviewed, too. A plan for replacing these critically important tools should be considered—there is no excuse for equipment failure in major case investigations.

The lieutenant of the detective division should also be relieved of his responsibility to manage the animal shelter. We realize that this responsibility traveled with him as he moved into his current position, but leading the detective division requires his undivided attention. The animal shelter is an important part of the city, and the supervising responsibility should be reassigned to an individual who can commit the time necessary to handle the issues confronting the shelter and its staff.

The length of assignment should also be reviewed. Under the current policy, members who are transferred to an assignment can remain in that assignment for only four years. A number of positions within the department require a high level of expertise acquired by training and experience. This is particularly evident in the detective division. This practice should be reviewed, and exceptions should be allowed where warranted.

#### **E. Animal Shelter/Animal Control**

The City of Alameda's operation of an animal shelter is a credit to the city and its citizens' commitment to the humane treatment of animals.

This operation accounts for the expenditure of \$649,000 in the police department's annual budget. The operation also relies heavily on support from volunteers. However, the operation of an animal shelter is not a traditional police function; most shelters are operated by private organizations that are often supported by grants and/or budget contributions from the government. Alternatively, this can be a public works function.

A review of the shelter operations revealed a dedicated staff of employees and volunteers. The shelter staff recognizes their responsibility to maintain the shelter, care for the animals, and work toward placing animals in loving homes. This is a full-time commitment by the staff. The current staffing levels do not allow the two budgeted animal control officers to respond to calls of animal complaints. The complaints are now being handled by police officers, who are not trained or equipped to handle them. This is a very real concern among the officers patrolling the streets and has become a safety concern for them.

Nuisance animal complaints are best handled by qualified animal control officers. The two animal control officers currently budgeted do not patrol or routinely respond to animal complaints. One animal control officer is currently on disability leave and has been unavailable for 15 months. This is a very important position, and a decision regarding this officer's status should be made soon. Having this position available will allow at least one animal control officer to respond to calls for service.

The city must also determine responsibility for the removal of dead animals from city streets. In at least one instance, an officer has had to remove a dead animal and transport the carcass in his police vehicle. The removal of dead animals is clearly the responsibility of the public works department.

### **Recommendation #6**

The city should continue to attempt to partner with a nonprofit organization to operate the shelter. The city should also explore participation by the county government and other municipalities in an attempt to mitigate costs. If this is accomplished, the city should maintain at least one animal control officer to handle animal complaints. Police officers are not trained or equipped to handle most animal complaints. Unless there is an emergency, police officers should only write an incident report to be forwarded to the animal control officer for later disposition. The issue of handling dead animals must be addressed immediately.

### **F. Jail Operations**

The City of Alameda's jail is perceived by the department as a necessary function of the department's overall public-safety mission. The jail handles an average of 3,500 prisoners per year and holds prisoners for no longer than 48 hours after their initial arrest. Depending on the circumstances of the arrest, prisoners are either bonded out, taken to court for their first appearance, or transferred to the county jail.

An inspection of the jail revealed no observable deficiencies. We have been advised that the jail has complied with all statutory requirements

concerning staffing and operations. The jail personnel appear well trained and understand the essential role they play in officer safety and the safety and security of the prisoners in their custody.

The police department's members agree that maintaining the jail adds to the department's overall efficiency. The jail allows for suspects to be transported from the arrest situation in a short period of time. This also allows the officers to quickly complete the booking process and return to service. If the jail were not available, the officers would be required to transport suspects to the county jail for processing, causing them to be away from the city for a much longer time. Also, the jail offers opportunities for intelligence gathering and is convenient for follow-up interviews by detectives.

The jail's operation adds more than \$800,000 to the police department's annual budget. There is also a wide range of liability issues connected with the operation of a jail.

A previous study conducted by the chief of police indicated that the jail should remain in use. However, the current economic situation requires that this issue be revisited.

### **Recommendation #7**

The city should continue to explore the option of sharing jail operations with other agencies and/or consider the ramifications of closing the facility in favor of using the county jail.

### **G. Property and Evidence**

A review of the property and evidence storage facility revealed no observable deficiencies. The department has instituted an auditing system that should detect any irregularities or mishandling of items. The department has also instituted a two-key system that requires two people to be present when these controlled storage areas are accessed.

### **H. Crime Scene**

The crime scene unit members are well trained and highly motivated. They have great interest in technology and how it can be applied to their department. The experience and dedication of the unit members were impressive. The visit and review of the unit revealed no deficiencies.

### **I. Training and Personnel**

The training and personnel unit is responsible for training, recruitment, and other personnel matters within the department. Interviews with staff-level officers and the supervising sergeant indicated a commitment to training and the selection of quality personnel. This commitment is apparent in the obvious quality of the police officers and civilian staff who work for the department. We understand that in periods of financial stress, there is great temptation to reduce funding for training activities, and we strongly urge the city to continue its current high level of commitment to police training.

## **J. Traffic Enforcement**

The traffic enforcement unit is assigned to the uniform patrol division. The responsibility of the unit is to do traffic enforcement and accident investigations. The motor officers are highly motivated and present an excellent professional image to the public. These officers routinely assist and supplement the beat officers.

## **K. Internal Affairs**

The internal affairs unit is staffed by one investigator. The investigator is a veteran of the department and has had training and experience in these types of investigations. The internal affairs unit investigated a total of 18 complaints in 2008. Eleven of the complaints were sustained. The internal affairs unit maintains police officer records, audits drugs and property evidence, and reviews all claims against the city. A review of the internal affairs investigative process and revealed no deficiencies.

## **L. Policies and Procedures**

The Alameda Police Department policy manuals were reviewed. These documents give proper direction and guidance to the officers and civilians within the department. The manuals properly address high-liability issues and have been updated in a timely manner.

## **IV. Summary**

The Alameda Police Department provides excellent police services to the City of Alameda. The department offers a wide array of services that the citizens have learned to expect and appreciate. In these difficult economic times, police managers must learn to maximize their resources and only ask for items that they must have. We have seen

an effort by the department to do this. The police department has made significant reductions in its workforce over the past three years. The workload analysis being prepared will provide valuable insight into the proper staffing levels for the department. Then it will be the task of the chief of police, the city manager, and the city council to utilize this information to make important decisions about appropriate staffing levels.

The chief of police has indicated a willingness to further reduce the number of officers in the department to achieve budget-reduction goals. He has indicated that he is willing to further reduce his force by eliminating three positions in the next fiscal year. Specifically, he is prepared to eliminate one lieutenant and two sergeants from the force. We agree with this reduction and believe that the department can continue to function at a very high level without these positions. We have seen willingness from the chief of police, the city manager, the mayor, and the entire city council to work toward the improvement of public-safety services to the City of Alameda. The combined effort of all concerned will undoubtedly produce more efficient and effective public-safety services to the citizens of the community.

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