



Asking the Right Questions to Make Data Driven Decisions on Staffing and Deployment



*Exclusive Provider of Public Safety Technical Services for
International City/County Management Association*



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Q. Why do you rob banks?





**“Because that’s where
the money is.”**

– Willie Sutton



There really is a “Sutton’s Law”:

- In medicine states that when diagnosing, one should first consider the obvious;
- Used in g (ABC) of management accounting, the law stipulates that ABC should be applied "where the money is," meaning where the highest costs are incurred and, thus, the highest potential of overall cost reduction is.



Overview

- Typical Request is MORE resources PLEASE!
 - Limited analyses of workloads, performance, and value of MORE?
- Aggregate data on total calls misleading
- Performance **NOT** linear function of total calls:
 - An increase of 50% may require little or no additional resources

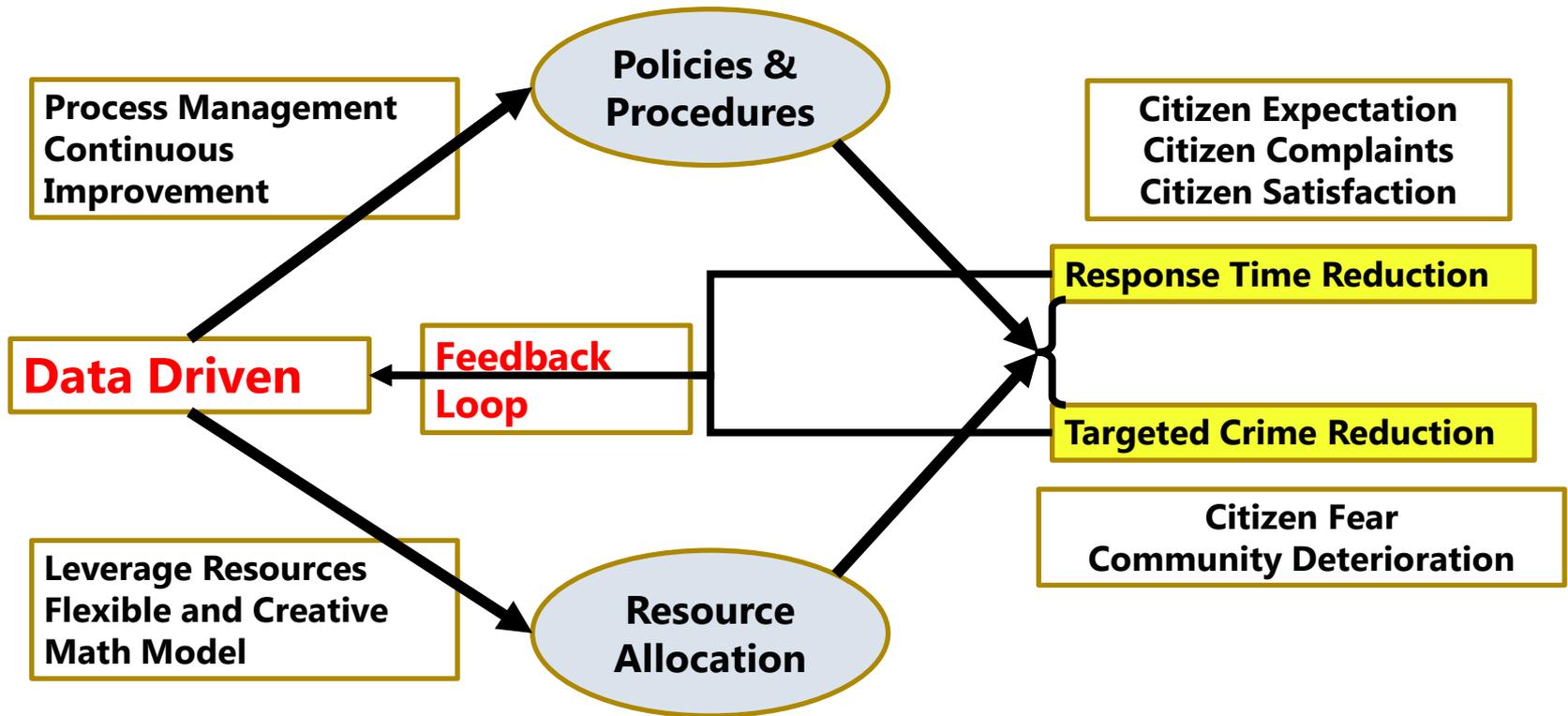


Police Issues





Police Patrol: Reactive and Proactive





Q. What is the recommended officers per thousand for a jurisdiction of your size?



A. THERE IS NO SUCH THING!



No Two Jurisdictions are the Same

- Geography
- Social – Economic Conditions
- Crime Rate
- Physical Size
- Density



Deployment Questions to Ask

Q. How many patrol personnel are actually on the street? By Season, Day of Week, Hour of day?

Q. What's the difference between Calls For Service (CFS) vs. Workload

- CFS is a quantity – a number
- Workload is the cumulative time to handle CFS



Example of CFS vs. Workload

- Burglary – we send two officers to handle call. They are there for 1 hour each.
- Calls for Service = 1
- Workload = 2 Hours (2 x 1 hours)



Response Times Questions

- Q. Do you know that response time is only important on limited number of high priority calls?
- Q. Are calls dispatched and recorded by priority?
- Q. Is response time measured by time of day, day of week and season?
- Q. Do they always check for bad data?
- Q. Do they track long response times for high priority calls and find out why?



Key Patrol Questions

- Q. Is deployment aligned with workload variations by season, day of week, hour of day?
- Q. Are same number of patrol units assigned around the clock? – rarely good idea
- Q. Are problem areas such as shift change identified?
- Q. Do shift start times, schedules & CBAs limit deployment flexibility and alignment?



Police - City of 275,000

3 start times/10-hour overlapping shifts

	0200 to 0700	0700 to 1600	1600 to 2100	2100 to 0200
August 2002	29	33	33	62
January 2003	32	34	32	64

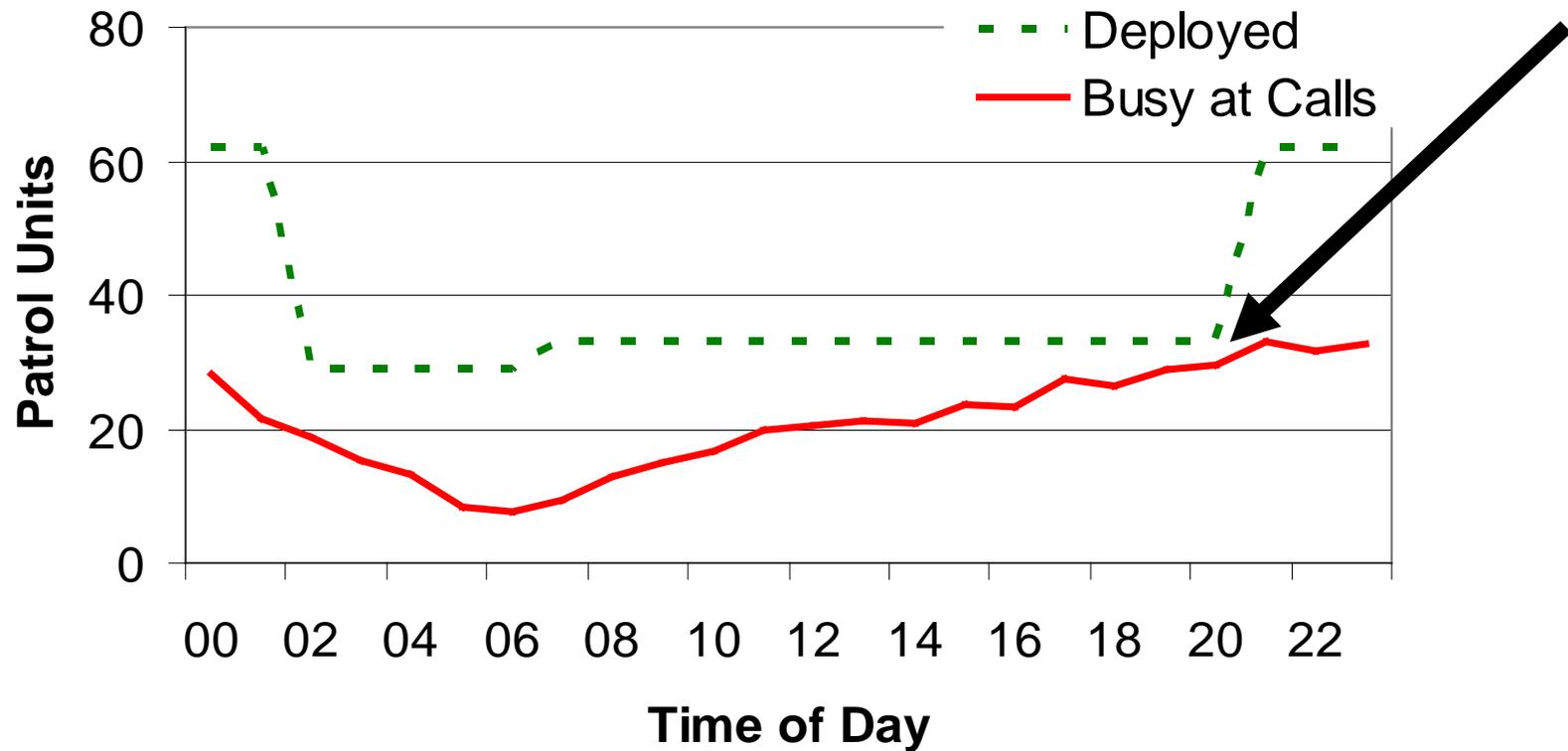
Daily Average Call Rate

- ❑ August 34% higher than January
- ❑ Priority 1 & 2: 50% more calls per hour in August



Misaligned Patrol Force - City of 275,000

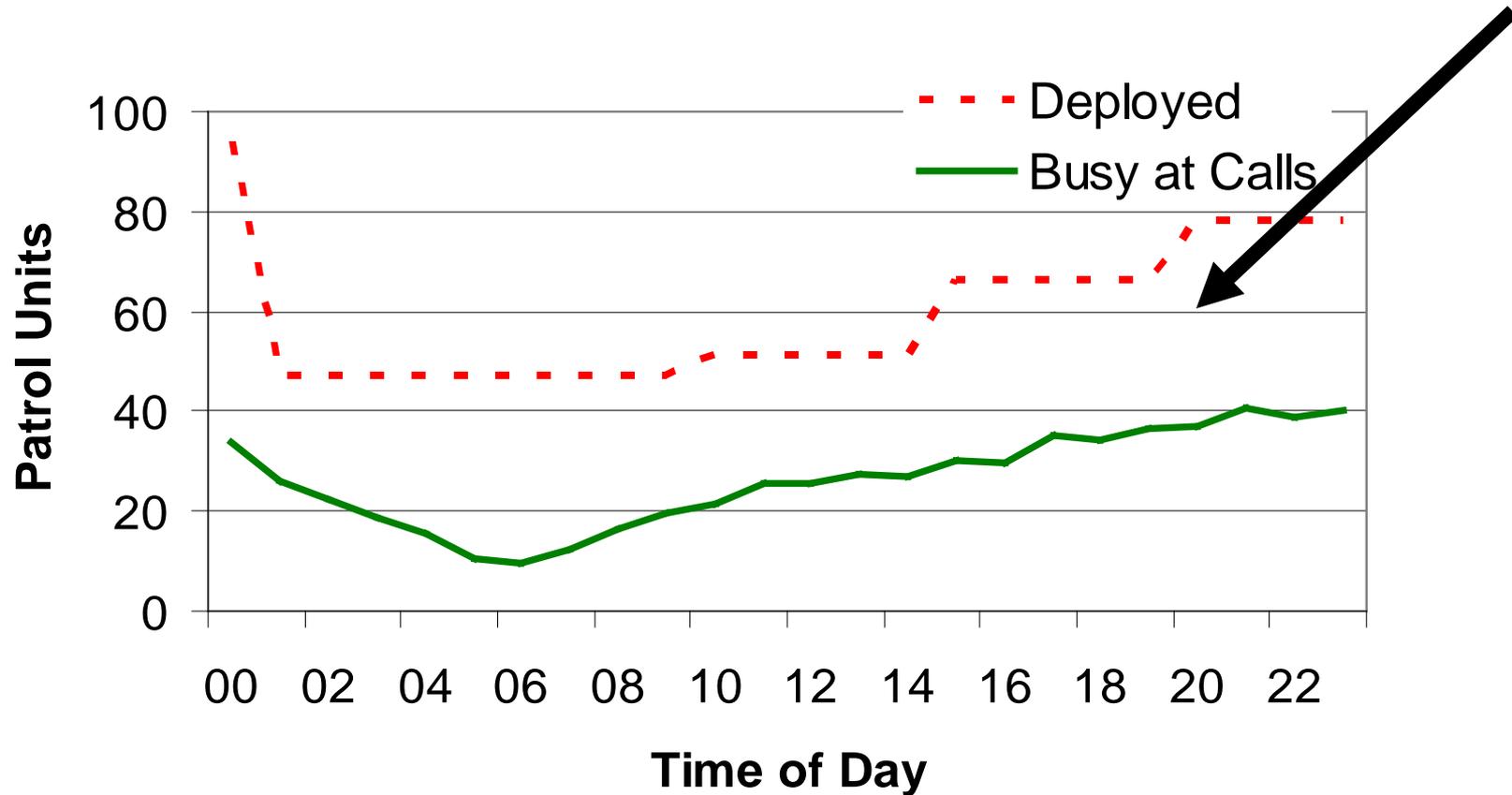
3 start-times/10-hour shifts





Aligned Patrol Force – City of 275,000

5 start-times/10-hour shifts





The Police Foundation

Shift Length Experiment



Shift Length Experiment

Limitations:

- Self Reporting
- Not Random Sample – Officers selected shifts.
- Officers were allowed to change shift in mid process.
- Limited to 3 Departments



Shift Length Experiment

Positives:

- Excellent bio data testing



10-hour shifts have self reported advantages over 8-hour shifts

- Officers working 10-hour shifts got more sleep per night (over half an hour) than those on 8-hour shifts and had a significantly higher quality of work life (self reported).
- 10-hour shifts worked the least amount of overtime of the three groups, potentially resulting in cost savings.



The benefits of 10-hour shifts may not extend to 12-hour shifts

- 10-hour shifts got more sleep than those on 8-hour shifts; not true for 12-hour shifts.
- 10-hour shifts had a higher reported quality of work life than those on 8-hour shifts; 12-hour shifts did not.
- 12-hour shifts worked a lesser amount of overtime than those on 8-hour shifts; they still worked more than those on 10-hour shifts.



Shift length impact

- Shift length did not have a significant impact on any of our measures of performance, safety, work-family conflict or health
- Performance and safety measures (interpersonal interactions, shooting skills, risky driving behaviors, reaction time, fatigue, and self-initiated departmental activity) were not impacted by shift length.
- The groups did not differ with regard to work-family conflict.



Shift length impact

During the six-month period in which officers were assigned to the experimental conditions, did not detect differences across groups:

- sick leave taken
- stress experienced
- increased cardiovascular problems
- gastrointestinal problems.



Effects of Schedules

- 10-hour day is often a productivity killer due to overlap
- 8-hour day gives maximum assignment flexibility but can affect continuity of supervision and team effort
- 12-hour day with 4 platoons and 42-hour week average (36 /48) may be best alternative especially in smaller agencies.



12 Hour Schedule – 42 Avg. Hours

Week #		SUN	MON	TUE	WED	THU	FRI	SAT
1	Day Team	A	B	B	A	A	B	B
	Nite Team	C	D	D	C	C	D	D
2	Day Team	B	A	A	B	B	A	A
	Nite Team	D	C	C	D	D	C	C
3	Day Team	A	B	B	A	A	B	B
	Nite Team	C	D	D	C	C	D	D
4	Day Team	B	A	A	B	B	A	A
	Nite Team	D	C	C	D	D	C	C



12-Hour Schedule Benefits

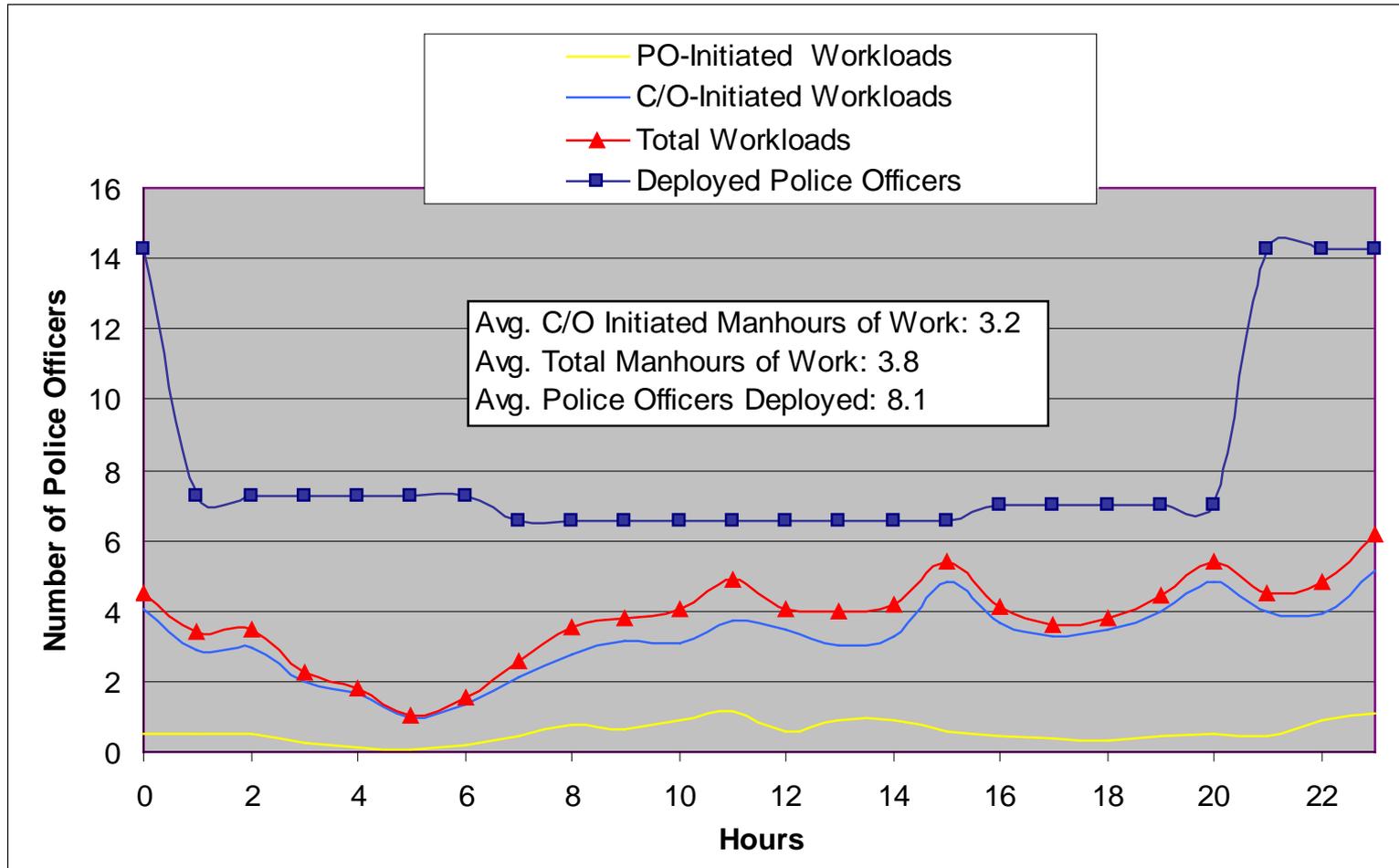
- Schedule repeats every 4 weeks.
- Each team gets Friday, Saturday and Sunday off every other week.
- Teams work 36 hours one week and then 48 hours the following week, averaging 42 hours per week. This is within FLSA requirements and the extra hours can be paid at straight time.
- These extra 2 hours per week contribute the equivalent of one additional officer for every 21 officers.



Have you done a Deployment vs. Workload Analysis?

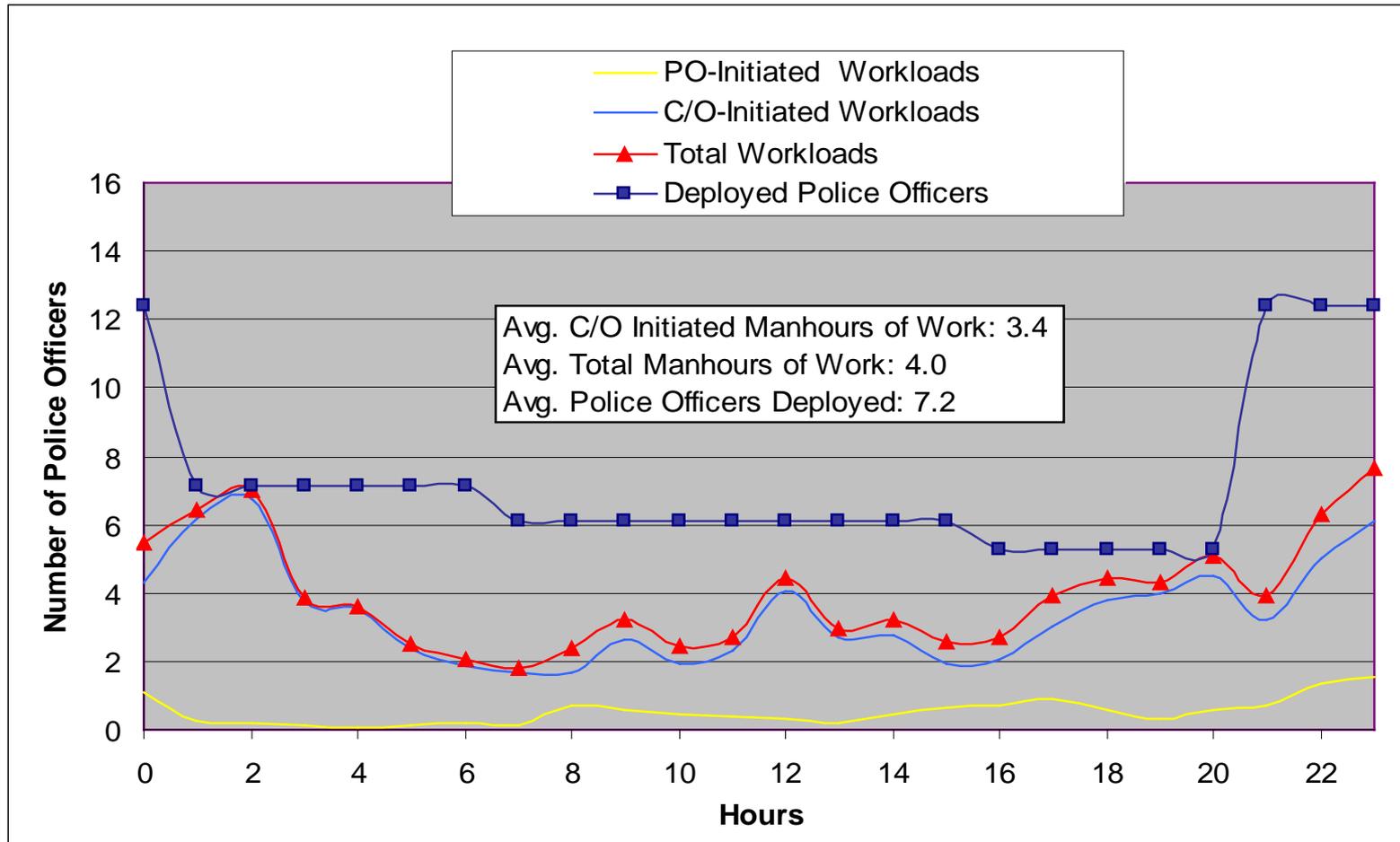


10-Hour Schedule: Weekdays





10-Hour Schedule: Weekends





How many police do we need?

“Officers per 1,000 and other urban myths”
by Joe Brann

- Policy issue driven by % of non-committed (free) time
- Function of work schedule
- What they do with the time is more important than how much they have!



How Many Officers?

- In addition to workload, response times may drive staffing decisions – particularly in low CFS areas.
- “Presence” may also affect staffing decisions, again in low CFS areas



Workload vs. Events



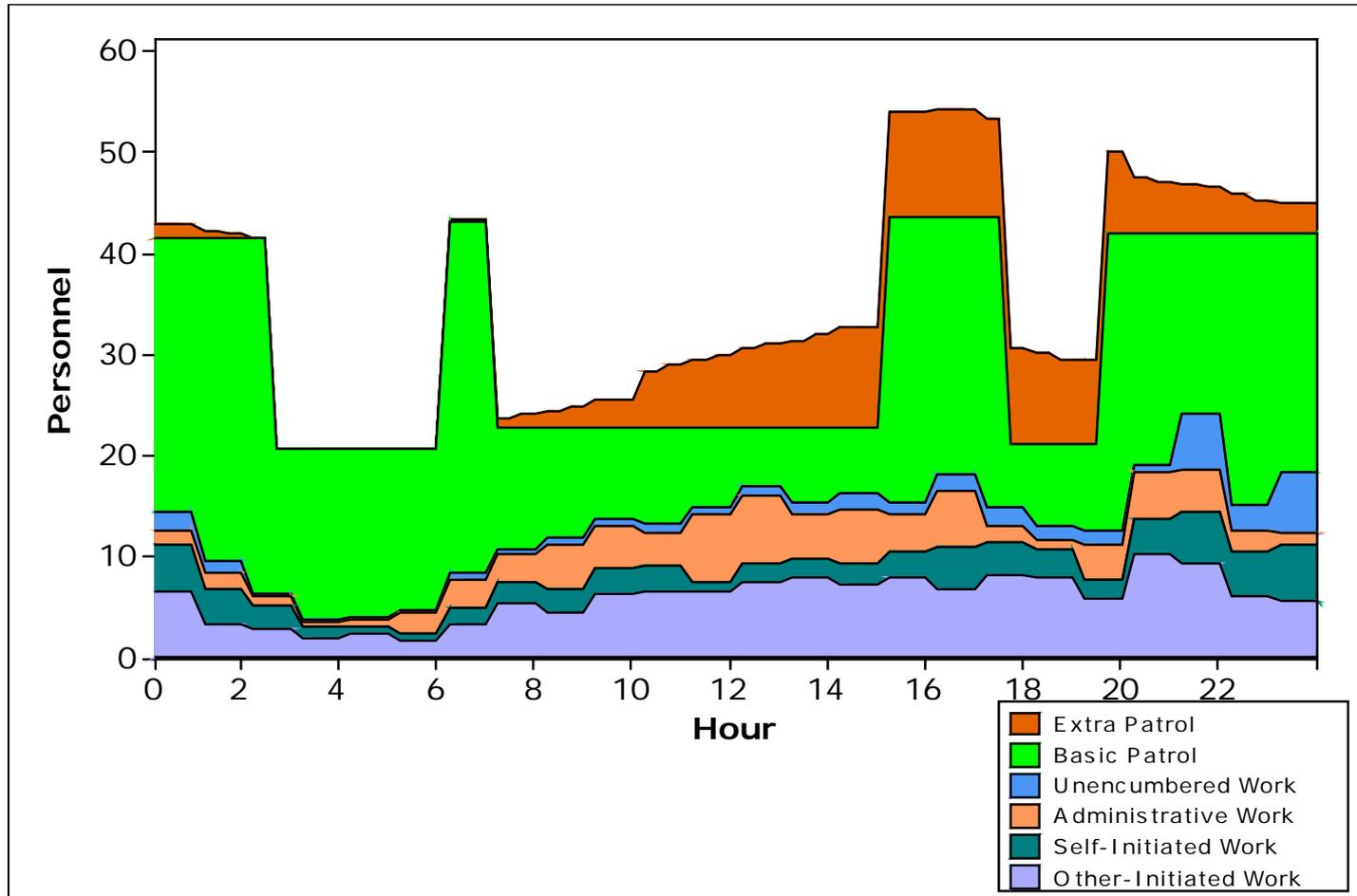


Rule of 60 – Police Allocation

- 60% of the Total Number of Sworn Officers should be assigned to Patrol
- No more than 60% of available man-hours should be dedicated to workload



Deployment vs. Workload

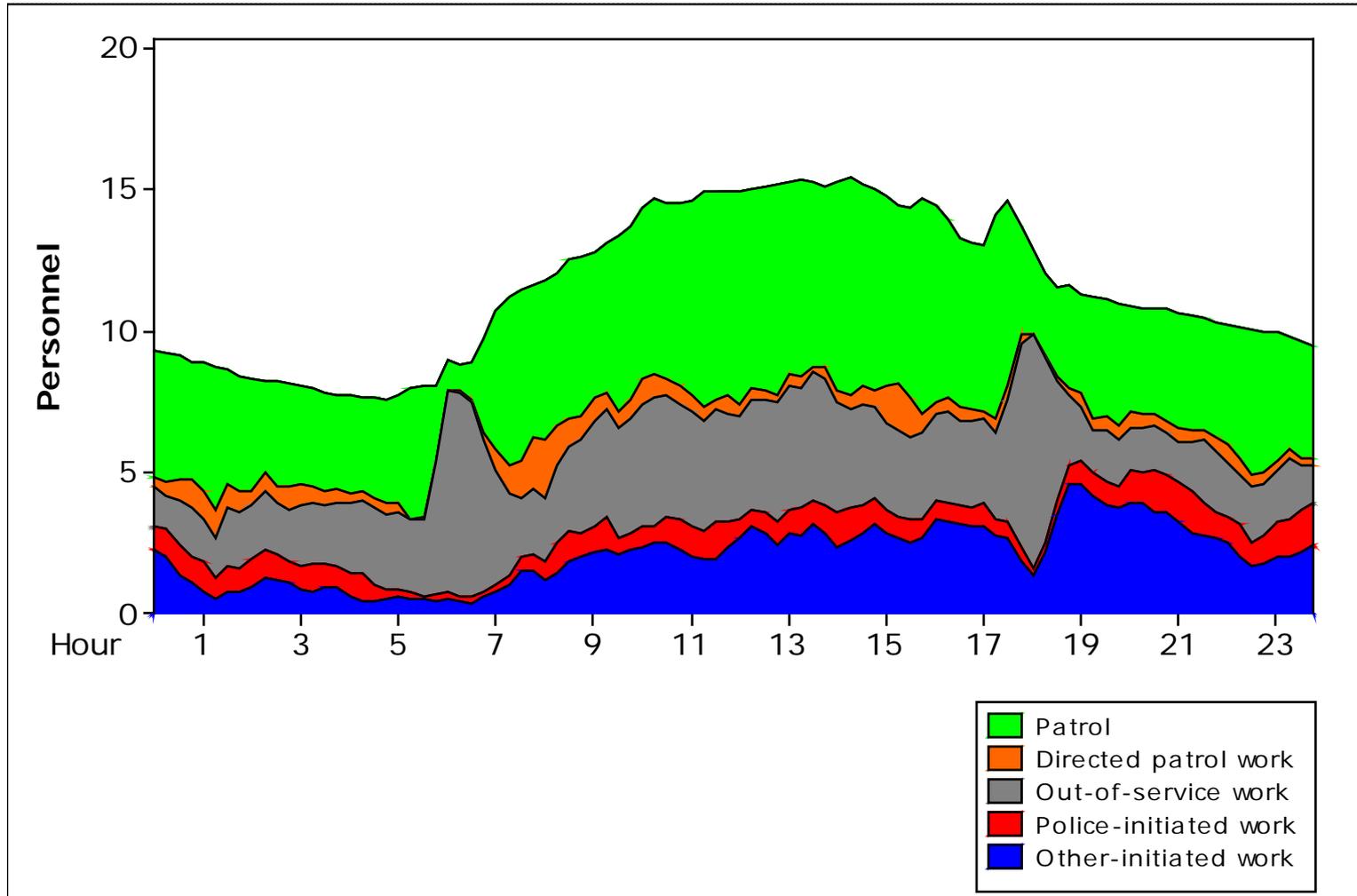




- **North Port, Florida**

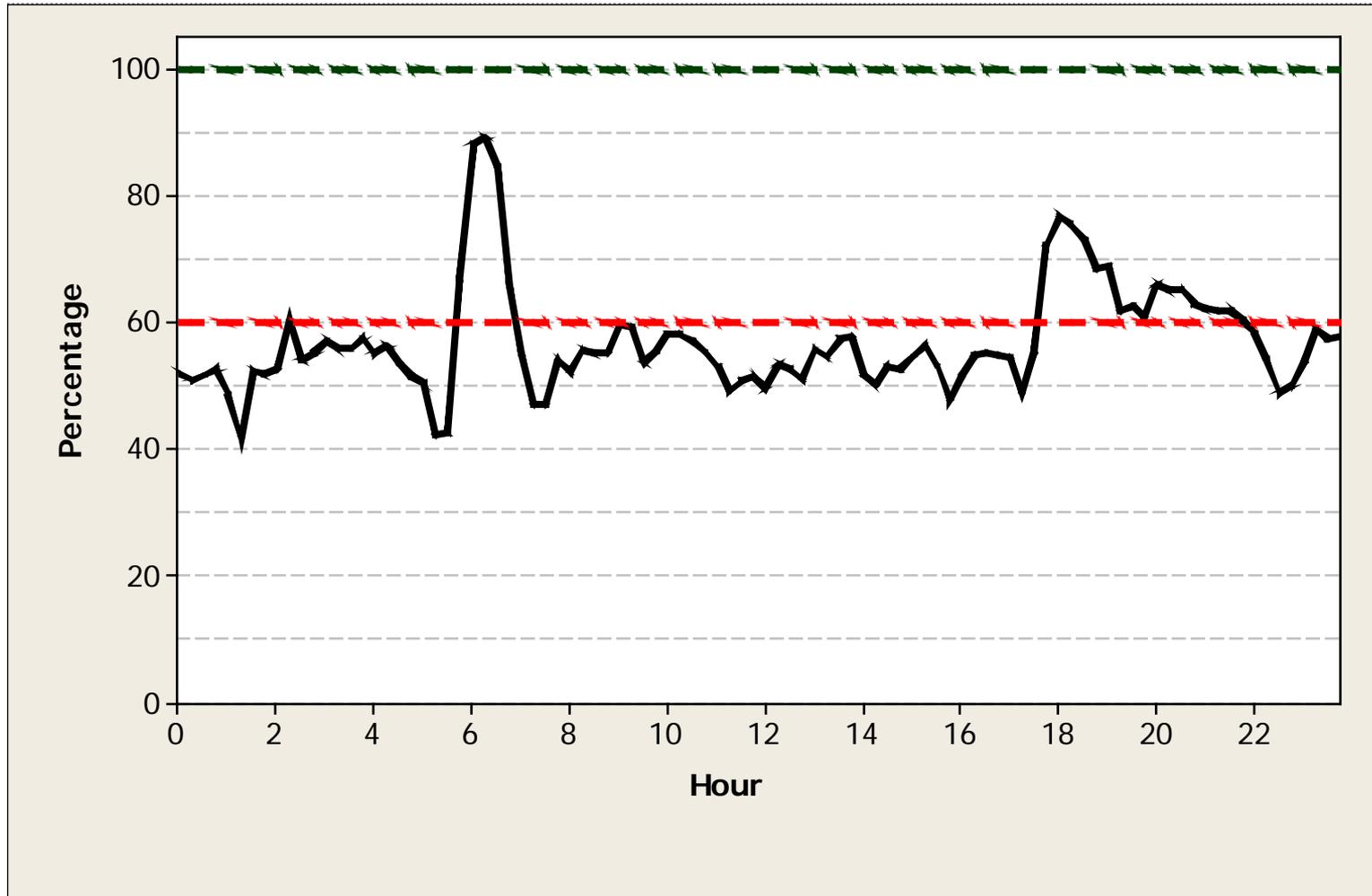


Deployment and Main Workload, Weekdays, Summer





Workload Percentage by Hour, Weekdays, Summer



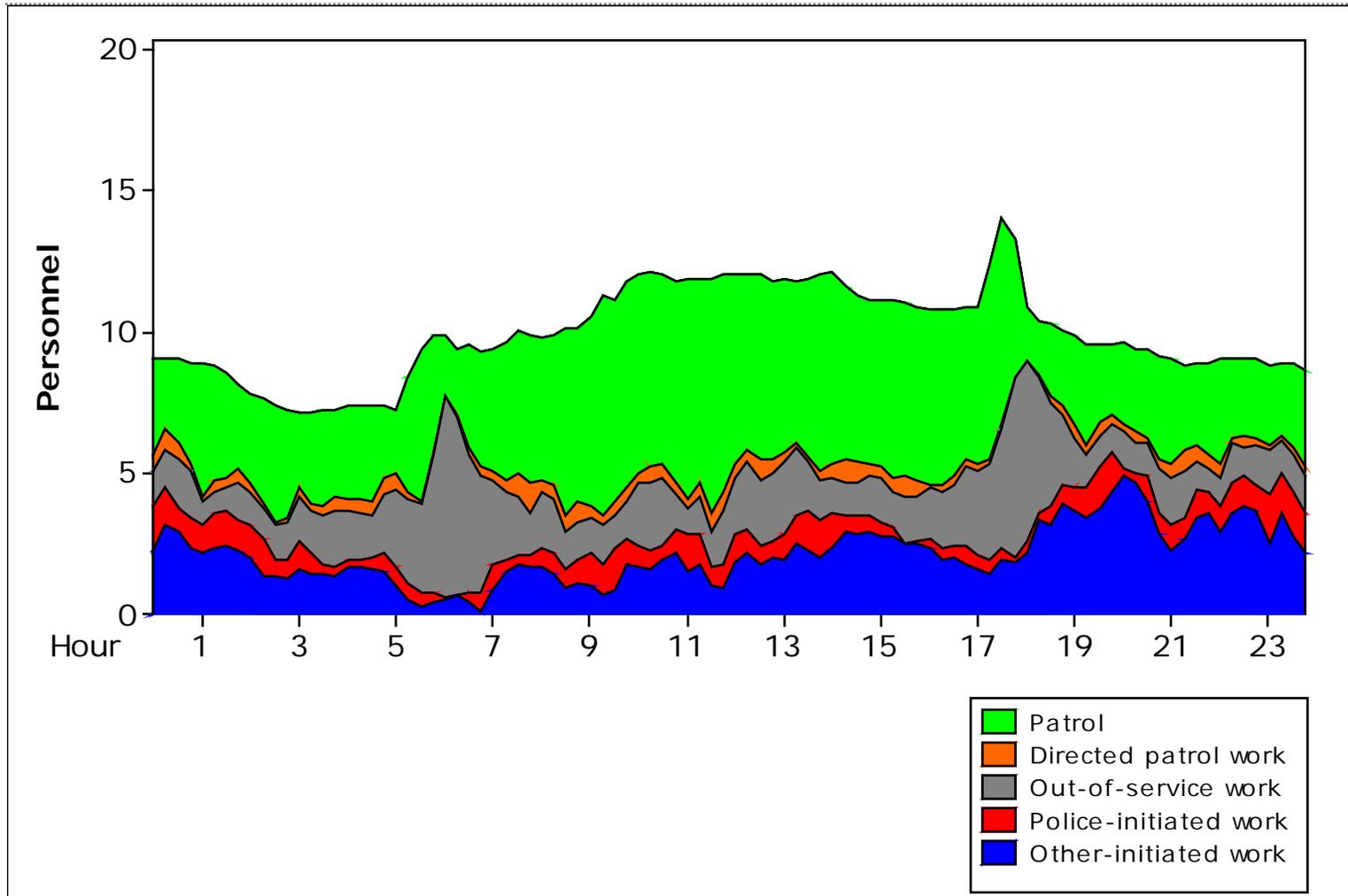


Workload vs. Deployment – Weekdays, Summer

Avg. Workload:	6.5 off / hour
Avg. % Deployed (SI):	57 percent
Peak SI:	89 percent
Peak SI Time:	6:15 a.m.

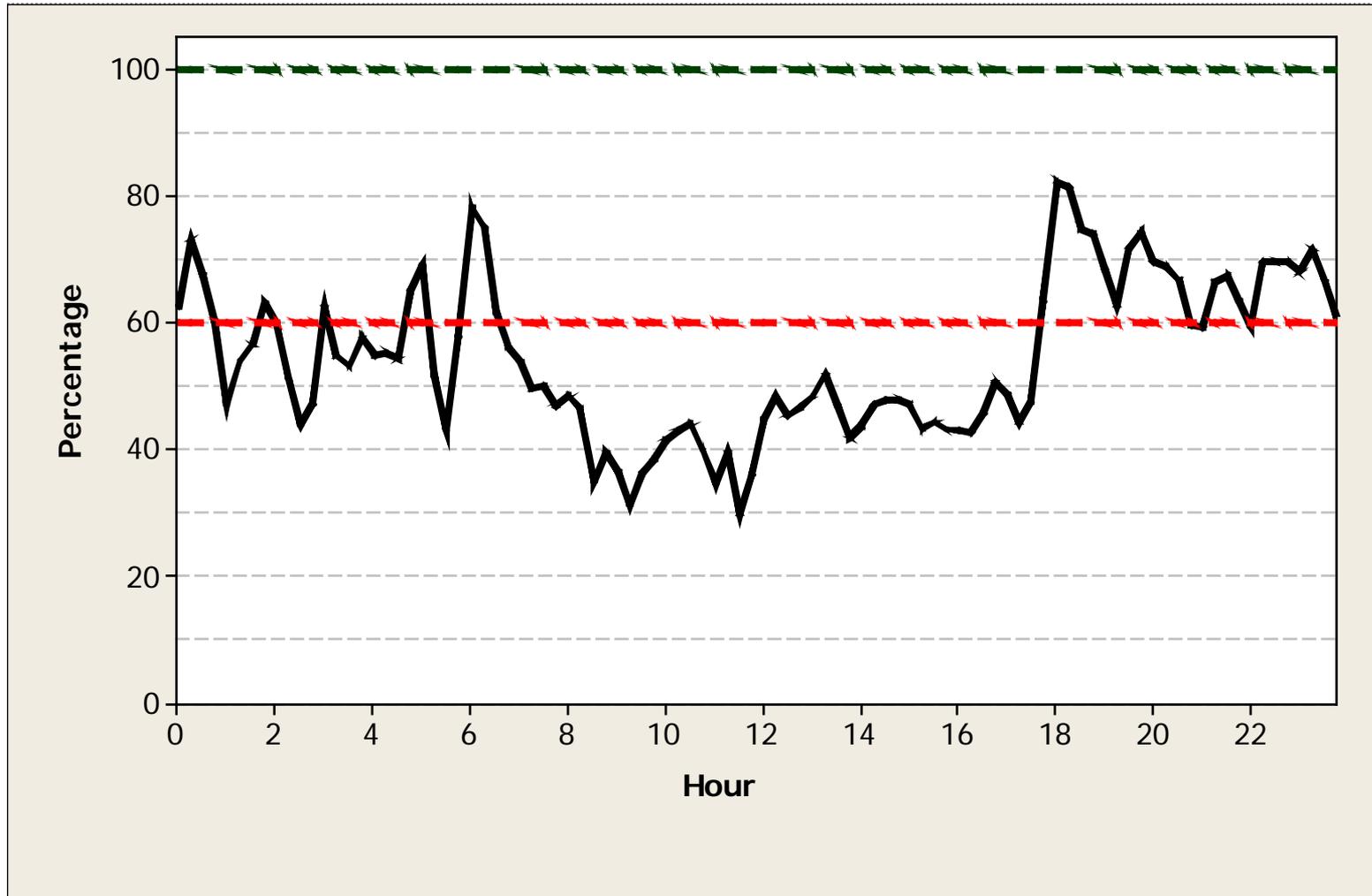


Deployment and Main Workload, Weekends, Summer





Workload Percentage by Hour, Weekends, Summer



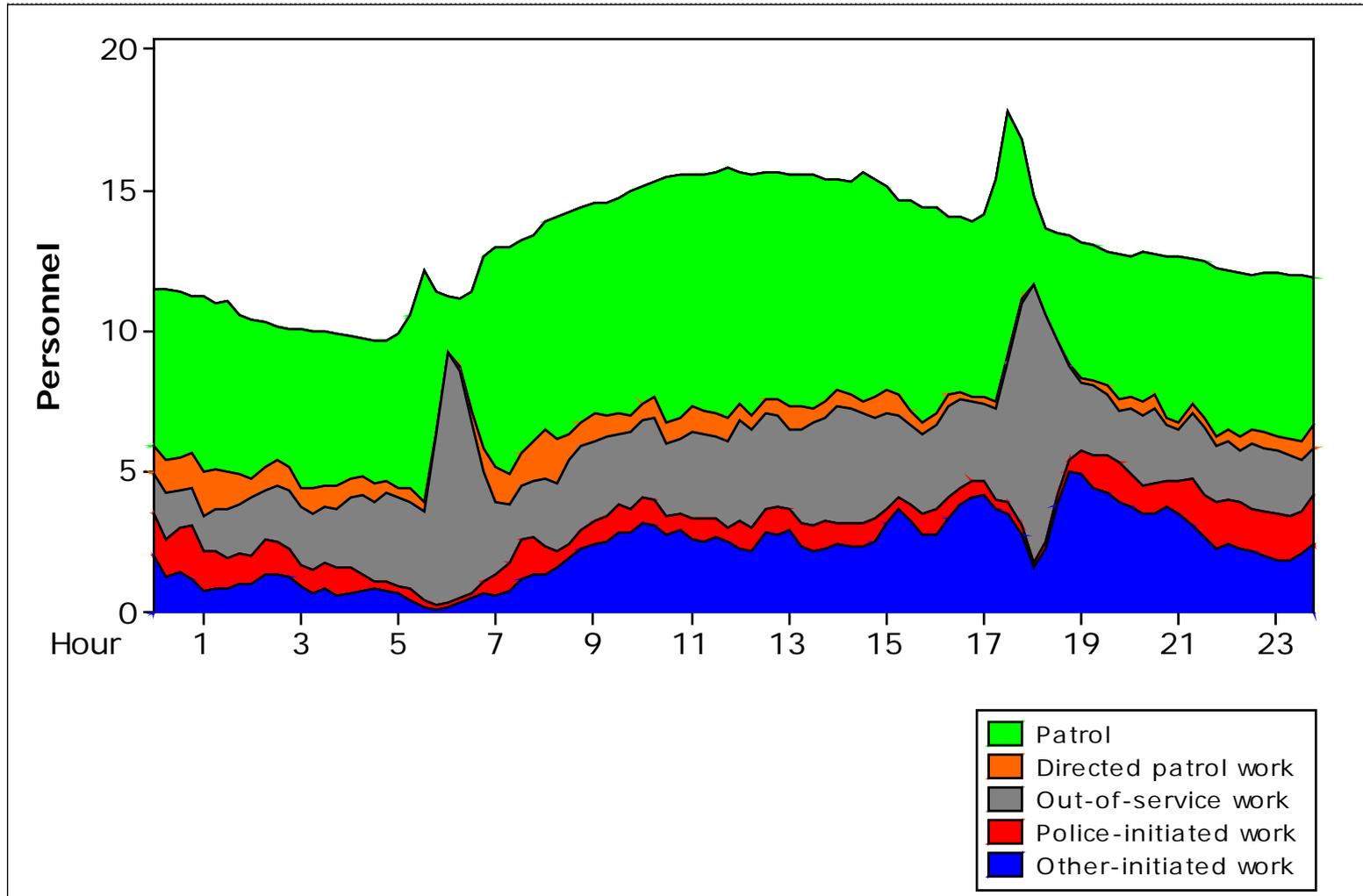


Workload v. Deployment – Weekends, Summer

Avg. Workload:	5.3 off / hour
Avg. % Deployed (SI):	53 percent
Peak SI:	82 percent
Peak SI Time:	6:00 p.m.

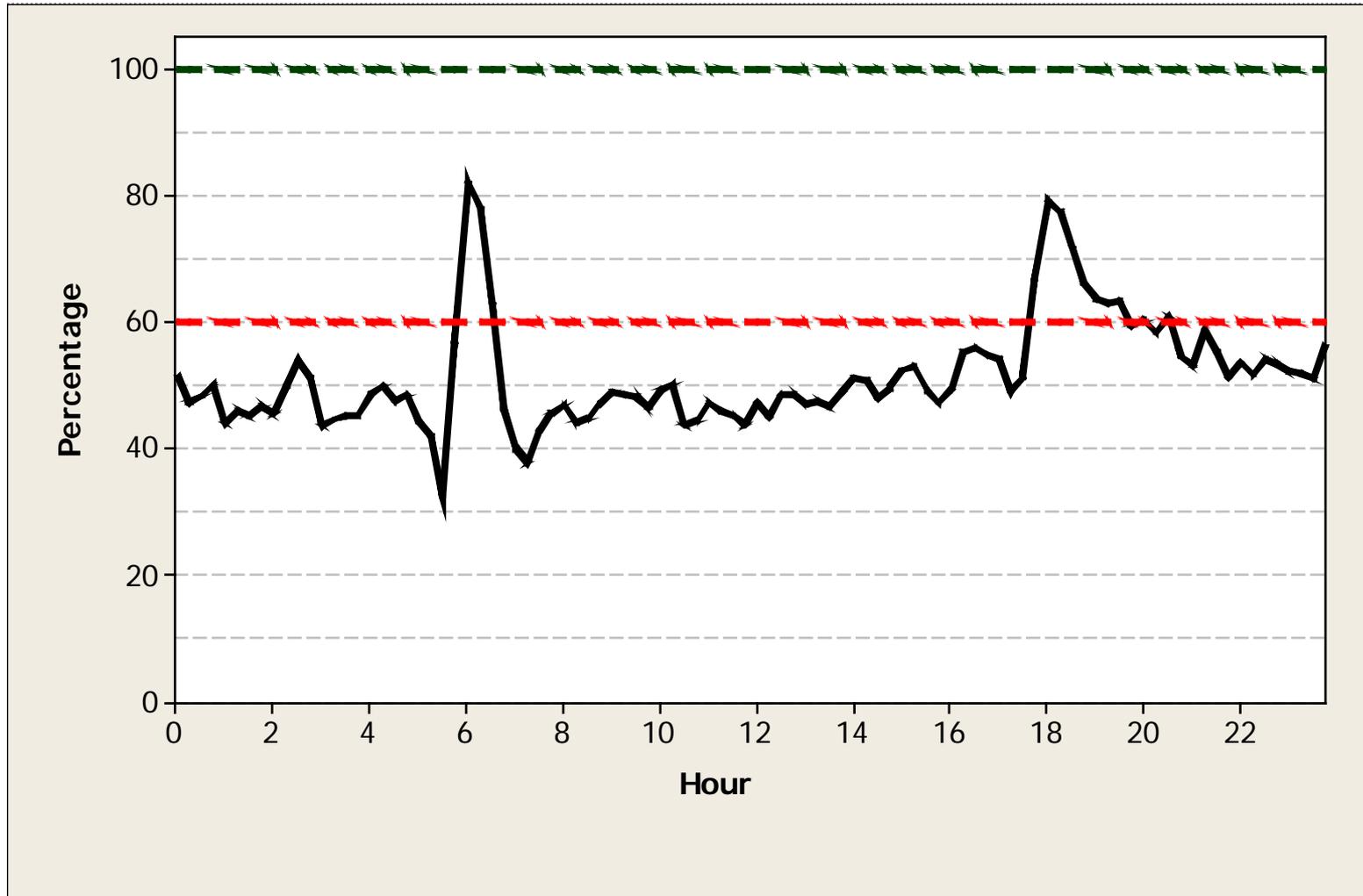


Deployment and Main Workload, Weekdays, Winter





Workload Percentage by Hour, Weekdays, Winter



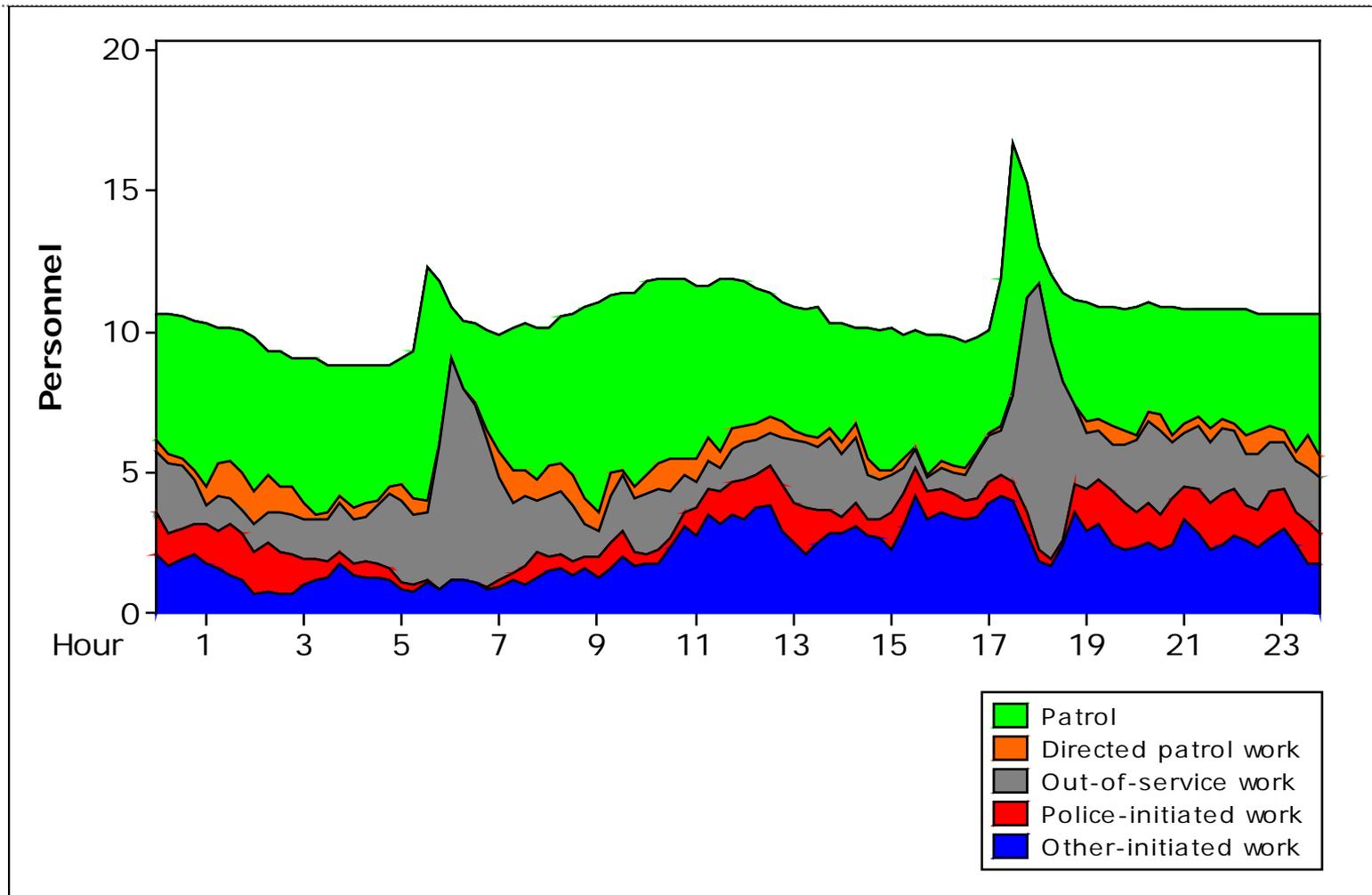


Workload v. Deployment – Weekdays, Winter

Avg. Workload:	6.7 off / hour
Avg. % Deployed (SI):	51 percent
Peak SI:	82 percent
Peak SI Time:	6:00 a.m.

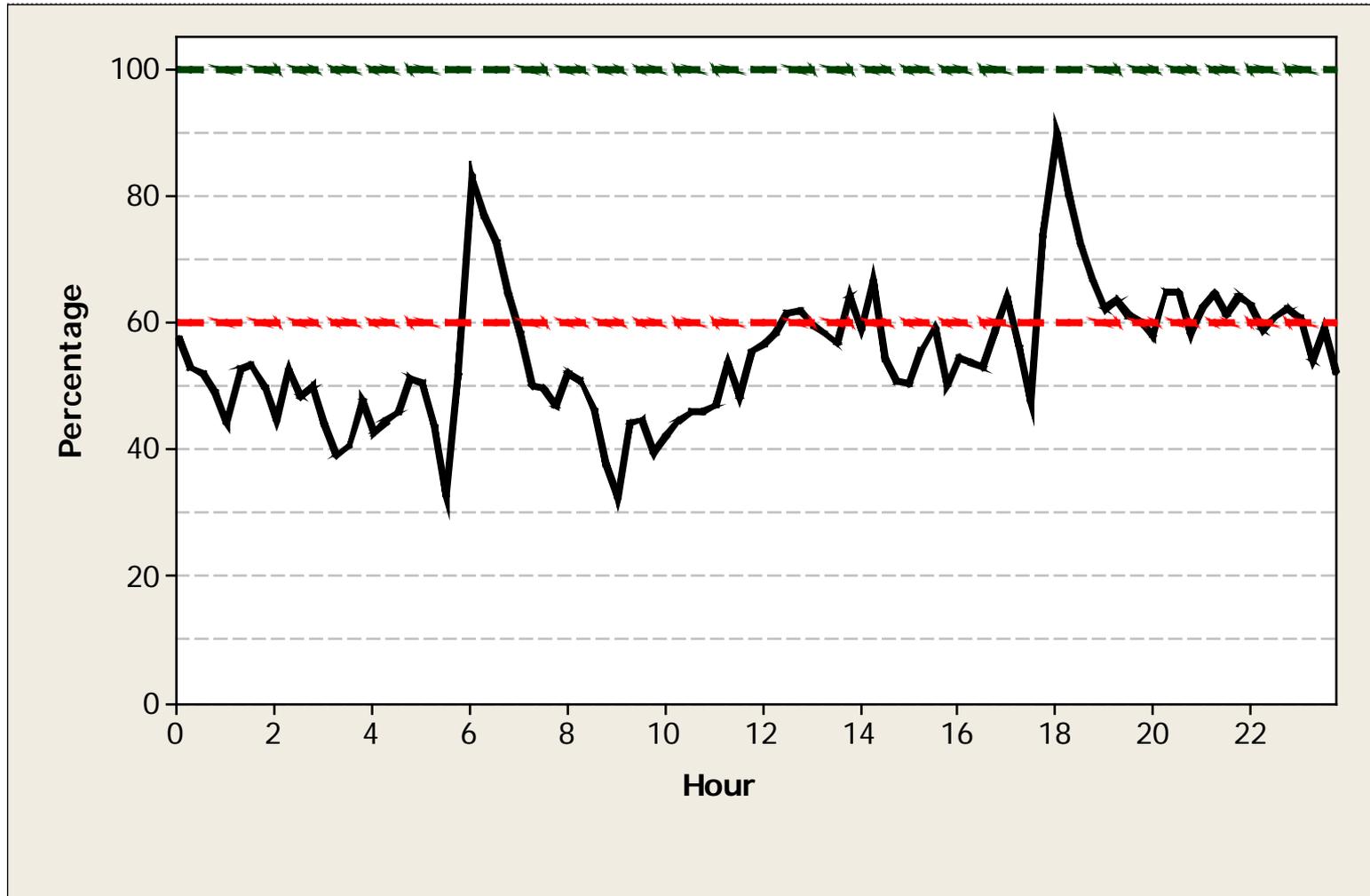


Deployment and Main Workload, Weekends, Winter





Workload Percentage by Hour, Weekends, Winter





Workload v. Deployment – Weekends, Winter

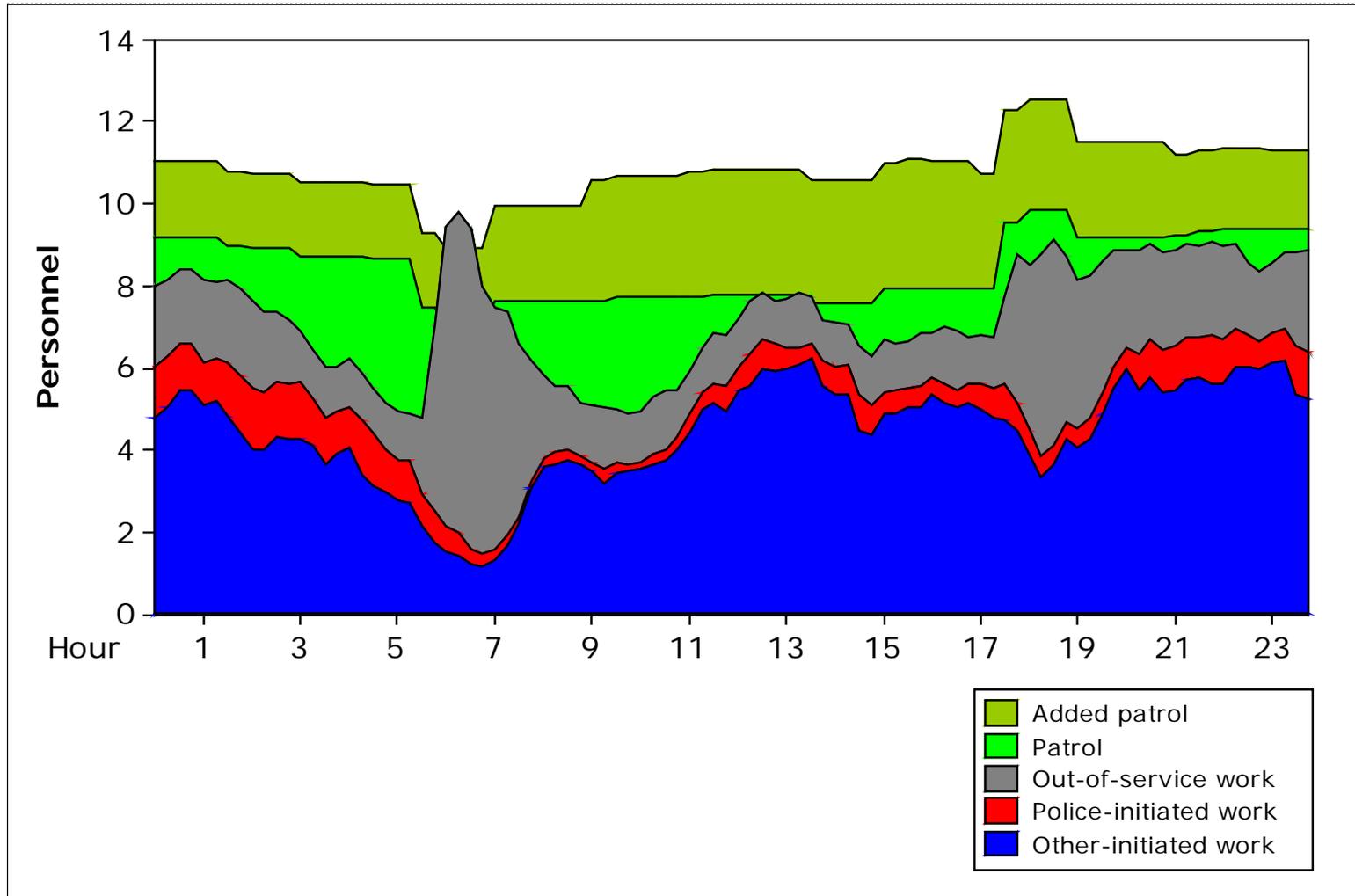
- Avg. Workload: 5.8 off / hour
- Avg. % Deployed (SI): 55 percent
- Peak SI: 90 percent
- Peak SI Time: 6:00 p.m.



- Flint, Michigan

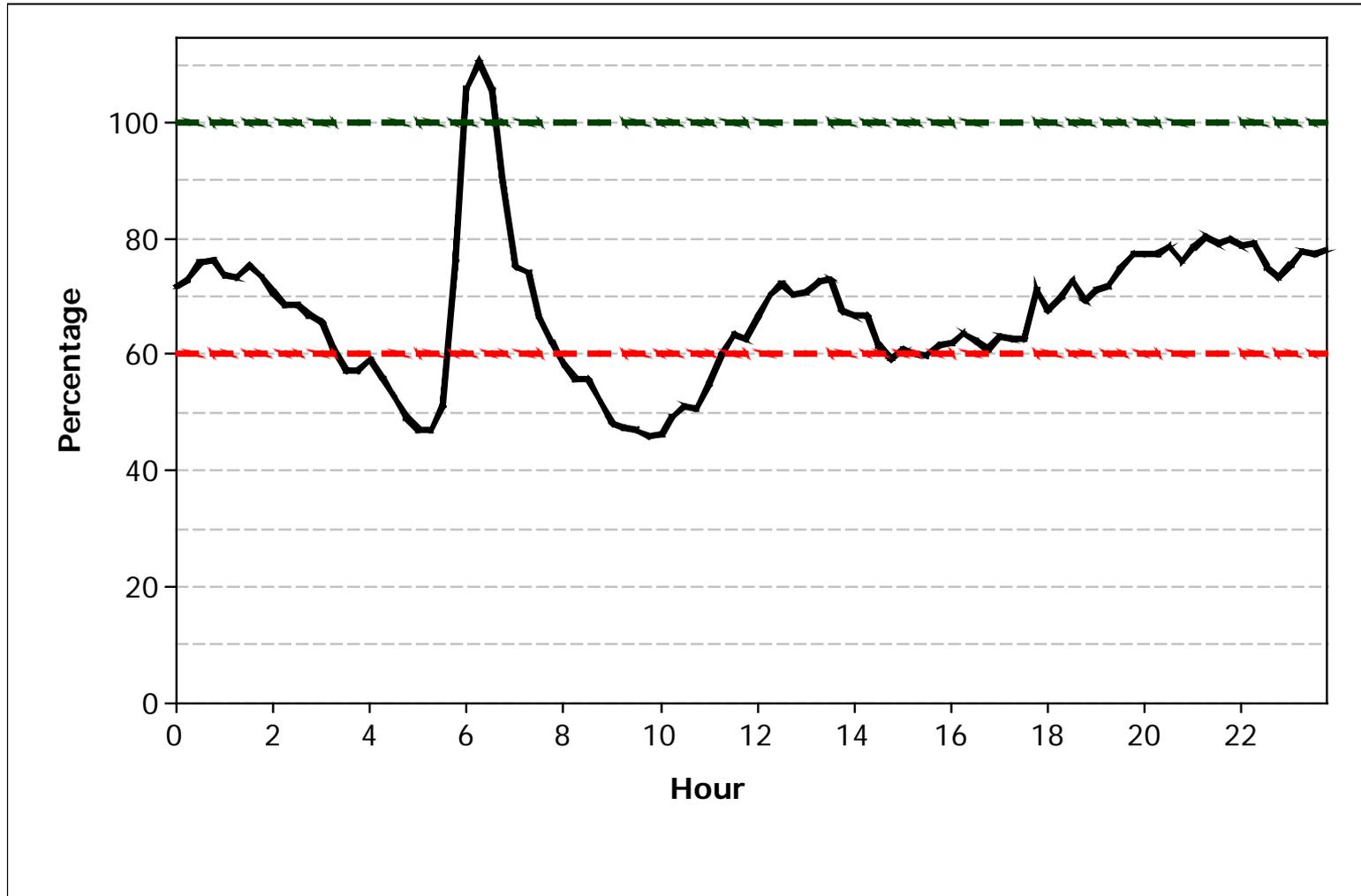


Flint - Deployment and Main Workload, Weekdays, Summer





Flint - Workload Percentage by Hour, Weekdays, Summer



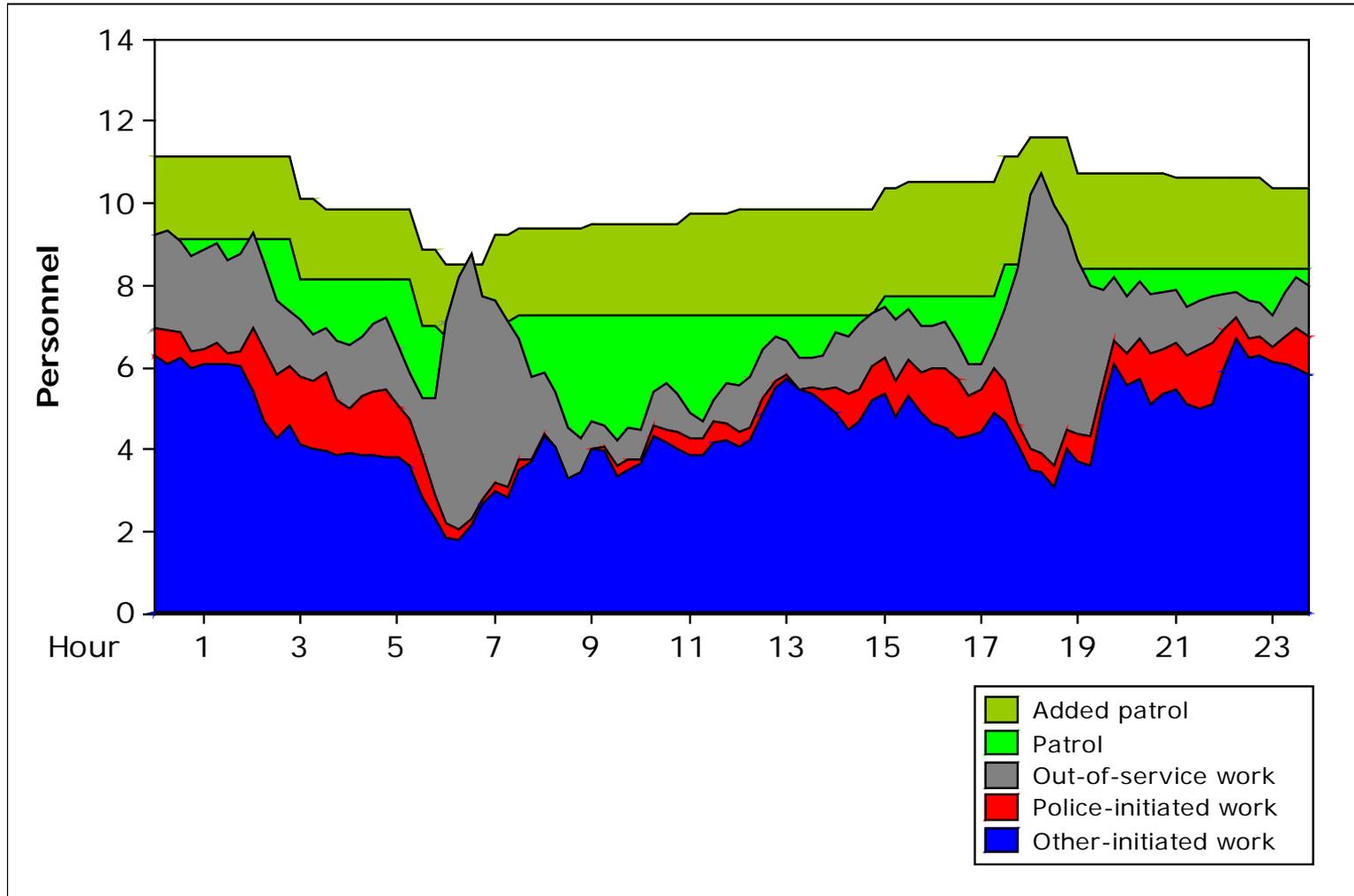


Flint - Workload vs. Deployment – Weekdays – Summer

Avg. Workload:	7.3 off / hour
Avg. % Deployed (SI):	67 percent
Peak SI:	110 percent
Peak SI Time:	6:15 a.m.

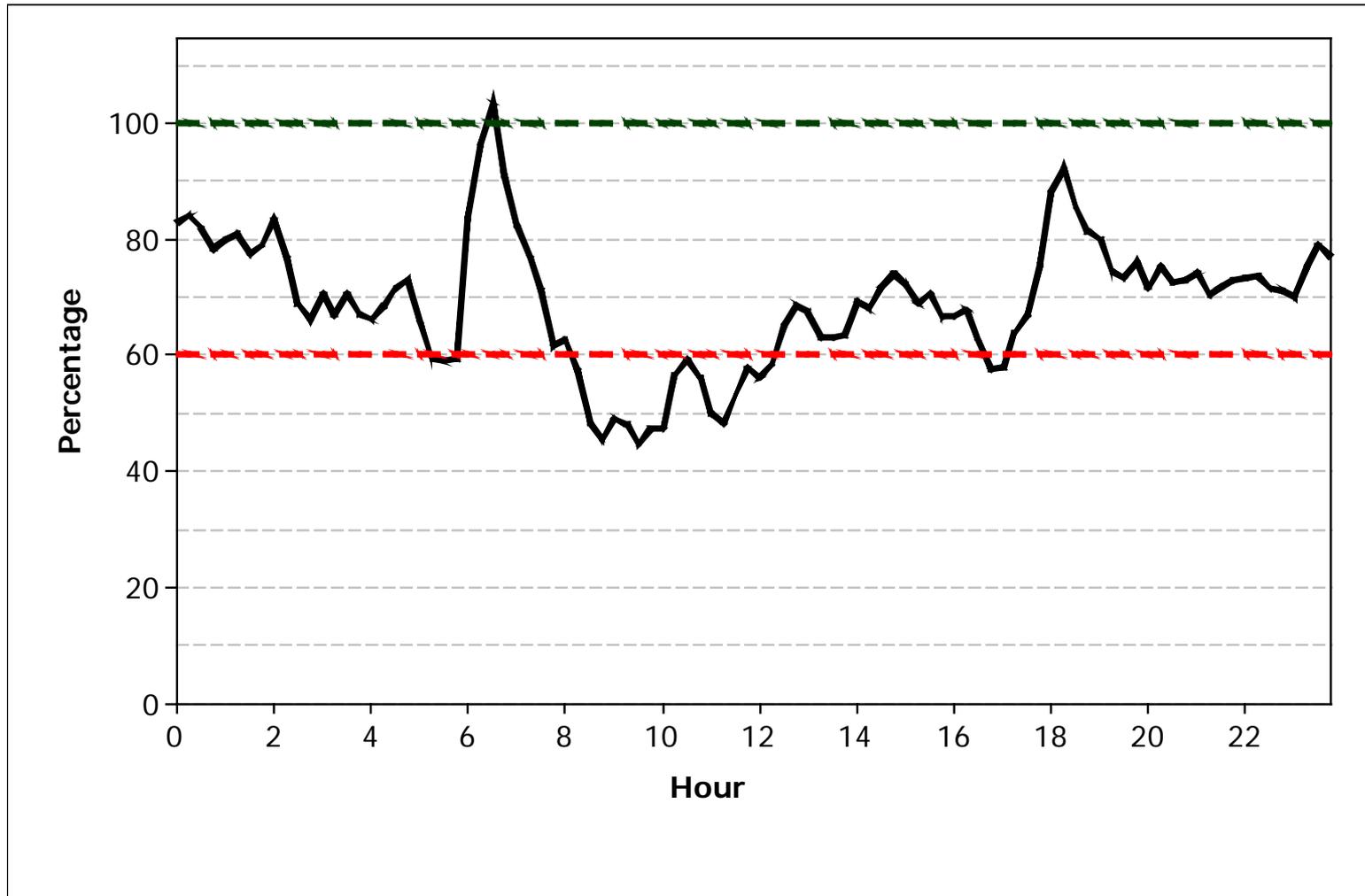


Flint - Deployment and Main Workload, Weekends, Summer





Flint - Workload Percentage by Hour, Weekends, Summer



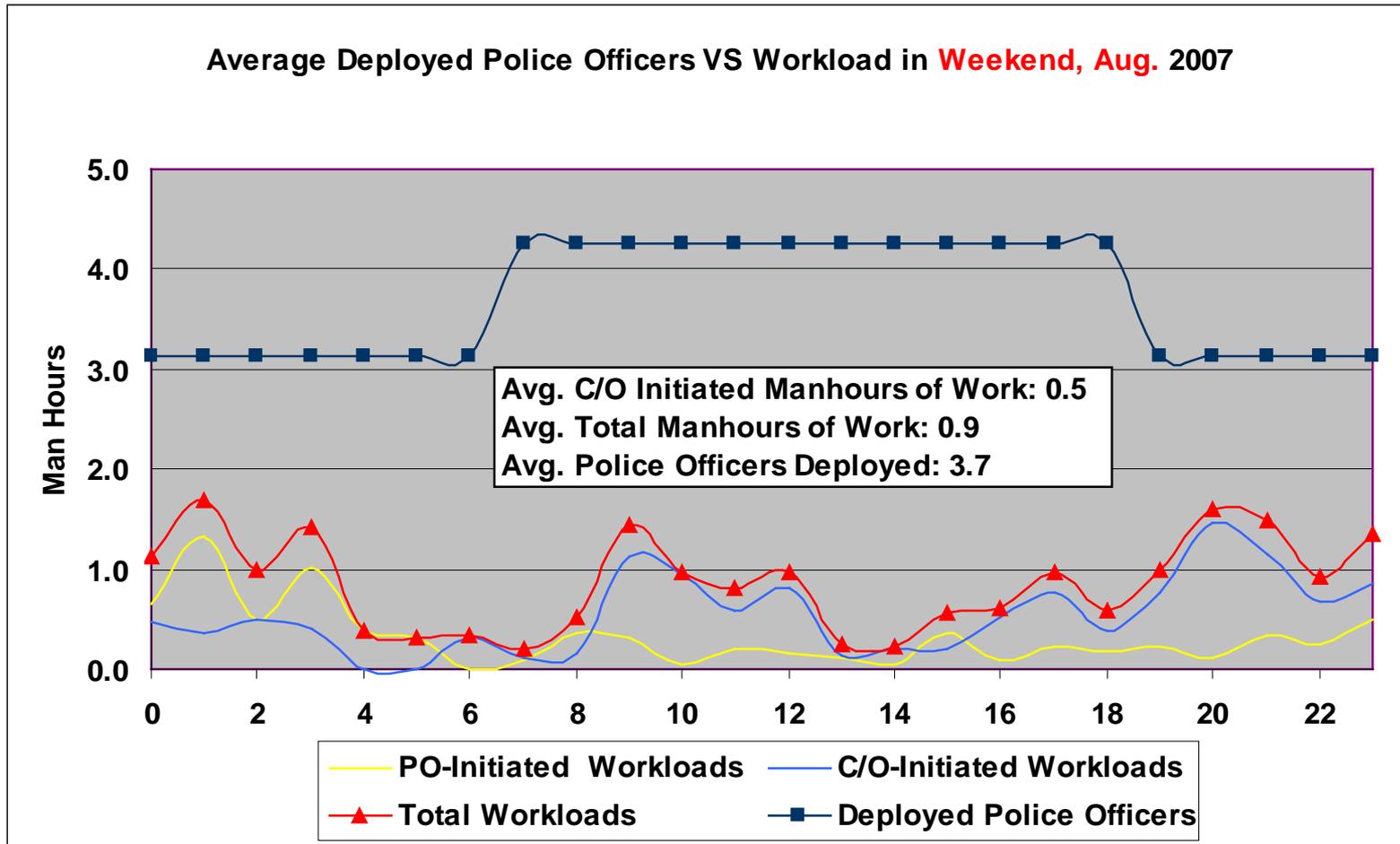


Flint - Workload v. Deployment – Weekends – Summer

Avg. Workload:	7.1 off / hour
Avg. % Deployed (SI):	69 percent
Peak SI:	103 percent
Peak SI Time:	6:30 a.m.

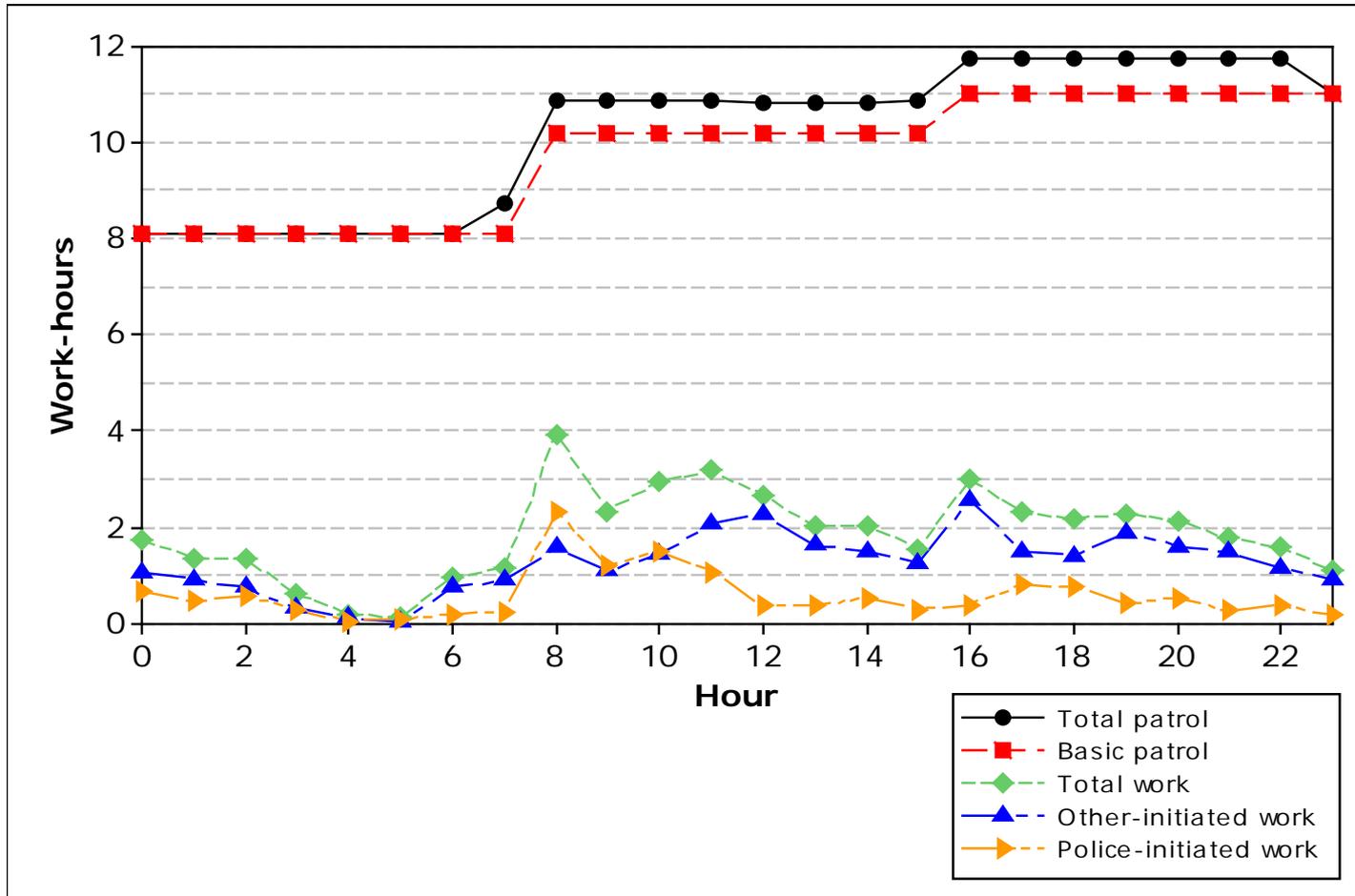


We need more!





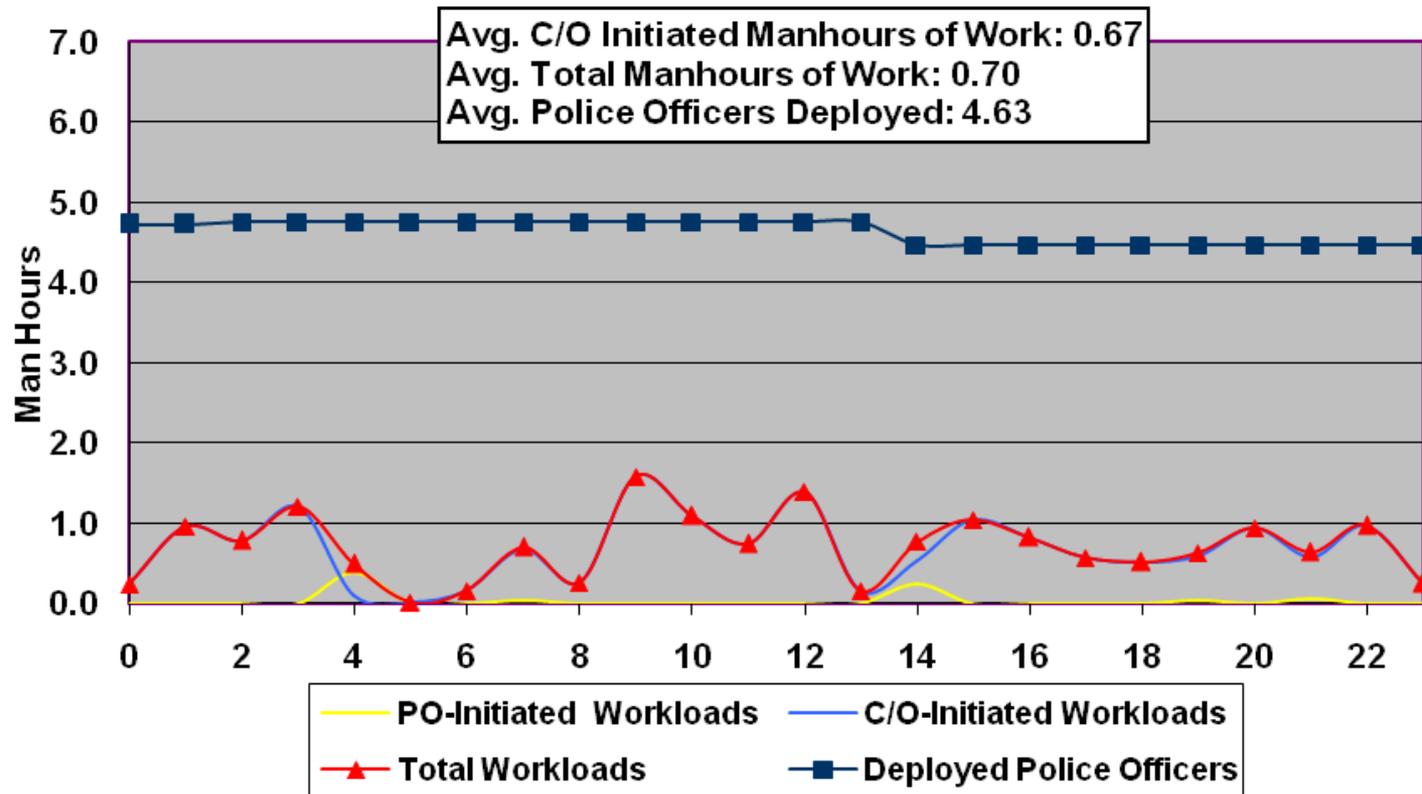
Percentage of Patrol Time Busy





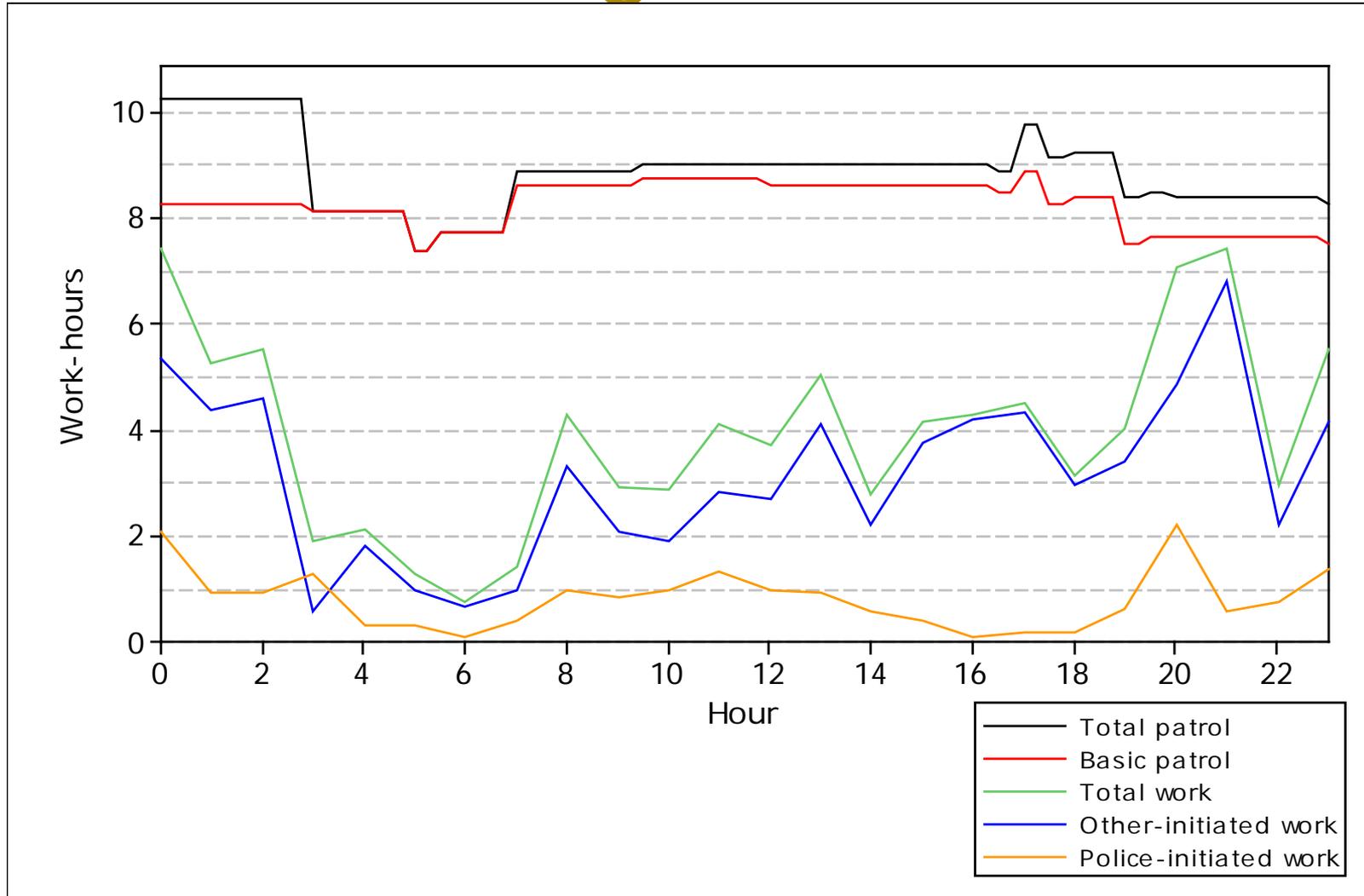
We need LOTS more!

Avg. Deployed Police Officers VS Workload in **Weekend, Aug. 2007**





Who's watching the store?





A Center for Public Safety Management White Paper

- An analysis of police department staffing:
How many officers do you really need?
- A Review of 62 Police Agencies Analyzed by the ICMA /
CPSM
- Center for Public Safety Management



Questions to Determine if you have a well managed patrol force



Complete and Accurate Records

- Are all activity times recorded including stops & arrests?
- Are Daily logs reviewed by supervisors?
- Does Final Record reflects final call disposition?
- Do Data on activities & effectiveness of Community Oriented Policing?



Data Analysis

- Is workload type and variations reported: daily and seasonally & supervisors know this information?
- Are response times recorded by call priority & do supervisors know this information?
- Is there a comparative analysis of performance across patrol sectors?
- Is Field Interrogation (FI) information recorded properly and readily accessible?



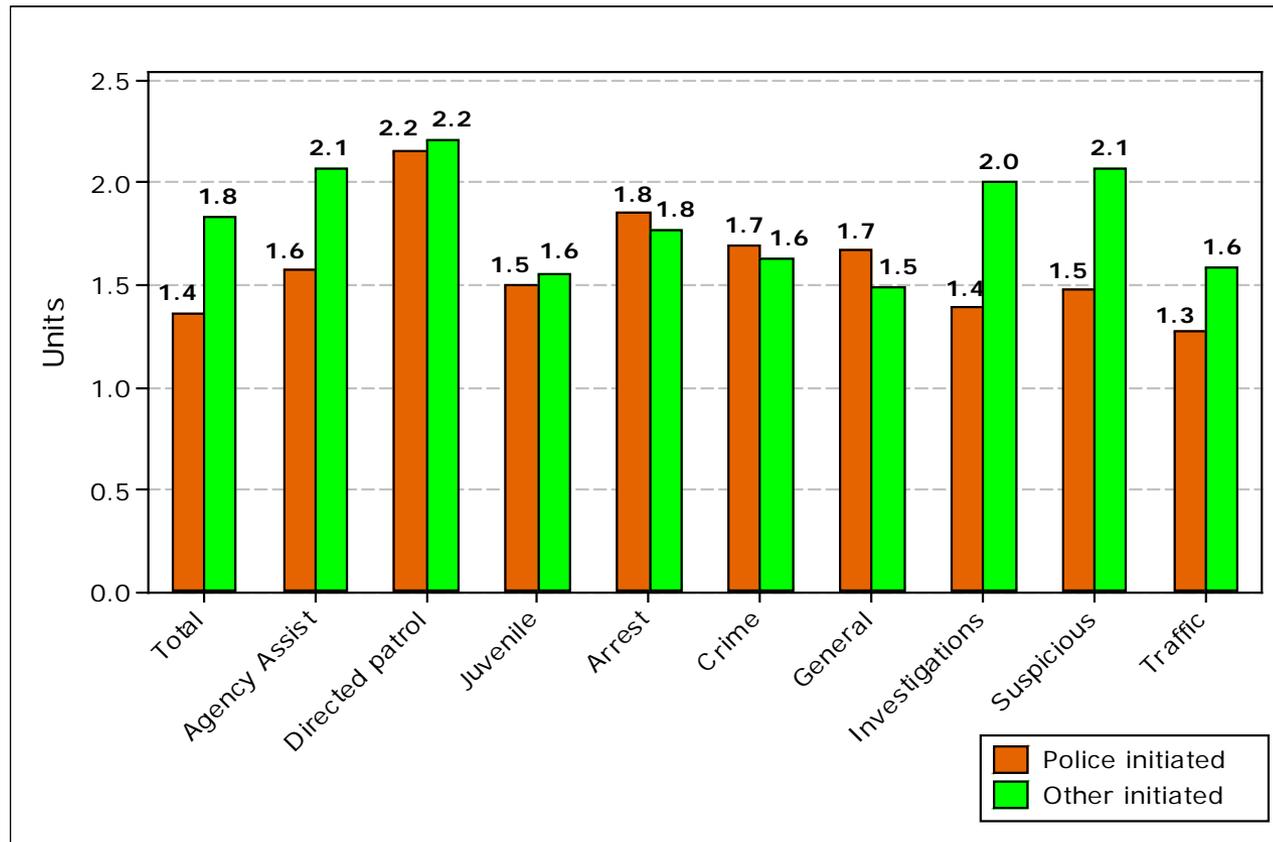
Actively Managed

- Are vacation days controlled?
- Is multiple unit dispatching controlled?
- Are unusually long on-scene times noted?
- Are unusually long response times reviewed?
- Do you have a meaningful false alarm ordinance and is it enforced?
- Do patrol levels vary according to workloads by time of day and season of year?



Command & Control of Field Units

- Average Number of Responding Units





How about technology?

- Is there a deferred CFS management system (DPR)?
- Are there AEDs in patrol units and are police simultaneously dispatched to cardiac calls??
- Do you have Automatic LPRs?
- Is report writing electronic and can officers write reports from vehicles?
- Are there In-car AV systems? Body Cameras? How is record captured and stored?



Actively Managed II

- Is Time between calls not just random patrol?
 - Intelligence data support focused patrol & COPS
 - Activities reviewed regularly
- Does patrol interact regularly with detective division and special operations units e.g. attend roll calls?
- Does patrol interacts with other city agencies?
- Are there strategies for locations with large numbers of repeat calls?



How about crime prevention?

- What kind of crime prevention programs does your department participate in?
 - Residential and commercial security?
 - Auto theft prevention?
 - Personal safety?
 - Block watchers?
 - Anything?



Signs of a well-managed investigative function



Actively Managed Investigations

- Is there a case management system?
- What is the caseload?
- Are clearance rates recorded and tracked?
By unit, by investigator?
- What kind of intelligence gathering is conducted?
- What is the relationship between the investigators and patrol officers?



Do You Have High Liability Policies?

- Use of force?
- Vehicle pursuits?
- Emotionally Disturbed persons?
- Biased policing?
- Employee Assistance Programs?
- Domestic violence?
- Prisoner processing?
- Property processing?
- Professional standards integrated?



Summary

- A lawyer's stock in trade is his time – same for police departments.
- Workload & schedules should drive staffing decisions.
- % Non committed time is a policy issue that ultimately determines total staffing.
- Reducing “workload” by improving efficiencies (DPR, multiple unit dispatching, etc.) can be more effective than seeking additional staff.