



KING COUNTY AUDITOR'S OFFICE

King County Sheriff's Office Overtime: Better Strategy Could Reduce Hidden Costs and Safety Risks



King County

JUSTIN ANDERSON
PETER HEINECCIUS
MIA NEIDHARDT
BROOKE LEARY

JUNE 27, 2017

EXECUTIVE SUMMARY:

The King County Sheriff's Office (KCSO) relies on overtime to meet staffing and training requirements for patrol. However, working long hours can have adverse effects on officer safety and performance. KCSO has limited opportunities to reduce total overtime without hiring more officers, but it can take steps to modify schedules to more efficiently meet training needs. In addition, KCSO can take steps to prevent individual officers from working too many hours. Although KCSO has good controls in place to prevent overtime fraud, King County has been paying two overtime premiums since 2012 when only one is required by federal law, resulting in up to \$5.5 million in unnecessary payments in the past five years. We make recommendations for KCSO to reduce potential safety and performance issues and for King County to stop making unnecessary payments.

King County Sheriff's Office Overtime: Better Strategy Could Reduce Hidden Costs and Safety Risks

REPORT HIGHLIGHTS

What We Found

Although overtime is less expensive than increasing staffing levels, high amounts of overtime can have negative impacts on officer health, policing performance, and community safety. We found that as King County Sheriff's Office (KCSO) officers work more overtime, their chances of having negative incidents—such as complaints and vehicle accidents—increase exponentially. Since KCSO does not limit how many hours officers can work, some officers are working far more than most experts recommend. This presents risks to officer safety and health and increases potential claims against the County.

The most common reason for overtime at KCSO is to “backfill” shifts when officers are on leave or at training. Hiring more staff could reduce backfill overtime, but it would be more expensive. Alternatively, KCSO could modify patrol schedules to help manage and control the need for backfill.

Since 2012, King County has overpaid overtime premiums to KCSO employees by an estimated \$5.5 million. The County is paying two separate overtime premiums when it is only required to pay one by federal law. These overpayments began when the County adopted a new payroll system. The new system automatically calculates the required overtime premiums, but the County decided to keep paying the old premium calculation in addition to the new one. King County officials agree that the premium overpayments need to stop.

What We Recommend

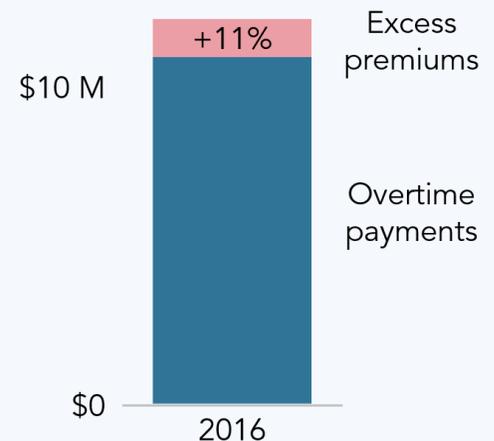
We make 12 recommendations to improve KCSO's safety and efficiency, including that KCSO limit how many hours patrol officers can work in order to more evenly distribute overtime among officers. KCSO should also create a staffing model to accurately reflect current resources and consider alternative schedules that could reduce overtime. Finally, King County should eliminate the overpayment of overtime premiums.

Why This Audit Is Important

KCSO currently relies heavily on overtime to meet patrol staffing and training requirements, spending about \$7 million per year on overtime. Although overtime is generally less expensive than hiring additional officers, it can have hidden costs. Policing is a high-profile and dangerous job that requires officers to be alert and use good judgment. Overtime, when used in excess, can inhibit these essential skills.

In this audit, we assess the impact of overtime on safety and risk, evaluate internal controls, and explore staffing strategies to reduce backfill overtime.

Excess premiums increased overtime costs by \$1.2 million in 2016.



King County Sheriff's Office Overtime: Better Strategy Could Reduce Hidden Costs and Safety Risks

TABLE OF CONTENTS

- 1 Safety and Performance Consequences of Overtime
- 10 Strategies for Reducing Backfill Overtime
- 18 Inaccurate Overtime Compensation
- 21 Internal Controls for Overtime Management

APPENDICES

- 28 Appendix 1 Regression Methodology & Results
- 34 Appendix 2 KCSO General Orders Manual: Overtime Assignment
- 36 Appendix 3 Staffing Model
- 41 Appendix 4 Overtime Requirements & Overtime Premium Formulas
- 45 Sheriff's Response
- 52 Executive Response
- 54 Statement of Compliance, Scope, Objective & Methodology
- 55 List of Recommendations & Implementation Schedule



Safety and Performance Consequences of Overtime

SECTION SUMMARY

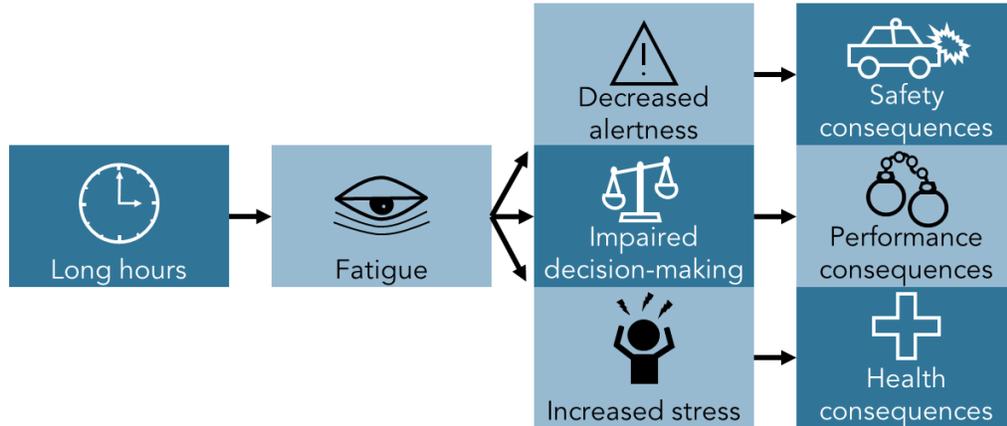
Long work hours can have negative impacts on safety and performance, and the King County Sheriff's Office (KCSO) does not limit how much overtime officers can work. Working more hours can increase officer fatigue, which we found increases the chances of car accidents, injuries, and uses of force. Departments can reduce the risk of overtime by spreading overtime shifts across many officers rather than allowing a few officers to work large amounts of overtime. However, KCSO does not currently have any limitations on how many hours officers can work, and the KCSO system for assigning officers to overtime shifts does not sufficiently prioritize safety considerations. In addition, KCSO does not track hours that officers work for other employers in its scheduling system, so supervisors do not know how many total hours an officer has worked in a certain period. This information could affect decisions about which officers to choose for overtime shifts.

Overtime can negatively affect officer safety, health, and performance

Long work hours and fatigue can have negative effects on officer safety, health, and performance. Many studies have found that working more hours increases officer fatigue, and that fatigue negatively affects both officers and the communities they serve.¹ Fatigue increases the risk of accidents and other safety incidents, such as decreasing officer alertness, impairing decision-making ability, slowing down reaction time, and limiting hand-eye coordination. Fatigue also harms work performance by weakening memory, lowering an officer's frustration tolerance, and increasing stress, burnout, and absenteeism. Finally, fatigue can have long-term health implications for officers, including increased blood pressure, hypertension, metabolic syndrome, and obesity, as shown in Exhibit A.

¹ Including Vila et al., 2002. Improving shift schedule and work-hour policies and practices to increase police officer performance, health, and safety; and Lindsey, D., 2007. Police fatigue: An accident waiting to happen

EXHIBIT A: Long work hours have negative effects on officer safety, performance, and health.



Source: King County Auditor’s Office representation of findings from multiple studies.

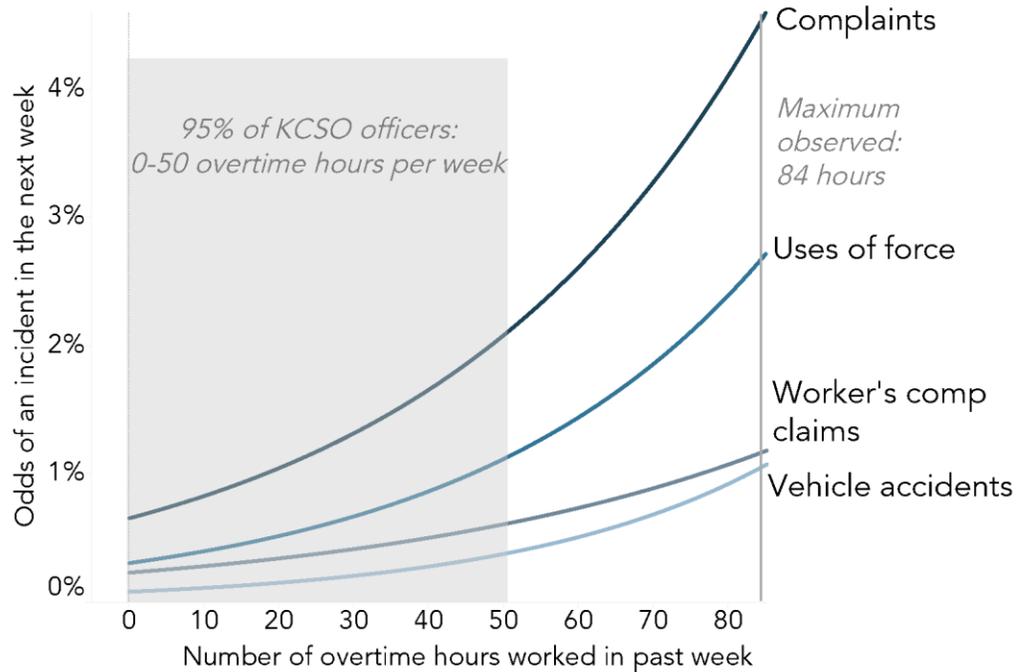
Medical studies have found that the effects of fatigue on driving are similar to those of alcohol. Since unincorporated King County covers a large geographic area, patrol officers spend a lot of time driving between calls for service. Eighteen hours without sleep produces impairments equivalent to having a blood-alcohol content (BAC) of 0.05 percent, while 24 hours without sleep is equivalent to a BAC of 0.1 percent.² In the state of Washington, it is illegal to drive with a BAC of 0.08 percent, or 0.04 percent while driving a commercial vehicle.

As KCSO officers work more overtime, the chances of workers’ compensation claims, vehicle accidents, use of force incidents, and complaints across KCSO all increase exponentially. Our analysis of KCSO data showed that the negative effects of long hours are present in KCSO.³ We found that the hours of overtime worked (on top of regularly scheduled hours) have a statistically significant relationship with both safety and performance incidents, as seen in Exhibit B.

² Vila, B., 2009. Sleep deprivation: What does it mean for public safety officers?

³ We performed a regression analysis to evaluate the impact of additional hours worked on the likelihood of incidents including uses of force, vehicle accidents, vehicle pursuits, ethics incidents, and firearm discharges, as well as workers’ compensation claims. The analysis assessed hourly KCSO officers, including unincorporated patrol, criminal investigations, contract cities, and special operations for the time period of 2014 to 2016. See Appendix 1 for methodology and detailed regression results.

EXHIBIT B: As a KCSO officer works more hours of overtime, the risk of a use of force incident, workers' compensation claim, or car accident increases exponentially.



Source: King County Auditor's Office analysis of PeopleSoft and off-duty data for all KCSO officers during 2014-2016.

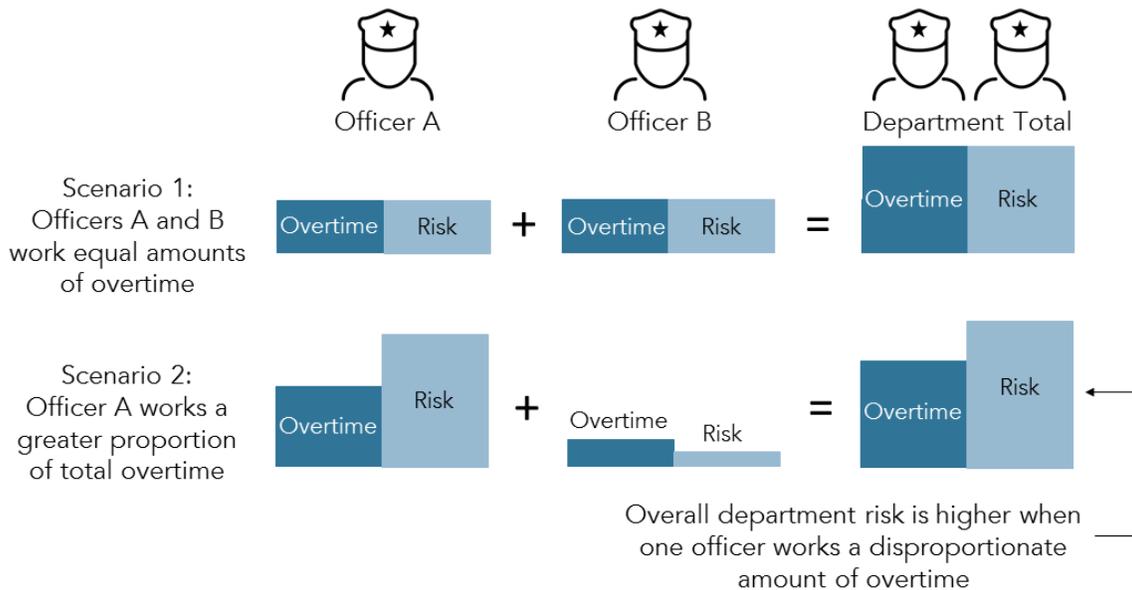
For instance, if an officer works four additional hours of overtime in a week, the odds they will have a negative incident in the following week increase by 12 percent (negative incidents include accidents, uses of force, ethics violations, professionalism complaints, and other incidents tracked internally by KCSO). More specifically, the odds that they will file a workers' compensation claim in the following week increase by 8 percent, the odds that they will be involved in a work-related car accident increase by 13 percent, and the odds that they will be involved in a use of force incident increase by 11 percent. In addition, the odds they will commit an ethics violation increase by 13 percent and the odds they will receive a complaint increase by 10 percent. Finally, the odds they will discharge a firearm increase by 15.2 percent.

The chance of an event happening in a given week are still low—for example, the odds of having any negative incident recorded in a week are about 1.5 percent if the officer worked no overtime in the prior week, while the odds increase to 1.6 percent for an officer who worked four hours of overtime in the prior week. At a more extreme level, an officer who worked 40 hours of overtime in a week would have 4.4 percent odds of a negative incident. See Appendix 1 for full results of our analysis.

Risk increases when officers work disproportionate amounts of overtime

As a result of this exponential relationship, department-wide risk increases when overtime hours are concentrated among a few officers. With a given amount of total overtime, departments can reduce risk by allocating overtime across multiple officers as demonstrated in Exhibit C. For example, it is safer for 16 hours of overtime to be divided among four officers in four-hour periods than for one officer to work all 16 hours. KCSO already divides most overtime assignments into four and five hour shifts, but it does not limit how many shifts an officer can work.

EXHIBIT C: Department-wide risk increases when some officers work a larger proportion of overtime hours than other officers.



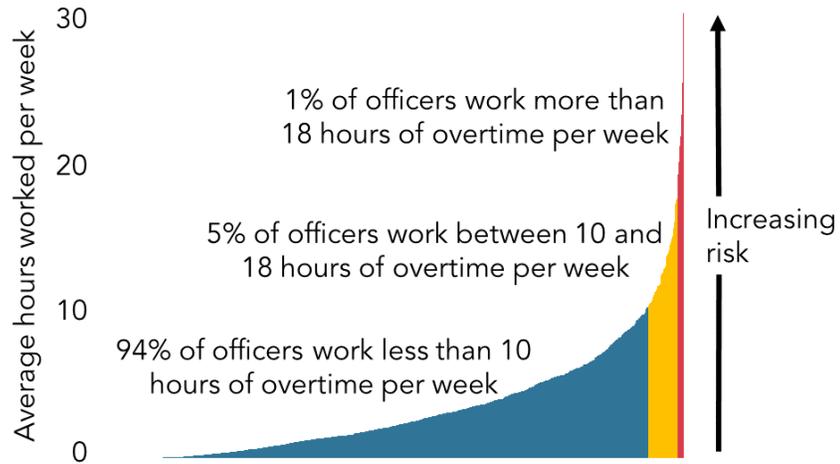
Source: King County Auditor’s Office

Some KCSO officers regularly work a large amount of overtime

On average, KCSO officers work three hours of overtime per week, and some work significantly more.⁴ While more than 94 percent of officers work an average of 10 hours or fewer hours of overtime per week, the top 1 percent work an average of at least 18 hours of overtime per week (Exhibit D). KCSO officers who average 18 hours of overtime have 25 percent higher chance of negative performance incidents and 17 percent higher chances of safety incidents in an average week than those working 10 overtime hours per week (1.9 percent odds versus 2.4 percent odds).

⁴ Based on all hourly KCSO officers, including patrol, criminal investigations, contract cities, and special operations.

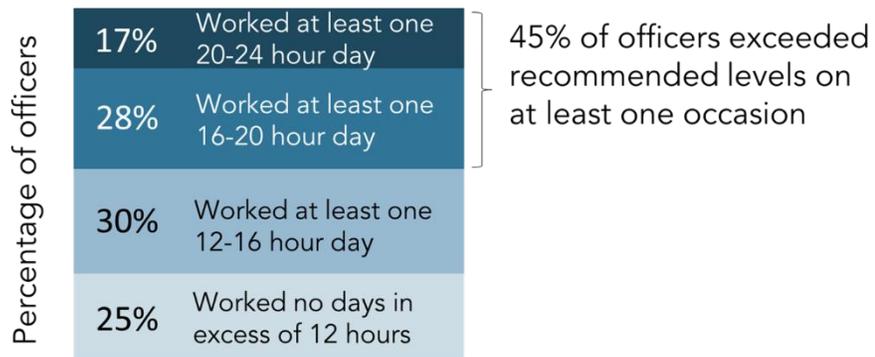
EXHIBIT D: A small group of KCSO officers is working a large proportion of total overtime hours.



Source: King County Auditor’s Office analysis of PeopleSoft and off-duty data for all officers during 2014-2016.

Although few officers work extreme levels overtime on a regular basis, many officers occasionally work very long hours. It is not only the top one percent of officers who are at higher risk of negative incidents (although they are at a higher risk more often). In 2016, about 45 percent of KCSO officers worked at least one 16-24 hour day as shown in Exhibit E, which represents 8-16 overtime hours.⁵

EXHIBIT E: Almost half of KCSO officers have worked 16 hours or more in a day.



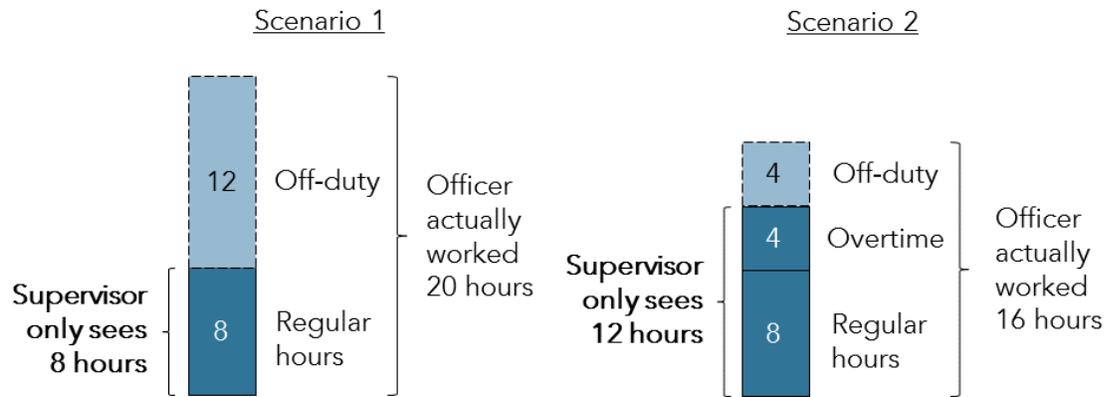
Source: King County Auditor’s Office analysis of PeopleSoft and off-duty data for all KCSO officers during 2016.

⁵ Assuming an eight-hour normal work schedule.

KCSO does not sufficiently track off-duty hours

The KCSO scheduling system does not track how many hours officers are working at jobs outside of KCSO, so supervisors do not know how much officers have worked as they are deciding who will be given an overtime assignment. KCSO allows employees to work “off-duty” for private employers in security functions, and it does not directly track how many hours officers work for these employers. Instead, the King County Police Officers Guild—the labor union that represents officers—coordinates with private employers and allocates off-duty assignments to officers. While KCSO does track a rough estimate of off-duty hours worked for vehicle reimbursement and other internal purposes through its intranet site, this information is not incorporated into the KCSO time and labor reporting system. As a result, supervisors do not know how many hours an officer has worked leading up to a shift. For instance, if an officer worked 8 hours of regular time followed by 12 hours of off-duty security, the supervisor would only know about 8 out of the 20 total hours worked, demonstrated in Exhibit F, Scenario 1. Or, if an officer worked 8 hours of regular time, 4 hours of overtime, and 4 hours at a Seahawks game, the supervisor would only know about 12 out of the total 16 hours worked, as shown in Exhibit F, Scenario 2. This means that supervisors may select an officer for a new overtime shift who has already worked more than the supervisor thinks is safe.

EXHIBIT F: Supervisors do not know how many total hours an officer works in a day, because they do not have access to off-duty information.

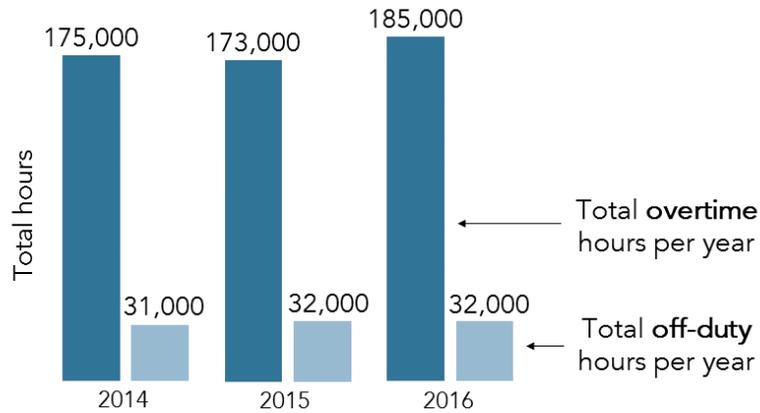


Source: King County Auditor’s Office

In 2016, KCSO officers worked at least 32,000 total hours of off-duty work for employers other than KCSO.⁶ Although KCSO officers work significantly less off-duty work than overtime overall, shown in Exhibit G, off-duty hours can have a big impact on total hours worked per day at the individual level, as demonstrated in Exhibit F. Most KCSO officers worked little to no off-duty in 2016 (over half did not work any off-duty), but over 50 officers worked at least 200 hours of off-duty in 2016.

⁶ We compiled this information based on computer-aided (CAD) dispatch call-ins, provided by KCSO billing. See Appendix 1 for additional information on our methodology.

EXHIBIT G: Off-duty work represents about 15 percent of officer overtime hours per year.



Source: King County Auditor’s Office analysis of off-duty data from 2014-2016.

In contrast, three peer jurisdictions that we interviewed directly manage off-duty jobs or internally track off-duty hours. San Diego County, California runs all uniformed “off-duty” work through its county administration as regular overtime and prohibits officers from working in uniform for other private events. Pima County, Arizona runs most of its overtime through its department and requires that supervisors receive notice for all off-duty shifts. Snohomish County, Washington tracks off-duty hours, but its officers’ guild still manages off-duty assignments. Representatives from these jurisdictions said that tracking off-duty hours is important, because it helps supervisors ensure that officers are working safe amounts of hours, and that off-duty employment does not affect normal work.

Recommendation 1

The King County Sheriff’s Office should ensure that off-duty hours are tracked in its scheduling program.

KCSO does not limit overtime through caps or officer prioritization

KCSO does not have any limits on how many hours officers can work. Different sources, including academic literature and police departments, recommend different limits on the amount of hours per day an officer should work, ranging from 12-19 hours. KCSO supervisors we interviewed most commonly recommended working no more than 16 hours per day to allow an eight-hour rest period.⁷

⁷ Most KCSO supervisors and managers differentiated between detectives and patrol officers. They explained that long working hours are sometimes necessary for detectives during a criminal investigation. It is not efficient for this type of operational overtime to be divided among multiple officers because cases need continuity. Patrol, however, does not inherently require long work hours.

Three of the five comparison jurisdictions⁸ we interviewed have policies that cap how many hours an officer can work over certain time periods. To prevent officers from working an unsafe number of hours, both Pima and Los Angeles counties place limits on the number of hours officers can work both in a given day and in a given week, as shown in Exhibit H. Department representatives explained that officer safety and department liability concerns were the main motivations behind the policies. Besides having limits on regular overtime hours officers can work, Pima and Snohomish counties limit how many off-duty hours an officer can work.

EXHIBIT H: Three peer jurisdictions limit how many hours an officer can work during different periods.

Sheriff Office or Department	Short-Term Cap	Long-Term Cap	Off-Duty Cap
PIMA COUNTY	No more than 16 hours in a 24-hour period ⁹	No more than 64 hours per week	No more than 24 hours per week
LOS ANGELES COUNTY	No more than 19 consecutive hours; No more than 12 hours the day before or after a 16-hour day	No more than 12 consecutive days worked	None
SNOHOMISH COUNTY	None	None	No off-duty that would push total hours worked above 12 hours in a 24-hour period

Source: King County Auditor’s Office

KCSO’s process to select officers for overtime assignments does not emphasize safety considerations. The KCSO General Orders Manual (GOM) specifies criteria for how supervisors should go about selecting officers to work overtime shifts, including work location, amount of overtime worked in the prior week, and amount of overtime worked in the prior 24 hours.¹⁰ The overtime considerations, however, have less weight than work location (the precinct or contract city where an officer is regularly assigned), which is treated as the primary criterion. For example, if one officer from a precinct applies for an overtime shift in that same precinct, they would receive top priority over other officers that express interest in working the shift regardless of how many hours they had already worked.

⁸ Los Angeles County, Pima County, San Bernardino County, San Diego County, and Snohomish County.

⁹ Does not restrict on-duty hours in cases of operational necessity or special circumstances.

¹⁰ See Appendix 2 for more detail.

In the past, supervisors requested this information from officers who were interested in working the overtime shift. However, KCSO now uses an automated tool that will automatically rank officers for overtime shifts based on the GOM directions. This tool will continue to prioritize officers from the same work location above all other criteria. Furthermore, the prioritization tool will not account for off-duty hours, so it will not accurately reflect how many hours an officer has already worked.

Recommendation 2

The King County Sheriff's Office should incorporate total hours worked, including off-duty hours, into the overtime assignment criteria.

Recommendation 3

The King County Sheriff's Office should implement a policy to limit how much overtime an individual can work, for example, capping total hours worked or changing the prioritization structure of the overtime assignment system.

Strategies for Reducing Backfill Overtime

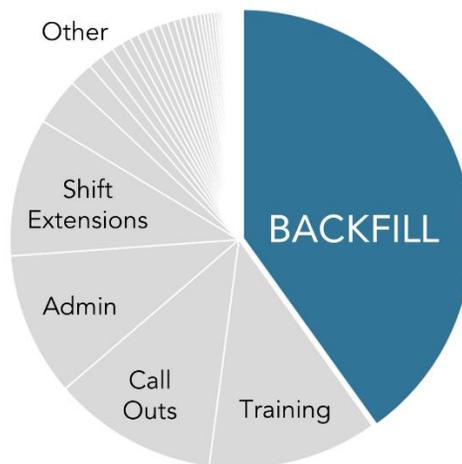
SECTION SUMMARY

Overtime at KCSO is primarily driven by staffing levels, but KCSO management could reduce overtime without hiring more deputies. Overtime has a variety of beneficial operational uses, but a large part of overtime at KCSO is simply backfilling deputy absences. While it is less expensive to use overtime to fill shift vacancies than it is to hire more staff, KCSO relies on backfill in unincorporated patrol much more than contract cities or comparison jurisdictions. Over half of this backfill is caused by deputies going to training, which KCSO could manage better if there were more overlapping shifts. KCSO could increase the number of days with overlapping shifts by reducing how often patrol deputies' schedules rotate. KCSO could also reduce backfill overtime by using a staffing model to plan trainings to occur on those overlapping days. KCSO has tried reducing overtime costs by temporarily reassigning officers to understaffed locations, but in practice these strategies have had negative consequences to operations, and it is unclear whether they reduce overall costs.

Primary reason for overtime is backfilling absences

KCSO spends over \$7 million per year on overtime and uses it for a wide variety of reasons. For example, if officers make an arrest near the end of their shift, they might need to extend their shift an hour to finish filing a report. Alternatively, a detective might be called out to investigate a major crime on their scheduled day off. Special emphasis patrols to catch impaired drivers might need additional deputies beyond normal staffing. However, the most common reason for overtime at KCSO occurs when an officer is unavailable and another officer must work overtime to cover the first officer's shift. This is known as "backfill" overtime, and it accounts for approximately 40 percent of KCSO's total overtime, as shown in Exhibit I, below.

EXHIBIT I: Backfill is most common reason for overtime hours at KCSO.



Source: King County Auditor's Office analysis of PeopleSoft data during 2014-2016.

Backfill overtime in patrol is driven by staffing levels

KCSO spends around \$3 million per year on backfill overtime to make sure that its stated minimum number of officers are on duty. Patrol of unincorporated King County makes up over half of this backfill use (around \$1.8 million per year). For officer safety and emergency response reasons, KCSO requires that a minimum number of patrol deputies must be on duty at any given time in each unincorporated precinct.¹¹ When not enough deputies are scheduled to be on duty, supervisors meet these staffing minimums by having other officers backfill shifts using overtime. Unincorporated patrol uses almost twice as much backfill overtime per officer as the county's contract partners, even though officers in unincorporated patrol are sick or on vacation less often.¹² This is partially because there are often not enough deputies left on duty to meet minimums when unincorporated patrol deputies go to trainings.

Backfill is less expensive than hiring more deputies, but has downsides

Hiring more staff would reduce the need for backfill, but for KCSO, hiring additional patrol deputies is always more expensive than using overtime. This is because the cost of hiring an additional officer includes health and retirement benefits, a patrol car, and other fixed costs. Based on the current costs to hire a patrol deputy, these fixed costs always make it more cost effective for KCSO to use overtime for patrol-related backfill needs. On average, it costs \$80 to pay for an hour of patrol activities using overtime, but it costs \$103 if hiring another deputy (not including the costs for recruiting and training).

There are important non-financial benefits to reducing backfill overtime. As detailed in the first section of this report, allowing some officers to work long overtime hours can have negative impacts on safety and performance. This means it is still important for KCSO to manage and control the amount of backfill overtime it uses. KCSO employees consistently said that there was more overtime available in King County than in other jurisdictions, enough that deputies could work as much overtime as they wanted. There is so much overtime available that supervisors reported that it is sometimes difficult to find volunteers. In these cases, supervisors must use mandatory overtime—where a supervisor requires that a deputy must fill a shift—to meet staffing minimums. Sergeants stated that this mandatory overtime can have serious negative impacts to morale. Unlike King County, most of the peer jurisdictions we interviewed do not rely heavily on backfill overtime as a staffing strategy for patrol operations.

¹¹ Unincorporated patrol is broken out into three precincts. The minimum number of patrol deputies on duty at any time is six for the north precinct, eight for the southeast precinct, and six for the southwest precinct.

¹² From 2014 to 2016, the amount of backfill overtime per patrol deputy in unincorporated King County has been 90 percent more than the county's contract cities and agencies. During this same time period, the amount of absences (e.g., for vacation, sick, or compensatory leave) among unincorporated deputies has been 17 percent less than contracted deputies.

Backfill is caused by deputies being absent

Backfill overtime in unincorporated patrol occurs when deputies are on leave or assigned elsewhere, and there are not enough other deputies to meet patrol minimums.¹³ The reasons deputies are absent fall into two broad categories. First, deputies take vacation, sick leave, or other types of leave. Second, KCSO sends patrol deputies to attend trainings or perform other non-patrol duties. Based on payroll data and our own modeling, we estimated that 40 percent of backfill is caused by deputies taking leave, while the remaining 60 percent is due to patrol deputies going to trainings or other assignments.

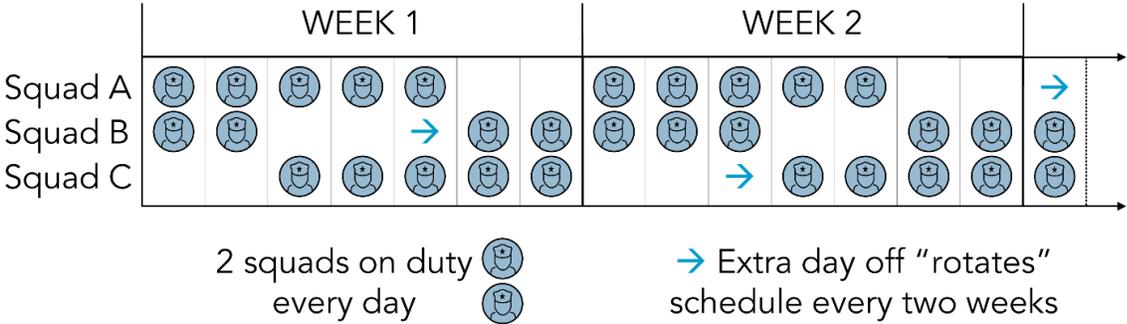
Alternative schedules could allow managers to reduce backfill

KCSO could better control the amount of backfill overtime needed to meet staffing minimums by modifying deputies' schedules. In theory, KCSO supervisors have more control over when to conduct trainings than they do over when deputies take leave, so KCSO could have opportunities to better manage the amount of backfill caused by trainings. However, this type of management takes active planning and coordination to limit backfill overtime effectively, and it also requires flexibility that the current patrol schedule does not provide. The following paragraphs outline the two primary ways KCSO could increase flexibility in its patrol schedule: by reducing how often the schedule rotates and by making shifts longer than eight hours.

Unincorporated patrol's rotating schedule efficiently provides 24-hour coverage, but it does not create flexibility that KCSO could use to reduce backfill overtime.

The current patrol schedule uses multiple rotating squads to provide coverage, with each deputy working eight-hour shifts for five days in a row. The current schedule "rotates" by giving officers an extra day off every other week, pushing the start of their workweek to a new day, as shown in Exhibit J, below. This is so that all deputies take turns working Saturdays and Sundays.

EXHIBIT J: Current patrol schedule rotates every two weeks and there are never more than two squads on duty at the same time.



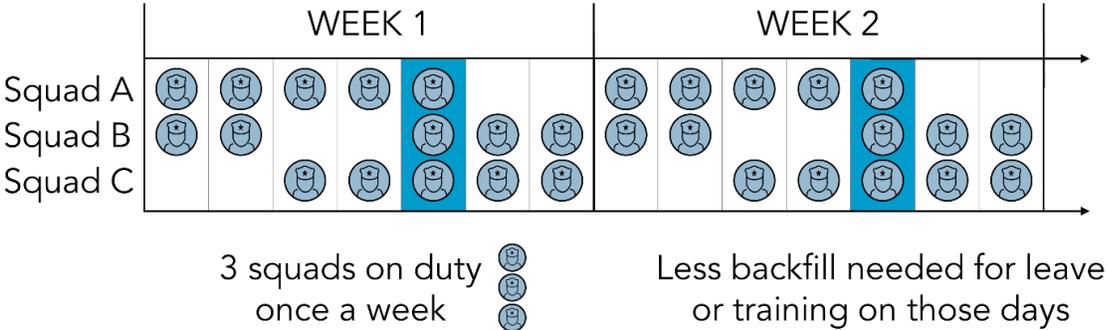
Source: King County Auditor's Office analysis.

¹³ Backfill can potentially occur when there is not enough staff to fill every position, but this is not a cause of backfill in unincorporated patrol. KCSO needs 90 deputies to staff each post 24-hours a day, seven days a week, at current patrol minimums. If KCSO had fewer than 90 deputies, it would need to use backfill even if deputies were never absent. While the actual number of patrol deputies assigned and available for patrol fluctuates, we estimate KCSO had 118 deployable patrol deputies as of December 2016. This means that backfill overtime is due to deputies being absent, not chronic structural deficits.

Reducing rotation frequency reduces backfill overtime

Reducing how often schedules rotate could reduce backfill overtime without requiring more staff. If the current schedule rotated less frequently, then there would be days where every squad would be working on the same day, greatly increasing the number of deputies available that day. Exhibit K, below, illustrates how all three squads could be on duty once a week. Not only would this make it less likely that backfill would be necessary if a deputy took leave, KCSO could also potentially conduct trainings without needing to use backfill overtime.

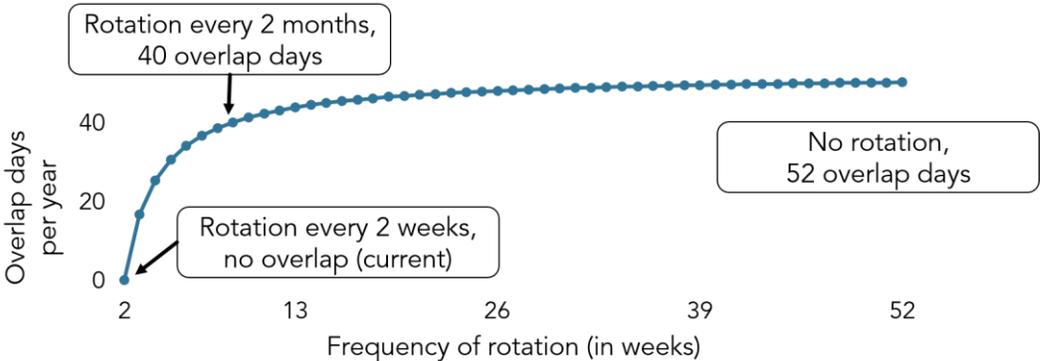
EXHIBIT K: KCSO could reduce backfill by scheduling trainings when all squads are on duty.



Source: King County Auditor's Office analysis.

It is not necessary to fully eliminate rotation in order to gain benefits of having all squads on duty. For example, if KCSO eliminated rotation entirely in unincorporated patrol, all three squads would be on duty one day every week (e.g., 52 days of overlap per year). This could be a standard 5/8 schedule, which the Sheriff and the management team have stated KCSO has tried in the past, with negative impacts to morale. However, if schedules rotated every two months instead of every two weeks, it would still create 40 days of overlap per year. Exhibit L, below, shows the relationship between rotation and the number of days where all squads would be on duty.

EXHIBIT L: Reducing rotation to once every two months creates 40 days of overlap per year, which KCSO can use to reduce backfill overtime.



Source: King County Auditor's Office analysis.

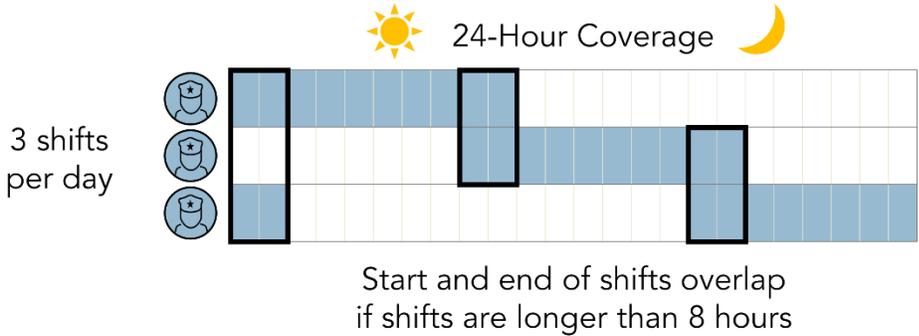
Recommendation 4

The King County Sheriff’s Office should reduce how often unincorporated patrol schedules rotate to create more days with overlapping squads on duty.

Increasing shift length creates a different type of overlap

If deputies worked more than eight hours in a day, the beginning of one shift would overlap with the end of the prior shift, as shown in Exhibit M, below. For example, a “4/10” schedule is where deputies work 10-hour shifts, four days a week. This is a different type of overlap than having all squads on duty once a week. While this type of schedule gives more flexibility to managers in terms of overlapping shifts, it also requires hiring more deputies to provide the same level of coverage. Without hiring more deputies, switching to a 4/10 schedule would likely increase backfill overtime, since fewer deputies would be on duty when officers take vacation or sick leave. Whether switching to a 4/10 schedule would reduce backfill overtime depends on how effectively KCSO management arranges trainings to coincide with overlapping shifts. If KCSO was able to substantially reduce the amount of overtime used for training, it is possible that switching to a 4/10 schedule could decrease total overtime costs.

EXHIBIT M: Overlapping shifts create opportunities to manage backfill overtime.



Source: King County Auditor’s Office analysis.

Managing backfill with overlapping shifts requires planning

KCSO can actively manage the need for backfill by scheduling training during times when shifts will overlap, but this requires advanced planning and coordinating schedules to align with training opportunities. This first requires basic information about how many deployable deputies are scheduled to be on duty and how many can be expected to be on leave (e.g., sick, vacation, or compensatory leave). Using this information, KCSO could determine what days in the future were likely to have more than enough staff to meet minimums and schedule training accordingly. However, KCSO does not have a centralized staffing plan that accurately captures this information for use in coordinating trainings with overlapping shifts and squads.

KCSO includes non-deployable deputies in its staffing plan

KCSO does not have as many deputies assigned to unincorporated patrol as indicated by its staffing plans, which leads to more backfill overtime than expected. KCSO assumes a certain number of absences will occur and uses a relief factor to increase the number of patrol deputies it assigns to unincorporated patrol.¹⁴ Even though KCSO's relief factor calls for 135 deputies to cover unincorporated patrol minimums, not all of the deputies that KCSO has assigned to patrol can be deployed on patrol. Based on our research, the actual number of deployable deputies assigned to unincorporated patrol is around 118, as of December 2016. This is because the KCSO employee roster includes "non-deployable" deputies, such as injured deputies, or trainees that can only ride along with experienced deputies. Including these non-deployable deputies in its employee count makes it difficult for KCSO management to reliably determine whether target staffing levels are being met.

Recommendation 5

The King County Sheriff's Office should only count deployable deputies when determining how many staff are required to meet patrol minimums in unincorporated King County.

Patrol minimums and relief factor lack written rationales

KCSO lacks documentation for the rationale behind both patrol minimums and the relief factor used to determine target staffing levels. In interviews, KCSO management stated that having fewer deputies than the current minimums on duty would impair KCSO's ability to respond to emergencies or provide backup to other officers in a timely way.¹⁵ However, KCSO was unable to produce any documentation of the minimums or what analysis it used to determine current patrol minimums. Similarly, KCSO has used the same relief factor to set its target staffing levels since 2012, but it could not provide the analysis that it used to calculate this relief factor. This lack of documentation makes it unclear whether patrol minimums or target staffing levels are set appropriately, and reduces KCSO's ability to strategically plan for its staffing needs.

Recommendation 6

The King County Sheriff's Office should document and integrate into its staffing system how it determines patrol minimums for unincorporated King County and how it calculates the relief factor it uses to set staffing targets.

¹⁴ A relief factor is a number that, when multiplied by the base level of staffing, determines what an appropriate number of staff should be to take into account how often employees will be absent or otherwise unavailable to work.

¹⁵ This is reportedly due to the difficulty in traveling among the population centers of unincorporated King County. For example, one precinct includes a literal island (Vashon) as well as two figurative islands of unincorporated urban areas (North Highline and Skyway). Each of these areas requires two deputies on duty to provide timely backup and emergency response.

KCSO lacks a strategic staffing model

KCSO lacks a coordinated staffing model that would allow for effective management of overlap. KCSO management allocates deputies to each unincorporated precinct based on the number of deputies determined by the relief factor. Captains in each precinct make the detailed scheduling and staffing decisions independently, which means there is limited coordination of these decisions across precincts. Since managing backfill overtime would decrease how often deputies are absent for training, these changes should have an impact on the relief factor KCSO uses to determine its target staffing levels. Keeping track of these interactions can be complex, and KCSO management does not have a coordinated model that would allow it to make informed decisions about balancing staffing and overtime.¹⁶ Given the time it takes to recruit, hire, and train new deputies, a staffing model would also help KCSO make sure it will still be able to meet patrol minimums as its current workforce retires.

Recommendation 7

The King County Sheriff’s Office should create a staffing model for unincorporated patrol that accurately reflects both current and future staffing needs, the actual number of deputies that can be deployed to meet patrol minimums, and opportunities to reduce backfill overtime through strategic scheduling.

Sliding or redeploying officers has unclear impact on overtime

KCSO’s current strategies to address backfill are unproven, have unintended consequences, and may not reduce overtime. KCSO has used two systemic approaches to try to decrease the need for backfill overtime. The first method is sliding: supervisors can temporarily move patrol officers from a patrol unit that is above minimum staffing to another unit that is below minimum.¹⁷ While acknowledging that this strategy works on paper, several sergeants explained that deputies often take compensatory time or other leave on days when they know they will be slid, increasing backfill overtime. KCSO’s time and labor system is currently unable to track how often sliding successfully results in less backfill. This means we are unable to determine whether this strategy prevents overtime in practice.

The second method is redeployment: non-patrol officers (e.g., detectives or sergeants) are put “on call” to cover patrol shifts that would otherwise need backfill overtime.¹⁸ This often occurs when there is a high demand for time off, such as in the summer months. However, nearly every sergeant we spoke with stated that redeployment is burdensome and has negative impacts to operations in practice. For example, redeployment can be disruptive to both patrol and non-patrol operations: non-patrol officers can often be unfamiliar with current patrol operations, decreasing their ability to effectively and safely serve as patrol deputies. Furthermore, their work in non-patrol units must either be put on hold or worked using overtime.

¹⁶ Previous Auditor’s Office reports, most recently from 2011 and 2004, included recommendations that KCSO develop a staffing model that would help determine the appropriate levels of staffing and overtime.

¹⁷ This temporary transfer is only for the day when the unit is expected to be below patrol minimums.

¹⁸ Officers are typically “on call” for redeployment for a week at a time. This can involve changing their regular shift schedule to align with a patrol schedule for that week, and then changing back to their regular schedule.

Based on our analysis, the KCSO redeployment efforts in 2016 had the potential to avoid an estimated \$66,000 in backfill costs (around 0.9 percent of total overtime costs). However, this estimate does not include any offsetting costs, such as the cost of delayed non-patrol work or the cost of granting redeployed officers additional furlough days to realign their schedule for redeployment. Without more data, we cannot determine whether the potential cost savings outweigh these negative effects.

Recommendation 8

The King County Sheriff's Office should collect and monitor data on the impact of sliding and redeployment if it continues these strategies to determine whether any potential benefits exceed the operational costs and negative impacts.



Inaccurate Overtime Compensation

SECTION SUMMARY

King County has overpaid KCSO employees' overtime premiums since 2012, resulting in an overpayment of as much as \$5.5 million in that time. Most KCSO employees are hourly workers under the federal Fair Labor Standards Act (FLSA). The FLSA sets requirements for overtime work, including how some overtime pay must be calculated. Before 2012, KCSO's previous payroll system could not accurately calculate FLSA overtime pay. Instead, the County created an "enriched rate" for all KCSO overtime. Because the enriched rate is more generous and applies to more overtime than the FLSA requires, the enriched rate is more costly than the FLSA rate. In 2012, the county's central finance division introduced a new payroll system that calculates the FLSA overtime rate, but the Executive did not eliminate the enriched rate for KCSO employees. As a result, KCSO employees are paid both the FLSA rate and the enriched rate.¹⁹ The County should address the underlying payroll issues and eliminate the enriched rate. According to the Department of Executive Services, the County is currently in collective bargaining to stop this overpayment.

King County has long paid KCSO employees more than the FLSA requires

King County has traditionally paid KCSO employees more for overtime than required by federal law. The FLSA sets the threshold for work that constitutes overtime in a given period—generally, work over 40 hours per week.²⁰ The FLSA also sets requirements for how pay is calculated for overtime work, including a proportional share of premium pay that the employee receives under contract.²¹ Before 2012, the KCSO payroll system could not calculate the FLSA rate.²² Instead, the enriched rate is meant to act as a substitute for the FLSA rate requirement. The enriched rate calculation is more generous than the FLSA rate, as it was intended to limit the county's potential FLSA liability relative to the FLSA's requirements for calculating overtime pay.²³

¹⁹ See Appendix 4 for additional information and analysis of FLSA overtime pay requirements and the enriched rate.

²⁰ Washington State law has similar requirements; for reading ease we refer to the FLSA throughout this section.

²¹ For example, bonus pay an officer receives for particular training, skills, education, and/or longevity. Overtime is paid at time-and-a-half of hourly pay. The difference between the FLSA overtime calculation (including premium pay) and time-and-a-half of regular pay is the FLSA rate.

²² This may be because KCSO hourly employees are paid semi-monthly. Contract provisions pay these employees a fixed wage for their regularly scheduled work twice a month, regardless of the specific number of regular hours worked in the period, which can complicate the calculation of FLSA rates. See Appendix 4.

²³ Penalties for FLSA violations can include civil and criminal actions. For non-payment of overtime, the FLSA provides for liquidated damages of double the amount of unpaid back wages. By making the enriched rate more generous than the FLSA rate, the County arguably limited its liability since it paid more than required.

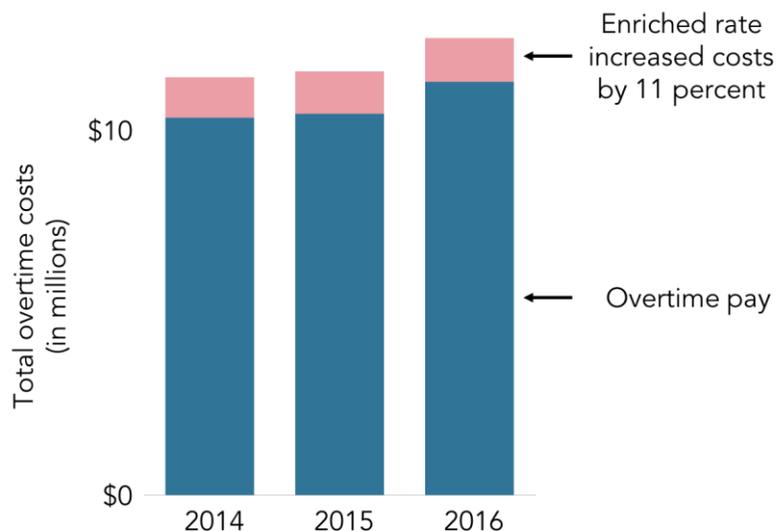
The county’s overtime pay for KCSO employees is more generous than the FLSA requires. Contract terms include more overtime than the FLSA, and the enriched rate pays more than the FLSA overtime rate. KCSO contracts pay overtime for all work in excess of the employee’s regularly scheduled work hours, even when the employee’s schedule calls for less than 40 hours of work in a given week. For example, unincorporated patrol deputies are scheduled to work only 32 hours a week for nearly a third of the year; these deputies receive overtime pay (including the enriched rate) for any work in excess of those 32 hours under the KCSO contract, even though FLSA would only require overtime pay if they worked more than 40 hours. In addition, the enriched rate is more generous than the FLSA overtime rate, and applies to all such overtime, not only FLSA overtime.

Since 2012, KCSO employees have been paid two overtime premium rates

Since the introduction of the PeopleSoft payroll system, KCSO employees have been paid both the enriched rate and the FLSA rate. In 2012, the County’s Finance and Business Operations Division (FBOD) introduced the PeopleSoft payroll system. PeopleSoft automatically calculates and applies the FLSA overtime rate. This calculation applies by default to all county employees, including KCSO employees. As a result, KCSO employees now receive a payment of both the enriched rate and the FLSA rate for qualifying overtime hours (see Exhibit N).²⁴

According to the Department of Executive Services, the County is currently in collective bargaining to stop this overpayment. If the enriched rate is eliminated, the County may need to make additional changes to ensure that they are still in compliance with the FLSA and contractual agreements. For example, FBOD may need to assess its calculations for FLSA payments and KCSO may need to assess its systems for capturing and communicating actual hours worked in PeopleSoft.

EXHIBIT N: Enriched rate payments increase total overtime costs by about 11 percent.



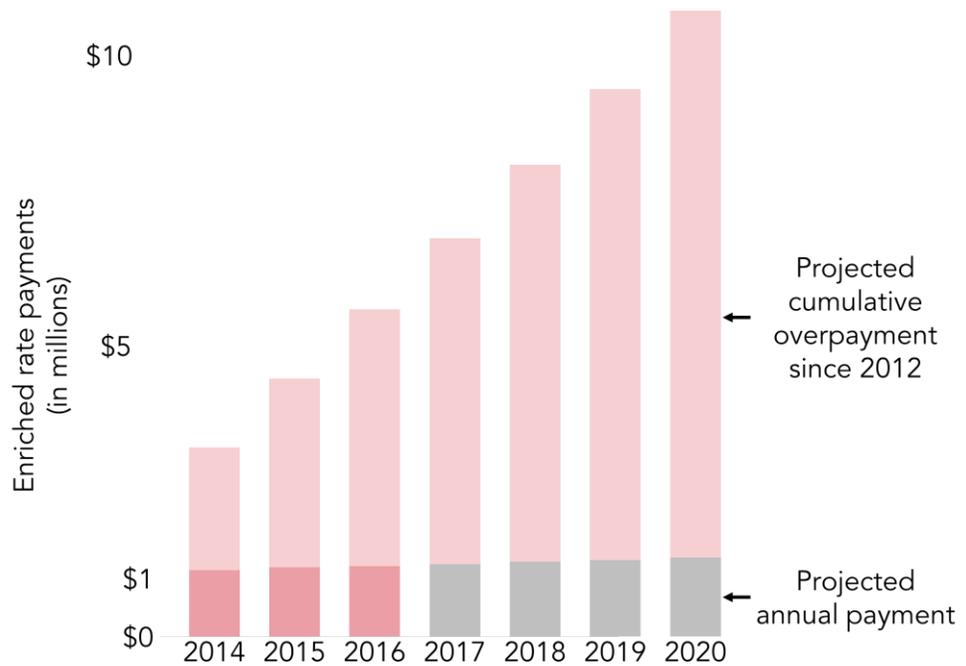
Source: King County Auditor’s Office analysis of PeopleSoft payroll data.

²⁴ The introduction of the PeopleSoft payroll system did not change the semi-monthly payment scheme for KCSO employees. Accordingly, the underlying payment structure, including the enriched rate, is still applied to all applicable KCSO employee paychecks.

The cost of the enriched rate is growing

Enriched rate costs are \$1.2 million annually and increasing, totaling more than \$5.5 million between 2012 and 2016. The County spends approximately \$100,000 per month on the enriched rate. This amount has increased by about three percent annually since 2014 and will continue to grow annually if left unchanged (see Exhibit O). In 2016, the County spent roughly \$1.2 million on the enriched rate. Through the end of 2016, the County has paid an estimated total of roughly \$5.5 million on enriched rate payments since PeopleSoft was introduced in 2012. From a KCSO employee perspective, the enriched rate pays around \$38 extra per overtime shift, on average.

EXHIBIT O: The cumulative cost of enriched rate overpayments is projected to exceed \$10 million by 2020.



Source: King County Auditor’s Office analysis of PeopleSoft payroll data.

Recommendation 9

The County Executive should eliminate the enriched rate.

Internal Controls for Overtime Management

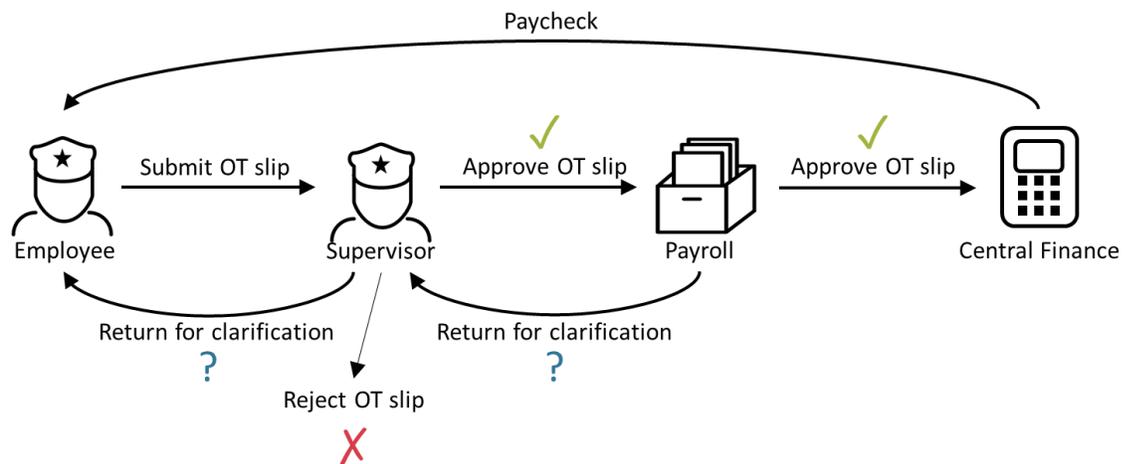
SECTION SUMMARY

Generally, KCSO’s procedures for approving overtime are consistent with best practices, but they require more work than necessary. KCSO’s processes for submitting, reviewing, and approving overtime require multiple reviews and approvals by supervisors and payroll administrators. These controls prevent employees from approving their own overtime, and require billing to the specific overtime cost center when the overtime is submitted. Accordingly, KCSO’s practices follow best practice expectations for overtime approval. Aspects of KCSO’s overtime processes, however, are onerous and administratively inefficient. They require a significant investment of time and effort from line managers and administrative staff, which keeps them from doing other work. Streamlining these elements of overtime administration would provide additional time for other duties while still protecting against overtime fraud or abuse.

KCSO has internal controls for individual overtime submittals

KCSO’s overtime approval controls help prevent fraud. KCSO’s process for submitting and approving overtime requires multiple reviews and approvals by line managers and payroll staff, limiting opportunities for fraud. Separation of duties is a best practice, because it helps prevent self-authorization or internal collusion to approve payment for fraudulent overtime submittals—overtime that was not actually worked. It also helps prevent mismanagement of overtime, as each overtime submittal must be reviewed and approved. This allows KCSO managers to see costs for overtime by type and location. Exhibit P, below, provides a general overview of the overtime submittal process.

EXHIBIT P: KCSO overtime submittal and approval requires review at multiple independent steps.



Source: King County Auditor’s Office depiction of KCSO process.

KCSO's overtime controls are not documented

KCSO's overtime controls rely on software administration and staff knowledge, but they are insufficiently documented. KCSO employees use their time and labor computer system, ATLAS, to manage the overtime pay approval process.²⁵ ATLAS requires employee overtime "slips" to be electronically approved by a supervisor and payroll. It also prevents clearly erroneous overtime requests. For example, an officer or supervisor cannot submit a request for overtime pay for time that overlaps the officer's regular work hours. As such, ATLAS implements the overtime approval controls mentioned above.

However, KCSO lacks documentation of the purpose of these controls or criteria for modifying them—what system changes are allowed, and by whom.²⁶ For example, ATLAS administrators can change staffing or scheduling settings at the supervisor's request.²⁷ These changes can directly affect backfill overtime needs, and no policy states specifically who has the authority to make them. Although these actions theoretically leave an electronic trail within ATLAS and an email documentation trail has been required since May 2017, without documentation of standards, the underlying reasons for controls may not carry forward. Best practices require that overtime review and approval processes be documented to safeguard their integrity for future staff and later procedural changes.

Recommendation 10

The King County Sheriff's Office should document its overtime approval procedures and controls, including standards for changing staffing and schedule settings in the ATLAS time and labor system.

²⁵ ATLAS manages KCSO's employee scheduling information, including assignment of overtime. Review and approval of submitted overtime pay requests occurs electronically. Consistent with Exhibit P above, employees send requests within ATLAS for overtime approval. They must be approved by a manager and payroll before being forwarded to central finance for payment. ATLAS also keeps all documentation of the overtime submittal, review, and approval process.

²⁶ As of June 2017, KCSO payroll staff are in the process of updating the Standard Operating Procedure Manual.

²⁷ ATLAS determines schedule needs based on inputs for staffing types, schedules, and minimums; these settings directly impact ATLAS's indication of backfill needs. Because KCSO does not have a documented staffing model, these settings may be modified in ATLAS without full consideration of operational impacts. See section on Strategies for Reducing Backfill Overtime.

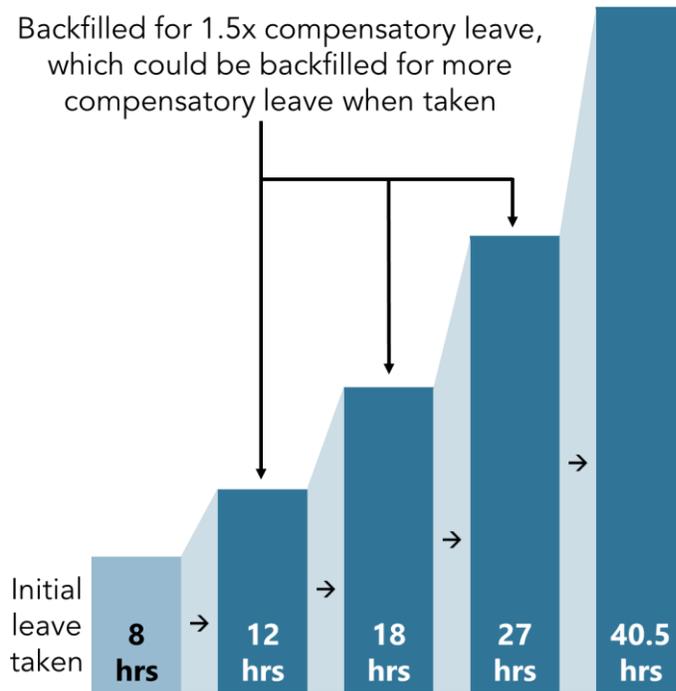
ATLAS does not control all underlying causes of backfill overtime

ATLAS does not control underlying causes of backfill overtime; staffing practices do. KCSO supervisors and managers use ATLAS to see and schedule employee leaves and trainings, and to staff related backfill overtime. ATLAS, however, does not have controls to help prevent unnecessary backfill overtime. For example, a supervisor can approve vacation or training for a deputy for a particular shift, even if that approval triggers a need for backfill overtime. KCSO policies related to specific types of leave, such as vacation bidding, or approval of compensatory leave, apply separately from the overtime management processes within ATLAS. Because KCSO's operational needs require flexibility to address immediate vacancies (such as sick leave), KCSO relies on managers to use their best judgment in approving leave and managing backfill. Accordingly, ATLAS does not prevent underlying staffing practices that worsen backfill overtime needs. Instead, a coordinated staffing model, as discussed in the section on Strategies for Reducing Backfill Overtime, would help provide improved controls.

Compensatory leave has potential to increase exponentially

A small amount of compensatory leave has the potential to trigger a chain reaction of more backfill and even more compensatory leave. Compensatory leave allows KCSO employees to take future time as paid leave in lieu of paid overtime. For example, if a deputy works 8 hours of overtime, they could choose to earn 12 hours of compensatory time for that work, or they could choose to be compensated for their overtime work at time-and-a-half pay. When that deputy takes those 12 hours of leave, the next deputy might backfill the shift in exchange for 18 hours of compensatory time. That 18 hours of leave might then be backfilled for 27 hours, and so on, as shown in Exhibit Q.

EXHIBIT Q: Compensatory leave has the potential to increase exponentially if shifts of officers taking compensatory leave must be backfilled and those officers also choose to be compensated with compensatory leave.



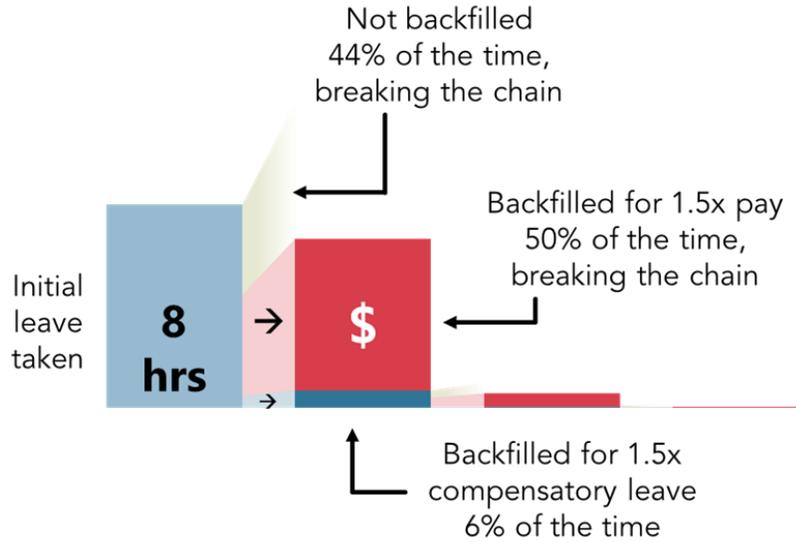
Source: King County Auditor's Office

Compensatory leave does not increase exponentially in practice

In practice, these chain reactions are limited, because not all leave is backfilled and deputies working overtime do not choose to earn compensatory time very often. If deputies choose to earn compensatory time more than 66 percent of the time when leave is taken, then the chain reaction starts and increases the amount of compensatory leave exponentially. However, deputies only choose to earn compensatory time six percent of the time, as shown in Exhibit R, below. This is because KCSO does not backfill around 44 percent of absences caused by taking compensatory leave. Also, when deputies do work overtime, they choose to earn time-and-a-half pay much more frequently than choosing to earn compensatory leave.²⁸

²⁸ On average, deputies from contract cities choose compensatory time less often when working overtime in unincorporated patrol, and unincorporated patrol deputies choose compensatory time less often when working overtime in contract cities.

EXHIBIT R: Compensatory leave does not currently grow exponentially because deputies only earn compensatory leave six percent of the time when leave is taken.



Source: King County Auditor’s Office analysis.

KCSO does not have controls to prevent chain reactions

KCSO lacks controls to prevent compensatory time usage from exponentially increasing backfill overtime. Without any chain reaction, each hour of overtime worked for compensatory leave would create 1.5 hours of compensatory leave. Based on our analysis, the effect of chain reactions currently increases the cumulative amount of compensatory leave from 1.5 hours to around 1.64 hours per hour of overtime work. This means that on a system-wide level, we did not find chain reactions to be a major cause of backfill overtime over the past three years. However, KCSO does not have any controls that would prevent such chain reactions in the future if deputies began choosing compensatory time more often. ATLAS administrators have developed a report that can show recent compensatory time used and whether any absences created by that leave were backfilled by regular or overtime hours. This report could aid administration and monitoring by allowing managers to document compensatory time usage and see if backfill overtime increases over time.

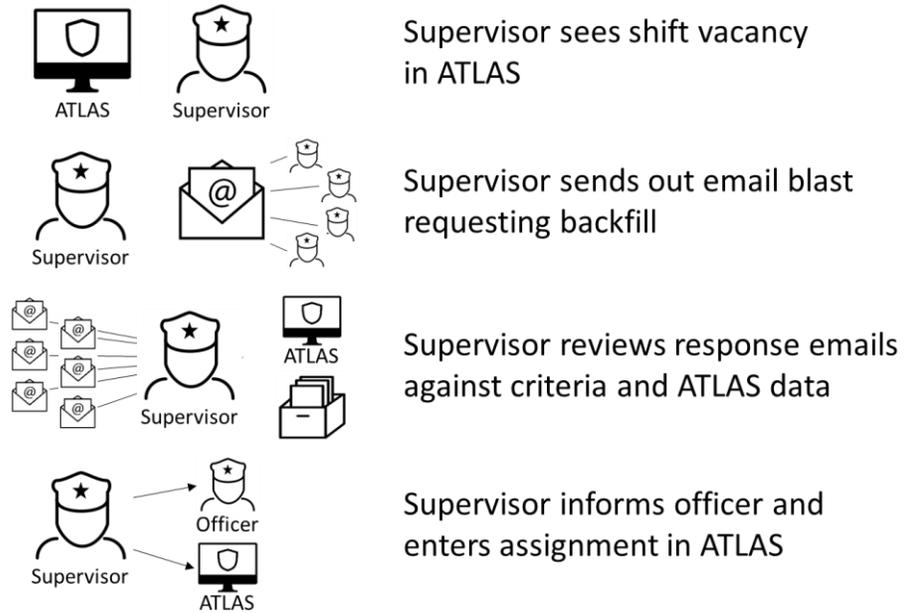
Recommendation 11

The King County Sheriff’s Office should collect and monitor data on how often compensatory leave leads to additional backfill overtime and develop a plan to control its use if it begins to increase backfill exponentially.

Overtime administration is slow

KCSO’s processes for assigning overtime can be time consuming for managers and administrators. Identifying, selecting, and assigning employees to backfill vacant shifts is time consuming for KCSO managers. For example, until recently, patrol sergeants sent blast emails seeking interest in overtime posts, and then reviewed each response, choosing the specific officer for each vacancy based on detailed preferences.²⁹ These shift changes and assignments are individually entered into the ATLAS system, with each entry requiring multiple steps (e.g., mouse clicks and approval windows), and with each step taking many seconds of lag time as the system updates. Patrol sergeants consistently reported that, altogether, overtime administration takes a significant amount of time each shift, limiting their ability to spend time directly supervising and coaching deputies or performing other tasks. KCSO managers noted that they are measuring and tracking lag times for different functions, and the software vendor has proposed a system upgrade.

EXHIBIT S: The process for outreach, review, and selection of officers for backfill overtime has been complex and time consuming.



Source: King County Auditor’s Office depiction of KCSO process.

²⁹ KCSO’s General Orders Manual has detailed criteria prioritizing backfill overtime assignments for interested officers. KCSO managers noted that the criteria are challenging to administer due to their complexity and the lack of supporting information. The new targeted overtime assignment function should help aid administration, but does not include off duty work or the total amount of hours deputies have recently worked. See Appendix 2 for the hierarchical list of overtime assignment criteria in the KCSO General Orders Manual.

ATLAS functionality is limited, reducing its value for supervisors

ATLAS capabilities may be underused, wasting supervisors' time. As one KCSO manager explained, a key reason for moving to the ATLAS system was to reduce the administrative burden of scheduling on KCSO supervisors. However, supervisors reported that ATLAS has actually increased the amount of time spent on scheduling, and that they have not been provided enough training or access on the advanced functions available in ATLAS. Furthermore, other schedule information, such as officers' off-duty work, is unavailable in ATLAS entirely. Finally, ATLAS users reported concerns that system administrators may not recognize problems. For example, although system lag was consistently reported as an issue by patrol sergeants during focus group interviews we conducted, the ATLAS vendor had not heard about this issue and dismissed the problem.

KCSO is taking steps to improve scheduling functionality in ATLAS. As of May 2017, ATLAS administrators released a new function that should assist patrol sergeants with assigning backfill overtime, via a pre-populated ranking of deputies available for assignment. This new functionality could address the issues identified by supervisors during audit interviews. Continued implementation of ATLAS tools could further aid managers in overtime administration.

Recommendation 12

The King County Sheriff's Office should monitor implementation of the overtime assignment function in the ATLAS time and labor system to make sure new system functionalities ease schedule administration.



Appendix 1

Regression Methodology & Results

We conducted a regression analysis to determine whether overtime is correlated with negative incidents in the King County Sheriff's Office (KCSO). We examined eight categories of incidents: workers' compensation claims, uses of force, vehicle accidents, vehicle pursuits, ethics violations, professionalism complaints, criminal acts, and firearm discharges.

Our analysis includes all hourly employees who work in unincorporated patrol, criminal investigations, contract cities, and special operations. This excludes captains and majors (who are salaried and cannot earn overtime) but includes sergeants and deputies.

As inputs to the regression, we used payroll data from PeopleSoft to calculate the amount of overtime and off-duty hours that each officer worked in each seven-day period during 2014 through mid-2016. We then determined if any of the incidents tracked by KCSO Human Resources or King County's Safety and Claims occurred in the following seven-day period (see below for additional information on these and other data sources). We performed logistic regressions to determine the likelihood of having each type of incident as a function of the amount of overtime and off-duty hours worked leading up to the event.

Our analysis was organized as follows:

- Dependent variable: Presence of an incident in the next seven days (binary variable: 0=no incident; 1=incident). We performed separate regressions for the following incident types: workers' compensation claims, overall Human Resources incidents, uses of force, vehicle accidents, vehicle pursuits, ethics violations, professionalism complaints, criminal incidents, and firearm discharges.
- Independent variable: Number of overtime and off-duty hours worked in the prior seven days.
- Control variable: Officer age (calculated based on date of birth from PeopleSoft records). The purpose of including this control variable is to account for any relationship between officer age and chance of an incident. (For example, older officers may be more susceptible to injury, or younger officers may engage in more risky behavior.) By controlling for this variable, we can determine whether the relationship between incidents and overtime exists, regardless of officer age.
- Control variable: Total hours worked in the following seven days. This represents the time period during which incidents occurred (or did not occur). The purpose of including this control variable is to account for the fact that an incident is more likely to occur if an officer works 40 hours in a week versus 20 hours in a week (because there are more hours in which the incident could occur). Controlling for this allows us to isolate the effect of working more overtime prior to the incident.

All regressions were performed in IBM SPSS Statistics, with additional data cleaning in Microsoft Access and Excel.

RESULTS

Eight of the incident types had a significant relationship with number of overtime/off-duty hours: workers' compensation claims, overall performance incidents, uses of force, vehicle accidents, vehicle pursuits, ethics incidents, professionalism incidents, and firearm discharges.

Criminal incidents did not have a significant relationship with overtime or off-duty. In other words, the number of overtime or off-duty hours worked does not affect the likelihood of committing a criminal incident. This was the only incident type we looked at that did not have a significant relationship with overtime.

The main output of the regressions is the odds ratio, which represents the increased odds of an incident given a one-hour increase in overtime or off-duty. For example, an odds ratio of 1.02 means that the likelihood of an incident increases by a factor of 1.02 (or 2 percent).

Exhibit 1 summarizes these results with both point estimates and confidence intervals of the odds ratios. The confidence interval signifies that we have 95 percent confidence that the true odds ratio lies within this range. The odds ratio is significant if the 95 percent confidence interval is greater than one.

Exhibit 1: All categories except criminal incidents are significantly correlated with overtime.



The following output tables from SPSS show the odds ratio and confidence intervals for each of the regressions. If the significance is less than 0.05, then we have confidence that the result is significant at the 95 percent level.

Workers' compensation claims are significantly correlated with overtime. If an individual worked one additional hour of overtime in the prior week, the odds of a workers' compensation claim in the following week increase by 2 percent (with 95 percent confidence that this value falls between 1.5 percent and 2.4 percent):

Variables in the Equation	β	S.E.	Significance	Odds Ratio	95% Confidence Interval	
					Lower	Upper
Overtime & Off-Duty, Past Week	.019	.002	.000	1.020	1.015	1.024
Officer Age	-.019	.002	.000	.981	.977	.984
Total Hours, Next Week	.007	.002	.000	1.007	1.004	1.010
Constant	-5.212	.104	.000	.005		

Human Resources incidents as a group (which includes all the incident categories except workers' compensation claims) are significantly correlated with overtime. If an individual worked one additional hour of overtime in the prior week, the odds of an incident in the following week increase by 2.8 percent (with 95 percent confidence that this value falls between 2.6 percent and 2.9 percent):

Variables in the Equation	β	S.E.	Significance	Odds Ratio	95% Confidence Interval	
					Lower	Upper
Overtime & Off-Duty, Past Week	.027	.001	.000	1.028	1.026	1.029
Officer Age	-.036	.001	.000	.965	.963	.966
Total Hours, Next Week	.017	.001	.000	1.018	1.016	1.019
Constant	-2.941	.039	.000	.053		

Uses of force are significantly correlated with overtime. If an individual worked one additional hour of overtime in the prior week, the odds of a use of force incident in the following week increase by 2.7 percent (with 95 percent confidence that this value falls between 2.4 percent and 3.1 percent):

Variables in the Equation	β	S.E.	Significance	Odds Ratio	95% Confidence Interval	
					Lower	Upper
Overtime & Off-Duty, Past Week	.027	.002	.000	1.027	1.024	1.031
Officer Age	-.068	.001	.000	.934	.931	.937
Total Hours, Next Week	.030	.001	.000	1.031	1.028	1.033
Constant	-3.521	.077	.000	.030		

Vehicle accidents are significantly correlated with overtime. If an individual worked one additional hour of overtime in the prior week, the odds of a vehicle accident in the following week increase by 3.2 percent (with 95 percent confidence that this value falls between 2.6 percent and 3.7 percent):

Vehicle Accidents						
Variables in the Equation	β	S.E.	Significance	Odds Ratio	95% Confidence Interval	
					Lower	Upper
Overtime & Off-Duty, Past Week	.031	.003	.000	1.032	1.026	1.037
Officer Age	-.068	.003	.000	.935	.930	.940
Total Hours, Next Week	.030	.002	.000	1.031	1.026	1.035
Constant	-4.819	.141	.000	.008		

Vehicle pursuits are significantly correlated with overtime. If an individual worked one additional hour of overtime in the prior week, the odds of a vehicle pursuit in the following week increase by 2.8 percent (with 95 percent confidence that this value falls between 2.4 percent and 3.1 percent):

Vehicle Pursuits						
Variables in the Equation	β	S.E.	Significance	Odds Ratio	95% Confidence Interval	
					Lower	Upper
Overtime & Off-Duty, Past Week	.027	.002	.000	1.028	1.024	1.031
Officer Age	-.073	.002	.000	.929	.926	.933
Total Hours, Next Week	.035	.001	.000	1.035	1.032	1.038
Constant	-3.818	.089	.000	.022		

Ethics violations are significantly correlated with overtime. If an individual worked one additional hour of overtime in the prior week, the odds of an ethics violation in the following week increase by 3.1 percent (with 95 percent confidence that this value falls between 2.8 percent and 3.5 percent):

Ethics Violations						
Variables in the Equation	β	S.E.	Significance	Odds Ratio	95% Confidence Interval	
					Lower	Upper
Overtime & Off-Duty, Past Week	.031	.002	.000	1.031	1.028	1.035
Officer Age	-.017	.001	.000	.983	.980	.986
Total Hours, Next Week	.001	.001	.644	1.001	.998	1.003
Constant	-4.630	.081	.000	.010		

Professionalism complaints are significantly correlated with overtime. If an individual worked one additional hour of overtime in the prior week, the odds of a professionalism complaint in the following week increase by 2.4 percent (with 95 percent confidence that this value falls between 2.2 percent and 2.7 percent):

Variables in the Equation	Professionalism Complaints				95% Confidence Interval	
	β	S.E.	Significance	Odds Ratio	Lower	Upper
	Overtime & Off-Duty, Past Week	.024	.001	.000	1.024	1.022
Officer Age	-.009	.001	.000	.991	.989	.994
Total Hours, Next Week	.009	.001	.000	1.010	1.008	1.011
Constant	-4.801	.064	.000	.008		

Firearm discharges are significantly correlated with overtime. If an individual worked one additional hour of overtime in the prior week, the odds of a firearm discharge in the following week increase by 3.6 percent (with 95 percent confidence that this value falls between 2.7 percent and 4.5 percent):

Variables in the Equation	Firearm Discharges				95% Confidence Interval	
	β	S.E.	Significance	Odds Ratio	Lower	Upper
	Overtime & Off-Duty, Past Week	.035	.004	.000	1.036	1.027
Officer Age	-.028	.004	.000	.973	.965	.981
Total Hours, Next Week	.008	.003	.012	1.008	1.002	1.015
Constant	-6.534	.221	.000	.001		

Criminal incidents are not significantly correlated with overtime:

Variables in the Equation	Criminal Incidents				95% Confidence Interval	
	β	S.E.	Significance	Odds Ratio	Lower	Upper
	Overtime & Off-Duty, Past Week	.005	.006	.435	1.005	.993
Officer Age	-.022	.004	.000	.978	.970	.986
Total Hours, Next Week	.004	.003	.215	1.004	.998	1.011
Constant	-6.462	.226	.000	.002		

LIMITATIONS

Regressions can reveal correlations between variables but do not necessarily prove causal relationships. Therefore, we can say that overtime and certain incidents are correlated, but we cannot prove that overtime causes the incidents. However, results are more likely to be causal (or at least partially causal) given the support from the academic literature and information about the effects of fatigue, as discussed in the report.

Another limitation of regressions is that we cannot control for unobservable characteristics or other information without reliable data. There are individual-level variables that could affect an officer's likelihood of an incident, for example, the individual's health, average driving speed, amount of training

received, etc. Environmental factors like time of day and specific work location could also affect the likelihood of an incident. In an ideal scenario, we would have included these variables in our regressions, but the data was either unavailable or not sufficiently reliable for our purposes.

DATA SOURCES

We used the following data sources in the safety and performance regressions:

- PeopleSoft: A record of all hours worked by KCSO employees, including overtime hours. Provided by King County Finance and Business Operations Division.
- Computer-Assisted Dispatch (CAD) Call-In Log: A record of off-duty hours worked by KCSO employees. This log represents a conservative estimate of total off-duty hours worked for two reasons. First, the log may omit some shifts if officers did not log into the CAD system (since officers are required to do this, KCSO management thinks that the vast majority of off-duty shifts are represented in the dataset). Second, the hours in the CAD database are not always accurate—officers may call in several minutes before or after the shift begins, or may forget to “log out” at the end of their shift. Since all off-duty work must be in four-hour shifts, we rounded down to the nearest 4, 8, or 12 hours. When there was no log-off time, we assumed the shortest shift length (four hours) in order to provide a more conservative estimate of off-duty hours. Provided by KCSO Budget and Accounting.
- Workers’ Compensation Claims: A record of workers’ compensation claims from 2014 through mid-2016. Provided by King County’s Safety and Claims.
- IA Pro: A record of all performance incidents tracked by KCSO internally from 2014 through mid-2016, including violations to the Code of Conduct (broadly categorized in our analysis as ethics violations, professionalism violations, and criminal violations) as well as vehicle accidents, vehicle pursuits, uses of force, and excessive uses of force. Provided by KCSO Human Resources.



Appendix 2

KCSO General Orders Manual: Overtime Assignment

Below is an excerpt from section 4.01.030 of the General Orders Manual, which details King County Sheriff's Office overtime assignment procedures. Procedures six and seven explain that an officer's work location is the primary criterion for overtime assignment, while the number of hours an officer has worked in a secondary criterion.

PATROL OVERTIME SIGNUP PROCEDURES:

1. Deputies and sergeants who wish to be considered for voluntary overtime assignments must give their names and email addresses (either KCSO and/or home) to their sergeants and request to be placed on the overtime sign up list.
2. Notice of patrol overtime opportunities will be given by the sergeants to the interested deputies and sergeants on this list via email.
 - a. Interested deputies and sergeants will notify the requesting supervisor of their availability.
 - b. Deputies may only sign up for themselves. They may not sign up on another deputy's behalf.
3. Notices for overtime will be posted in:
 - a. Eight (8) hour shifts will be posted in four (4) hour blocks.
 - b. Ten (10) hour shifts will be posted in five (5) hour blocks.
4. Deputies and sergeants shall respond by contacting the sergeant requesting the overtime via email and notifying that sergeant of their desire to work the overtime in question.
5. Deputies and sergeants will only be allowed to sign up for four (4) hours or five (5) hours for a ten (10) hour shift of overtime at any given time.
6. Deputies and sergeants will be given the following preferences:
 - a. Contract city deputies shall have preference for overtime work in contract cities.
 - i. If no contract city deputy signs up for the available work, other deputies are eligible to do so.
 - b. Unincorporated deputies shall have preference for overtime work in unincorporated areas.
 - i. If no unincorporated deputy signs up for the available work, other deputies are eligible to do so.
 - c. Deputies shall have preference for deputy overtime over sergeants.
 - i. If no deputy signs up for available overtime, it may be filled by a sergeant.
 - d. Reasonable effort will be made to fill overtime assignments with deputies from the originating worksite, e.g., Precinct 3 personnel will have first right to Precinct 3 overtime.
 - i. If no deputy signs up from the originating worksite it can be opened up to other worksites.
7. If two or more eligible employees volunteer for the same hours of overtime, preference will be given in the following order:
 - a. The deputy or sergeant who has not worked overtime in the proceeding seven (7) days.
 - b. The deputy or sergeant who has worked the fewer hours of overtime in the preceding twenty four (24) hours.
 - c. The deputy or sergeant who has worked the fewer hours in the preceding 7 days, and as a tie breaker.

- d. The deputy whose request was received first.
8. The requesting supervisor will let the deputy or sergeant know if s/he has been assigned to work the overtime.
9. Deputies and sergeants who are not able to fulfill their responsibility by working the shift they signed up to work are required to notify their supervisor or the on duty supervisor as soon as reasonably possible, and the sergeant will then fill that vacancy consistent with this policy.
10. Nothing in this policy precludes a supervisor from deviating from the procedure outlined in this policy, when short notice of an overtime need necessitate.



Appendix 3

Staffing Model

One objective of this audit was to determine what factors drive KCSO's use of overtime and what opportunities exist to reduce overtime costs. Since there are a wide variety of reasons to use overtime, we focused our analysis on backfill—overtime which occurs when an officer is unavailable and another officer must work overtime to cover the first officer's shift. Backfill is not only the largest driver of overtime at KCSO, but also the factor that we heard about most frequently in interviews. The largest source of backfill overtime is unincorporated patrol. KCSO had been considering different strategies and policy choices to reduce backfill overtime in unincorporated patrol, but lacked the data and analysis to evaluate the effectiveness of these strategies.

In order to understand what impact different strategies would have on the need for backfill overtime, we developed a predictive staffing model for unincorporated patrol. Based on a variety of customizable inputs, the model calculates the impact of different scenarios on how much backfill overtime would be necessary, the distribution of that overtime among deputies, and the costs of both backfill overtime and staffing. The model is contained in an Excel workbook that uses a program written in Visual Basic for Applications to run (e.g., a macro).

WHAT THE MODEL DOES

Most staffing models calculate how many employees should be hired given how many posts must be covered and how frequently employees are absent on average. In general, hiring additional employees can be more cost effective than using overtime to cover posts. At a certain point, however, the costs of hiring an additional employee exceed the benefits (usually when the employee's regular hours exceed the expected number of overtime hours needed). A staffing model can help determine this "tipping point" and calculate the optimum number of employees to hire to minimize costs. However, there is no "tipping point" when it comes to unincorporated patrol in King County. This is because it is always less expensive to use overtime, given the high fixed costs of hiring an additional patrol deputy. Therefore, the model we developed does not calculate the optimum number of staff.

Instead, the model calculates how much backfill overtime one could expect, given different levels of staffing. The model is tailored to unincorporated patrol in King County, which has three precincts. Each of those precincts has three shifts (day, swing, and graveyard) and a minimum number of patrol deputies that must be on duty during each shift. The model allows these minimums to be customized, as well as the number and schedules of deputies assigned to each precinct and shift.

SCHEDULES

There are many different scheduling options that could be used to staff a 24-hour post seven days a week. The model can look at the current patrol schedules, alternatives that KCSO is considering, and variations on those schedules. The following page describes these schedules.

ROTATING 5-2/5-3

Shift length: Deputies work 8 hours per day
Schedule: Deputies work 5 consecutive days followed by 2 furlough days
Rotation: Yes; extra furlough day every second week
Pattern: Repeats over a 15-day period
Efficiency: Requires 3 squads for every 2 posts (1.5 squads/post)
Overlapping squads: None
Overlapping shifts: None

ROTATING 4/10

Shift length: Deputies work 10 hours per day
Schedule: Deputies work 4 consecutive days followed by 3 furlough days
Rotation: Yes; extra furlough day every third week
Pattern: Repeats over a 22-day period
Efficiency: Requires 4 squads for every 2 posts (2 squads/post)
Overlapping squads: Yes; 2 overlap days each period (around 33 days/year)
Overlapping shifts: Yes; 6 hours of overlapping shifts every day

FIXED 5/8

Shift length: Deputies work 8 hours per day
Schedule: Deputies work 5 consecutive days followed by 2 furlough days
Rotation: No; same schedule every week
Pattern: Repeats over a 7-day period
Efficiency: Requires 3 squads for every 2 posts (1.5 squads/post)
Overlapping squads: Yes; 1 overlap day each period (around 52 days/year)
Overlapping shifts: None

FIXED 4/10

Shift length: Deputies work 10 hours per day
Schedule: Deputies work 4 consecutive days followed by 3 furlough days
Rotation: No; same schedule every week
Pattern: Repeats over a 7-day period
Efficiency: Requires 4 squads for every 2 posts (2 squads/post)
Overlapping squads: Yes; 1 overlap day each period (around 52 days/year)
Overlapping shifts: Yes; 6 hours of overlapping shifts every day

ROTATING 5/8 (ROTATES EVERY X WEEKS)

Shift length: Deputies work 8 hours per day
Schedule: Deputies work 5 consecutive days followed by 2 furlough days
Rotation: Yes; extra furlough day every X weeks
Pattern: Repeating period based on frequency of rotation: $15 + (X-2)*7$ days
Efficiency: Requires 3 squads for every 2 posts (1.5 squads/post)
Overlapping squads: Yes; (X-2) overlap days each period
Overlapping shifts: None

PROCESS STEPS

When the model is run, it performs a number of steps. Briefly:

1. The model creates a roster of fictional deputies based on the total number of staff assigned to each shift. The model then gives each of these deputies their own schedule of days on and days off, as well as a measure of how willing they are to work overtime. These measures of willingness are taken from how often actual deputies have worked backfill overtime in the past three years, and then randomly assigned to the fictional deputies for each run of the model.³⁰
2. The model then creates a deputy-by-deputy schedule for each day. The number of days modeled (as well as which calendar days are modeled) can be customized. The model lists each deputy as either being scheduled to work or on furlough, as well as the number of hours scheduled to work based on the selected schedule. The model then calculates whether each deputy is absent due to sickness, vacation, or other type of leave. In cases where the deputy is out for only part of the shift, the model calculates how many hours the deputy is absent and whether those hours occur during the beginning or end of the shift. The likelihood of a deputy being absent is based on the frequency with which actual deputies have been absent, adjusted for seasonality and variance between different days of the week. For example, if the day being modeled is a Thursday in October, then the model will determine the frequency of absences among patrol deputies for Thursdays in October based on actual payroll data over the past three years. If the day being modeled is a holiday, then the model will determine the frequency of absences for that particular holiday. The chart below shows the rates at which deputies were absent due to leave, based on three years of historical PeopleSoft payroll data.

Exhibit 2: Based on historic data, deputies are absent more often on Saturday and Sunday.

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Jan	21%	10%	11%	11%	10%	12%	22%
Feb	22%	11%	11%	11%	11%	12%	21%
Mar	20%	11%	11%	10%	12%	13%	24%
Apr	20%	10%	11%	11%	11%	14%	25%
May	23%	11%	12%	12%	13%	15%	26%
Jun	23%	13%	13%	13%	13%	15%	27%
Jul	27%	15%	14%	13%	14%	15%	29%
Aug	25%	14%	14%	15%	18%	21%	29%
Sep	25%	14%	14%	13%	15%	16%	28%
Oct	21%	14%	13%	13%	13%	15%	26%
Nov	22%	12%	13%	12%	13%	13%	24%
Dec	26%	12%	12%	15%	15%	16%	28%

³⁰ KCSO did not have data on how often backfill has been voluntary or mandatory, so for modeling purposes we assumed that however much overtime a deputy worked over the past three years was how much they wanted to work (e.g., that all overtime in PeopleSoft was voluntary), but that they would not want to work any more overtime than they actually worked (e.g., any additional hours of overtime would be mandatory). Better data would improve the accuracy of the component of the model that predicts how much overtime would be voluntary; however, we did not base any of our findings or conclusions on this component of the model, so better data would not have impacted our findings or conclusions.

Based on whether each deputy is absent, the model determines whether there are any overlapping shifts that could reduce the backfill overtime required (e.g., if the end of a 10-hour shift overlaps with the beginning of a shift where the deputy is absent, then the model will reduce the amount of hours that require backfill overtime by the amount of overlapping hours).

3. The model then checks whether there are sufficient deputies assigned to meet minimum staffing levels. If there is a structural deficit (e.g., the minimum is six deputies, but only five are scheduled to work that day), then the model determines how many backfill shifts are necessary to meet minimums. The model creates a record for each backfill shift due to structural deficits as well as for deputies who are absent.
4. The model then checks each backfill record and determines whether the number of deputies on duty (e.g., not absent) is already at or above minimums for that shift. If so, then the model deletes that backfill record.
5. Once the total demand for backfill is known, the model can assign each backfill shift to a specific fictional deputy. This process was not ultimately used for any findings or conclusions in the report, and can be turned off to save time when running the model. For each backfill shift, the model determines which deputies are willing and eligible to work it and prioritizes them based on which precinct and shift they normally work. The model also looks back to how many hours each eligible deputy has already worked that day and that week (or other customized time period). The model can be customized to deprioritize any deputies who have worked in excess of a customizable number of hours (e.g., if a deputy has worked more than 12 hours that day or 100 hours in the past week, then they are no longer eligible for the backfill shift). If no unincorporated patrol deputies are willing or eligible to work the backfill shift, the model determines whether any deputies from a contract city might be available. This determination is based on how frequently actual contract city deputies currently work backfill shifts in unincorporated patrol. If no contract city deputy is available, then the model assigns the shift to an unwilling but eligible unincorporated deputy as mandatory overtime.
6. The model then calculates overtime and staffing costs, based on how many backfill overtime hours it predicts are necessary. Staffing costs are based on the cost of hiring an additional patrol deputy, as provided by KCSO's finance office. Overtime costs are based on the average actual cost of backfill overtime during the past three years of payroll data, as well as costs associated with FICA, retirement benefits, and industrial insurance.

INPUTS AND DATA SOURCES

The model uses historical data from PeopleSoft between 2014 and 2016 to determine how frequently deputies are absent, how many hours of backfill overtime each patrol deputy has worked in the past three years, and how much backfill overtime costs on average. It uses data provided by KCSO's finance office to determine how much each additional deputy would cost (\$155,525 on average, not including recruiting and training costs; 37 percent of this amount is due to fixed costs).

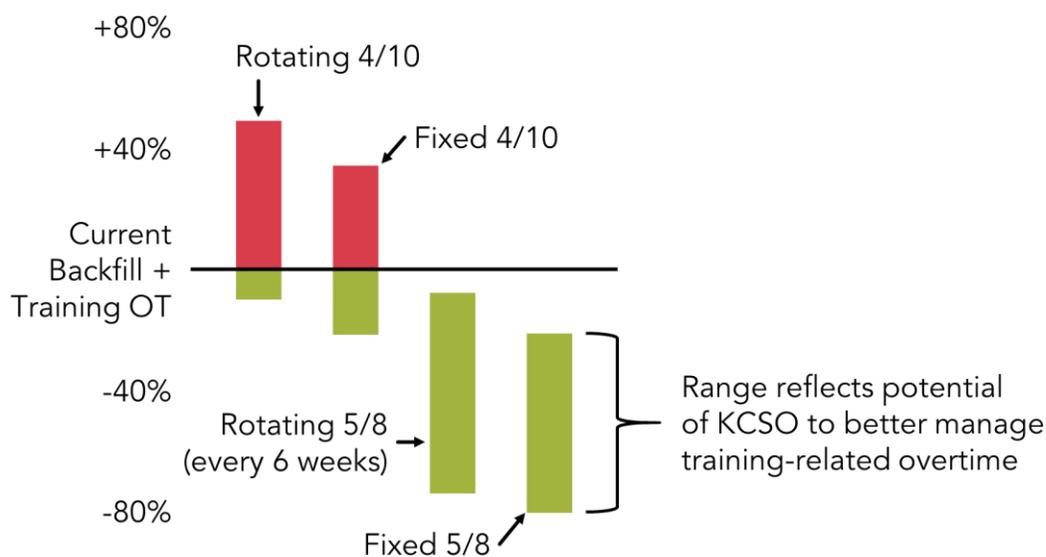
RESULTS

The model predicts how much backfill one would expect due to leave-based reasons, under different staffing level and scheduling scenarios. The model does not predict how much backfill is necessary due to training, since that amount depends on how well KCSO coordinates and schedules trainings.

For a baseline, we determined an estimate of how many deployable deputies KCSO had actually assigned to unincorporated patrol (118 in December 2016) and their current schedules.³¹ When these inputs are run through the model, the amount of backfill overtime predicted is significantly less than the actual amount of backfill overtime KCSO used. This is likely due to the fact that deputies are not only absent due to leave that would appear in payroll records (e.g., sick, vacation, or compensatory leave), but are frequently absent because they are attending training or are otherwise reassigned away from patrol. We looked in depth at a week's worth of time and labor data from December 2016 and found that the amount of training-related absences more than made up for the discrepancy.

For our analysis we ran the model using different staff levels and schedules, and then we compared those results to the baseline (and each other). As shown in Exhibit 3, each schedule types has the potential to reduce the current amount of backfill needed. The bars in Exhibit 3 represent the range of outcomes, which depend on how well KCSO is able to reduce training-related overtime. For example, a rotating 4/10 schedule could potentially reduce backfill, but only if KCSO is able to almost entirely eliminate overtime caused by training. If KCSO is unable to schedule trainings without using overtime, then a rotating 4/10 would likely increase backfill overtime. The rotating 5-2/5-3 does not have a full range, since it is unlikely that KCSO could control training-related overtime any better than it currently does under this schedule.

Exhibit 3: Impact of schedule on backfill largely depends on ability of KCSO to manage trainings.



Source: King County Auditor's Office Analysis

³¹ Current schedules appeared to mostly be rotating 5-2/5-3 schedules, with some deputies working 4/10 schedules. Technically K-9 units work 9.5 hours per day, but for modeling purposes we assumed that they worked 10-hour days.



Appendix 4

Overtime Requirements & Overtime Premium Formulas

We examined overtime pay requirements for KCSO employees. Our analysis included a review of the county's payroll systems and how the County calculates overtime pay premiums. We reviewed the legal structure of overtime: how the Fair Labor Standards Act (FLSA) defines overtime work and its related requirements and penalties. We also reviewed contracts between King County and various bargaining units representing KCSO employees.

THE FAIR LABOR STANDARDS ACT

The FLSA, [29 U.S. Code Chapter 8](#), is a broad federal law that sets basic employment standards, including overtime, minimum wage, and child labor. The full breadth of the FLSA is beyond the scope of this appendix; two key concepts are relevant to this audit. First, the FLSA defines what overtime is under the law—what amount of work in a given period is standard hourly work versus overtime work. Second, the FLSA sets how overtime must be paid. Related provisions enforce these requirements with civil and criminal penalties.

Washington State law (RCW 49.46 et seq) is substantially similar to the FLSA in material respects for this appendix (see, e.g., RCW 49.46.130, setting maximum hours, regular pay, and law enforcement work period consistent with the FLSA).

FLSA Overtime

The FLSA sets a standard maximum workweek of 40 hours. Employers must pay 1.5 times the "regular rate of pay" for all work over the maximum hours limit ([29 U.S. Code § 207](#) – Maximum Hours). It exempts some types of workers from the hourly limits in the Act, such as executive, administrative, professional, and outside sales employees ([29 U.S. Code § 213](#) – Exemptions). Police officers are hourly employees under the FLSA.

"Regular Rate of Pay"

The FLSA defines what constitutes a "[regular rate of pay](#)" for purposes of calculating overtime. The regular rate of pay is not base hourly pay. Instead, the FLSA defines the regular rate as including "all remuneration for employment" except certain specific categories (e.g., expenses, holiday bonuses) excluded by the Act ([29 U.S. Code § 207\(e\)](#)). Premiums and bonuses for specific skills, training, and experience are generally included in the FLSA definition.

In other words, under the FLSA, an employee's total compensation provides the basis for calculating overtime pay. Premium pays proportionally increase the amount of pay required for overtime work. Employers must calculate the "regular rate" including such premiums for the work period, and then apply it on an hourly basis for FLSA overtime. To do so, employers must add up the employee's total compensation for the work period (not including the statutory exceptions) and then divide that amount by the hours the employee worked in the period. Overtime is then paid at 1.5 times that "regular rate of pay."

For example, an employee has a base rate of pay of \$20.00 per hour, along with a bonus of \$100 per week for special training. The employee has a standard 40-hour workweek, but works an additional 4 hours one evening, for a total of 44 hours of work—4 hours of overtime.

Regular rate of pay calculation:

44 work hours at base rate of \$20.00/hour:	\$880
Special training bonus:	\$100
TOTAL:	\$980
TOTAL per hour (\$980/44):	\$22.27 the hourly "regular rate of pay"

The overtime must be paid at 1.5 times the regular rate, or \$33.41 per hour.

FLSA Requirements and Penalties

FLSA regulations require employers to maintain accurate records of time worked, including total hours worked, the regular rate of pay, and the premium pay for overtime hours ([29 CFR 516.2](#)). Violations of the maximum hours and overtime pay requirements of the FLSA include civil and criminal penalties ([29 U.S. Code § 216](#)); in the case of unpaid overtime, employers are liable to their employees for twice the unpaid amount.³²

FLSA Overtime Calculations and Hourly Work Records

As shown above, calculating FLSA overtime pay inherently requires records of daily hours worked. Even in circumstances with fixed schedules, the FLSA requires that employers maintain records of the exact hours worked each week. If an employer does not maintain records of an employee's actual daily hours worked, or cannot use those records to calculate FLSA overtime, they are arguably not complying with the FLSA's recordkeeping requirements. Note that this requirement is independent of the contractual payment structure; employers and employees can agree to standard salaries or other payment schemes so long as they comply with the requirements of the FLSA, including the calculation of the regular rate (see e.g., [29 CFR 778.108](#) and [29 CFR 778.109](#)).

KCSO OVERTIME ADMINISTRATION

As explained above, the FLSA has specific requirements for determining, recording, and paying for overtime work. King County's contract structures and payroll systems present challenges in administering overtime pay.

KCSO Pay Structure

KCSO employees are paid a standard, semi-monthly salary. This means, excepting overtime or other non-standard pay, they receive a fixed paycheck amount 24 times a year. This approach to pay presents challenges for calculating FLSA overtime, because the number of days in the pay period varies, but the FLSA work period is required to be a fixed period. The County uses a standard 40-hour workweek as the FLSA period for KCSO employees. The actual number of regular hours worked can change from pay period to pay period depending on schedule and the number of days in the period. It can also change

³² 29 U.S. Code § 216 (b) Damages; right of action; attorney's fees and costs; termination of right of action: "Any employer who violates the provisions of section 206 or section 207 of this title shall be liable to the employee or employees affected in the amount of their unpaid minimum wages, or their unpaid overtime compensation, as the case may be, and in an additional equal amount as liquidated damages."

from FLSA workweek to workweek as well, depending on the employees' schedule. In addition, pay periods can contain a varying number of FLSA workweeks, with portions of workweeks overlapping the beginning and end of each pay period.

Because PeopleSoft applies the FLSA overtime calculation relative to the FLSA workweek, FLSA pay for a given workweek can be divided between two paychecks. FLSA overtime applied after the relevant pay period i.e., the overtime pay request is submitted and approved after the payroll cutoff for the pay period), is recalculated and adjusted relative to the appropriate FLSA workweek. These multiple periods and adjustments were reported to be too complex to identify on KCSO employee paychecks.

Contractual Overtime

Employment contracts can negotiate different overtime terms, so long as they do not violate the FLSA's requirements. In other words, labor contracts can designate more time as overtime than the FLSA requires. The contract terms can affect how the contract overtime is calculated versus the required FLSA overtime. For example, a contract may require that any work over standard schedules be paid as overtime. It may also designate that such overtime be paid at 1.5 times base pay. As a result, there can be two (or more) types of overtime and overtime pay: those set by contract, and FLSA-defined overtime at FLSA rates.

For example, the King County Police Officers Guild contract terms set all time worked in excess of the officer's regular schedules as overtime. If an officer's schedule resulted in 32 regularly scheduled hours in a given workweek, and the officer worked another 4 hour shift, that 4 hours of time is contractual overtime, but not FLSA overtime (because it is under the total 40 hours for the workweek).

The Enriched Rate

KCSO's previous payroll system, MSA, used a calculation referred to as the "enriched rate." Similar to the FLSA overtime premium, the enriched rate calculates a premium for overtime (including premium pays). However, the enriched rate formula is different than the FLSA premium calculation in four ways:

- It includes most, but not all, premium pay types.
- It does not divide premium pay by the actual hours worked in the period. Instead, it divides the semi-monthly value of the included premium pays by 87—the presumed amount of regular hours worked in the pay period (not the actual hours worked).
- It multiplies this premium by 1.5 times for overtime hours (not .5 times as with FLSA overtime).
- It applies to all contractual overtime, not only hours in excess of 40 per workweek.

The enriched rate was introduced, because the MSA system could not perform the FLSA rate calculation. The enriched rate is calculated at 1.5 times its value, because in that system all overtime was calculated at 1.5 that rate (not just FLSA overtime).

KCSO OVERTIME CONSIDERATIONS

The Enriched Rate and FLSA Rate Both Apply to KCSO Paychecks

When PeopleSoft was introduced as the payroll system, the FLSA rate calculation was activated for all county employees. The enriched rate calculation is still performed and paid on KCSO paychecks. This means that when KCSO employees work overtime, they are being paid both the FLSA overtime rate for FLSA overtime hours and the enriched rate for contractual overtime. According to King County central

finance, the purpose of the enriched rate was to satisfy the FLSA overtime pay requirement, but the enriched rate is no longer necessary (since PeopleSoft now pays the FLSA rate).

Calculating the FLSA Rate Requires Actual Hours Data

Two computing systems provide the information used to pay KCSO employees. ATLAS is KCSO's recently implemented time and labor system, and has been adopted over the past three years. PeopleSoft is King County's central payroll system, introduced in 2012. As of October 2016, ATLAS feeds hours worked data into PeopleSoft, which then uses that data to calculate the FLSA rate. Because the enriched rate calculation does not depend on actual hours worked, and applies to all contractual overtime, inaccuracies in regular work hours schedule data do not affect the enriched rate calculation. Inaccuracies do affect the FLSA rate calculation. Without the enriched rate, FLSA compliance requires accurate time records, and using those records to accurately calculate the FLSA rate.

7(k) Period and Overtime Administration

Central finance managers noted that the complexity of the overtime pay system would increase with an extended 7(k) period. The extended period would mean that later changes to time and labor records would cause more recalculations of existing FLSA overtime rates. For example, because the FLSA work period is longer, any change affects the number of hours worked in the period for calculating the FLSA rate for that period—in turn requiring that the FLSA rate for all FLSA overtime be recalculated and adjusted for the period. They felt that the difficulty in implementation and administration of an extended 7(k) period was not worth the minor potential financial benefit, given contractual overtime and the enriched rate.

Sheriff's Response



KING COUNTY SHERIFF'S OFFICE
516 Third Avenue, W-116
Seattle, WA 98104

John Urquhart
Sheriff

KING COUNTY AUDITOR
JUN 22 2017
RECEIVED

June 22, 2017

Kymer Waltmunson
King County Auditor
Room 1033
C O U R T H O U S E

Dear Ms. Waltmunson:

Thank you for the opportunity to review and comment on the proposed final report on "King County Sheriff's Office Overtime: Better Strategy Could Reduce Hidden Costs and Safety Risks."

The response from the King County Sheriff's Office is enclosed in the format requested by your office. I am happy to answer any follow-up questions and look forward to the presentation of your report on June 27, 2017. Thank you.

Very truly yours,

A handwritten signature in black ink, appearing to read "John Urquhart", written over a horizontal line.

John Urquhart
Sheriff

Enclosure

cc: Chief Deputy Pugel,
Chief Patti Cole-Tindall, Technical Services Division
Chief Dan Pingrey, Patrol Operations Division
Jason King, CFO



Recommendation 1

The King County Sheriff's Office should ensure that off-duty hours are tracked in its scheduling program.

Agency Response

Concurrence	Concur
Implementation date	As resources allow
Responsible agency	KCSO - Technical Services Division
Comment	KCSO estimates 1.5 FTEs of additional staffing would be required primarily to bring the scheduling of off-duty work hours in-house. The report notes that CAD data is not necessarily reliable, and thus KCSO would prefer the data it enters into ATLAS to be as reliable as existing ATLAS data. Tracking those hours for ATLAS would come naturally after the scheduling is brought within KCSO operations. Some off-duty hours are currently tracked on Sheriff's Intranet site (ATS Training Site) on a Secondary Employment Form, and deputies are required to notify dispatch when working off-duty employment, but it is not yet a complete and accurate record.

Recommendation 2

The King County Sheriff's Office should incorporate total hours worked, including off-duty hours, into the overtime assignment criteria.

Agency Response

Concurrence	Concur
Implementation date	Same as above - as resources allow
Responsible agency	KCSO - Patrol Operations Division and Technical Services Division
Comment	See comments in Recommendation 1. KCSO estimates 1.5 FTEs of additional staffing would be required to bring the scheduling of off-duty work within existing operations in order to track hours for supervisor use.

Recommendation 3

The King County Sheriff's Office should implement a policy to limit how much overtime an individual can work, for example, capping total hours worked or changing the prioritization structure of the overtime assignment system.

Agency Response

Concurrence	Concur
Implementation date	Unknown
Responsible agency	KCSO
Comment	This is a mandatory subject of bargaining with the King County Police Officers Guild that is currently under negotiations.

Recommendation 4

The King County Sheriff's Office should reduce how often unincorporated patrol schedules rotate to create more days with overlapping squads on duty.

Agency Response

Concurrence	Concur
Implementation date	As resources allow
Responsible agency	KCSO
Comment	The creation of a schedule as described in the audit is subject to mandatory bargaining with the King County Police Officers Guild.

Recommendation 5

The King County Sheriff's Office should only count deployable deputies when determining how many staff are required to meet patrol minimums in unincorporated King County.

Agency Response

Concurrence	Concur
Implementation date	June 2018
Responsible agency	KCSO - Patrol Operations Division
Comment	Will be completed with the creation of an updated staffing plan, but recognizing that patrol minimums have nothing to do with the number of deployable or non-deployable deputies.

Recommendation 6

The King County Sheriff's Office should document and integrate into its staffing system how it determines patrol minimums for unincorporated King County and how it calculates the relief factor it uses to set staffing targets.

Agency Response

Concurrence	Concur
Implementation date	June 2018
Responsible agency	KCSO - Patrol Operations Division
Comment	It's important to note that the relief factor has nothing to do with patrol minimums. Patrol minimums in a given district or precinct are based on geography and officer safety. Altering the relief factor is important for an overall staffing plan, but the staffing plan will also primarily be based on what patrol minimums are. The relief factor informs how many deputies are ultimately needed to meet those minimums with what quantity of overtime is acceptable.

Recommendation 7

The King County Sheriff's Office should create a staffing model for unincorporated patrol that accurately reflects both current and future staffing needs, the actual number of deputies that can be deployed to meet patrol minimums, and opportunities to reduce backfill overtime through strategic scheduling.

Agency Response

Concurrence	Concur
Implementation date	June 2018
Responsible agency	KCSO - Patrol Operations Division
Comment	We will continue to work with the Auditor's Office on the creation of an updated staffing model.

Recommendation 8

The King County Sheriff's Office should collect and monitor data on the impact of sliding and redeployment if it continues these strategies to determine whether any potential benefits exceed the operational costs and negative impacts.

Agency Response

Concurrence	N/A
Implementation date	
Responsible agency	
Comment	Based on input from the Auditor, we have determined sliding and redeployment do not save a significant amount of money, and have ended the practice.

Recommendation 10

The King County Sheriff's Office should document its overtime approval procedures and controls, including standards for changing staffing and schedule settings in the ATLAS time and labor system.

Agency Response

Concurrence	Concur
Implementation date	January 2018 or sooner.
Responsible agency	KCSO - Technical Services Division
Comment	Change requests tracked via email to ATLAS.Help@KingCounty.gov. Procedure to be added to the department's Standard Operating Procedures (SOP).

Recommendation 11

The King County Sheriff's Office should collect and monitor data on how often compensatory leave leads to additional backfill overtime and develop a plan to control its use if it begins to increase backfill exponentially.

Agency Response

Concurrence	Concur
Implementation date	Ongoing
Responsible agency	KCSO
Comment	The Auditor notes this has not been a problem but has the potential to become one. If the problem spikes, we will address it. A recently created report in ATLAS will help with monitoring compensatory leave that leads to additional backfill. The report is located on the Management Reports: Leave menu item. The report provides list of Comp Time events within a selected period of time, listing the Section, Unit, Employee, Calendar Date, Leave Hours, and number of hours filled at Straight Time and Number of hours filled at Overtime.

Recommendation 12

The King County Sheriff's Office should monitor implementation of the overtime assignment function in the ATLAS time and labor system to make sure new system functionalities ease schedule administration.

Agency Response

Concurrence	Concur
Implementation date	Ongoing
Responsible agency	KCSO - Technical Services Division
Comment	<p>1) Select Sergeants at various locations have been identified to become Advanced Users in ATLAS. This will allow some Sergeants/Supervisors the ability to perform Scheduling changes in the system using a tool called Quick Extend. This will NOT permit out of Unit scheduling changes. As of May 2017 a few Sergeants at both Kenmore and SeaTac have the training and the ability to use Quick Extend. Training is in progress for the remainder of the pre-selected group of Sergeants. (completion of training targeted for end of Summer 2017 based on resource availability)</p> <p>2) System lag time has been reported by multiple users. The Application Administrator does recognize the problem. There have been many communication events with the vendor, Emerald City Software, and they are well aware of the issue. A new version of the Roster is in the test program as of May 2017, for testing and exploring. This new Roster version will need to be tested by a few Sergeants before releasing it for general use.</p> <p>3) The ATLAS Application Administrator and Project Manager reduce the 'testing' load for the Sergeants by selecting only a few Officers to trial new tools and features. The selected group emails with the Application Administrator and Project Manager to provide direct feedback on new features and changes.</p>

*Recommendation 9 sent to DES for response.

Executive Response



King County

Dow Constantine
King County Executive
401 Fifth Avenue, Suite 800
Seattle, WA 98104-1818
206-263-9600 Fax 206-296-0194
TTY Relay: 711
www.kingcounty.gov

**KING COUNTY AUDITOR
JUN 22 2017
RECEIVED**

June 22, 2017

KyMBER Waltmunson
King County Auditor
Room 1033
COURTHOUSE

Dear Ms. Waltmunson:

Thank you for the opportunity to review and comment on the proposed final report on “King County Sheriff’s Office Overtime: Better Strategy Could Reduce Hidden Costs and Safety Risks.”

The Department of Executive Services is responding to recommendation number 9 of this report that recommends that the Executive eliminate the enriched rate. The enriched rate was configured in the payroll system prior to 2012 because that system was unable to calculate Fair Labor Standards Act (FLSA) overtime pay. Though the calculation of overtime using the enriched rate process is more generous than the FLSA requires, it has satisfied FLSA compensation requirements but at a higher cost. In 2012, the County’s central finance division introduced a new payroll system that calculates the FLSA overtime rate, but the County was unable to unilaterally discontinue paying the enriched rate to King County Sheriff’s Office employees due to bargaining obligations.

The County agrees that the payroll system of record (PeopleSoft) should calculate the overtime rate and must discharge our bargaining obligations with labor to eliminate the secondary overtime calculation in order to do so.

Thank you for collaborating on this important work. The rich discussion that occurred during the technical review and the opportunity to provide further citations and information indicates significant cooperation and respect between the Department of Executive Services, Benefits and Payroll Operations section and the Auditor’s Office.

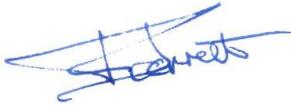


*King County is an Equal Opportunity/Affirmative Action Employer
and complies with the Americans with Disabilities Act*

KyMBER Waltmunson
June 22, 2017
Page 2

If you have any questions regarding our audit response, please contact Benefits, Payroll and Retirement Operations Manager Mary Beth Short at 206-263-2506.

Sincerely,



Dow Constantine
King County Executive

Enclosure

cc: Fred Jarrett, Deputy County Executive, King County Executive Office (KCEO)
Rhonda Berry, Chief of Operations, KCEO
Megan Pedersen, Director, Office of Labor Relations, KCEO
Caroline Whalen, Director, Director, Executive Services (DES)
Ken Guy, Director, Finance and Business Operations Division, DES
Mary Beth Short, Manager, Benefits, Payroll and Retirement Operations, DES

Recommendation 9

The County Executive should eliminate the enriched rate.

Agency Response

Concurrence	Concur
Implementation date	As soon as bargaining obligations with unions are completed
Responsible agency	Office of Labor Relations
Comment	The Executive concurs that the County should not apply a secondary method of calculating overtime pay.

*Recommendations 1-8, and 10-12 sent to KCSO for response.



Statement of Compliance, Scope, Objective & Methodology

Statement of Compliance with Government Auditing Standards

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Scope of Work on Internal Controls

This audit reviewed the processes and controls in place to ensure that officers are correctly compensated for overtime work and that overtime assignment does not result in fraud, waste, or abuse.

Scope

This audit reviewed the use of overtime within the King County Sheriff's Office (KCSO) from 2014 to 2016 in order to identify potential areas for cost savings and risk reduction.

Objectives

1. How many total hours do KCSO employees work, and how does this relate to safety and performance?
2. What factors drive KCSO's use of overtime, and what opportunities exist to reduce overtime costs?
3. To what extent does KCSO have sufficient processes and controls in place to ensure correct assignment and compensation for overtime?

Methodology

To answer our first objective, we reviewed academic literature on police working hours, fatigue, and performance. We also interviewed and conducted focus groups with KCSO management and supervisors, as well as representatives from peer jurisdictions, to gather a range of generally accepted standards for safe working hours. We compared KCSO officers' hours to these standards and used payroll data, human resources data, and risk management data to perform regressions and determine the relationship between overtime hours and safety and performance incidents. For more detail on the data used and our regression analyses, see Appendix 1.

For the second objective, we developed a staffing model based on actual leave and attendance patterns from KCSO payroll data. We then altered the inputs of the model to determine the effects that different schedules and staffing levels would have on backfill overtime. We also interviewed KCSO supervisors to understand the operational implications of these different schedules. For more detail on the model, see Appendix 3.

For the third objective, we reviewed KCSO's processes and technology for approving and paying for overtime assignments. We interviewed KCSO management, supervisors, technology managers, and payroll administrators as well as the King County Finance and Business Operations Division. We also reviewed the Fair Labor Standards Act, KCSO's General Orders Manual, and labor negotiation agreements.



List of Recommendations & Implementation Schedule

Recommendation 1

The King County Sheriff's Office should ensure that off-duty hours are tracked in its scheduling program.

IMPLEMENTATION DATE: As resources allow

ESTIMATE OF IMPACT: Tracking off-duty hours in the scheduling system will allow supervisors to see the total number of hours that a given officer is working on a given day. This will provide the supervisor with more complete information about the officer's workload and potential for fatigue. Supervisors can use this information to prevent overworked officers from working backfill overtime.

Recommendation 2

The King County Sheriff's Office should incorporate total hours worked, including off-duty hours, into the overtime assignment criteria.

IMPLEMENTATION DATE: Same as above – as resources allow

ESTIMATE OF IMPACT: Including total hours in the overtime assignment criteria tool will provide supervisors with a more complete understanding of officers' workload and potential for fatigue on a given day. As a result, the tool will be able to prioritize officers who have worked fewer total hours so that the most fatigued officers do not work more overtime assignments.

Recommendation 3

The King County Sheriff's Office should implement a policy to limit how much overtime an individual can work, for example, capping total hours worked or changing the prioritization structure of the overtime assignment system.

IMPLEMENTATION DATE: Unknown

ESTIMATE OF IMPACT: Limiting the number of hours officers can work will reduce the risk of negative incidents like injuries, car accidents, and conduct resulting in complaints.

Recommendation 4

The King County Sheriff's Office should reduce how often unincorporated patrol schedules rotate to create more days with overlapping squads on duty.

IMPLEMENTATION DATE: As resources allow

ESTIMATE OF IMPACT: Reducing the frequency of rotation will create overlapping days when more than two patrol squads are on duty. In turn, this can reduce the total amount of backfill overtime needed, in part by allowing better coordination of other activities such as training. The extent to which backfill and training overtime are reduced depends on how well KCSO utilizes the overlap periods for training opportunities.

Recommendation 5

The King County Sheriff's Office should only count deployable deputies when determining how many staff are required to meet patrol minimums in unincorporated King County.

IMPLEMENTATION DATE: June 2018

ESTIMATE OF IMPACT: Counting staff resources in this way will make it easier for KCSO management to determine whether they can meet target staffing levels.

Recommendation 6

The King County Sheriff's Office should document and integrate into its staffing system how it determines patrol minimums for unincorporated King County and how it calculates the relief factor it uses to set staffing targets.

IMPLEMENTATION DATE: June 2018

ESTIMATE OF IMPACT: This analysis will allow KCSO to determine whether staffing minimums and target staffing levels are set appropriately to achieve the office's objectives.

Recommendation 7

The King County Sheriff's Office should create a staffing model for unincorporated patrol that accurately reflects both current and future staffing needs, the actual number of deputies that can be deployed to meet patrol minimums, and opportunities to reduce backfill overtime through strategic scheduling.

IMPLEMENTATION DATE: June 2018

ESTIMATE OF IMPACT: Developing a staffing model will allow KCSO to manage overlapping schedules in order to reduce the amount of backfill and training overtime needed. Additionally, a model can help inform decisions about KCSO staffing changes by predicting how the changes would affect backfill overtime levels, and other factors.

Recommendation 8

The King County Sheriff's Office should collect and monitor data on the impact of sliding and redeployment if it continues these strategies to determine whether any potential benefits exceed the operational costs and negative impacts.

IMPLEMENTATION DATE: Unknown

ESTIMATE OF IMPACT: Collecting this information will help determine whether the potential benefits of these strategies outweigh the operational and financial costs.

Recommendation 9

The County Executive should eliminate the enriched rate.

IMPLEMENTATION DATE: As soon as bargaining obligations with unions are completed

ESTIMATE OF IMPACT: Eliminating the enriched rate will save the county approximately \$1.2 million per year and help in simplifying payroll processing and KCSO employee paychecks.

Recommendation 10

The King County Sheriff's Office should document its overtime approval procedures and controls, including standards for changing staffing and schedule settings in the ATLAS time and labor system.

IMPLEMENTATION DATE: January 2018 or sooner

ESTIMATE OF IMPACT: Documenting these procedures will help ensure that the current practices in place to detect and prevent overtime fraud and abuse will continue at KCSO as personnel changes.

Recommendation 11

The King County Sheriff's Office should collect and monitor data on how often compensatory leave leads to additional backfill overtime and develop a plan to control its use if it begins to increase backfill exponentially.

IMPLEMENTATION DATE: Ongoing

ESTIMATE OF IMPACT: Tracking this information will allow KCSO to know if compensatory leave becomes more costly, while developing a plan will provide a strategy to mitigate these costs if necessary.

Recommendation 12

The King County Sheriff's Office should monitor implementation of the overtime assignment function in the ATLAS time and labor system to make sure new system functionalities ease schedule administration.

IMPLEMENTATION DATE: Ongoing

ESTIMATE OF IMPACT: Easing schedule administration will allow supervisors to spend less time and energy on administrative tasks and instead focus on other responsibilities, such as supervision of patrol operations.



KING COUNTY AUDITOR'S OFFICE

Advancing Performance & Accountability

KYMBER WALTMUNSON, KING COUNTY AUDITOR

MISSION Promote improved performance, accountability, and transparency in King County government through objective and independent audits and studies.

VALUES INDEPENDENCE - CREDIBILITY - IMPACT

ABOUT US The King County Auditor's Office was created by charter in 1969 as an independent agency within the legislative branch of county government. The office conducts oversight of county government through independent audits, capital projects oversight, and other studies. The results of this work are presented to the Metropolitan King County Council and are communicated to the King County Executive and the public. The King County Auditor's Office performs its work in accordance with Government Auditing Standards.



This audit product conforms to the GAGAS standards for independence, objectivity, and quality.