King County Auditor's Office
Kymber Waltmunson, King County Auditor
King County

Light Duty Fleet: Costs and Emissions Could Be Reduced

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April 28, 2015

Executive Summary

Despite the efforts of agencies to reduce the cost and emissions produced by county vehicles, underutilized vehicles and fuel inefficiency are barriers to further progress. Additionally, agencies could improve decision-making about the size and composition of the fleet if better cost, use, and fuel data were available. We make recommendations related to identifying and implementing technologies and alternatives to help ensure optimal fleet size, reducing idling by law enforcement vehicles, and improving data for decision-making.

King County Auditor's Office

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Light Duty Fleet: Costs and Emissions Could Be Reduced

Report Highlights

April 28, 2015

Why this Audit Is Important

This audit of light duty fleets aligns closely with King County Executive and Council policy priorities of fiscal responsibility and environmental impact. The county owns about 1700 light duty vehicles and spent more than $13 million on these vehicles in 2013. The audit focuses on how agencies make decisions related to the size and composition of their light duty fleet to best meet strategic goals.

What We Found

Many vehicles are being driven fewer miles than required by the county's minimum use policy, which is intended to rightsize the county fleet. The cost-efficiency of vehicles can also be measured by how much time a vehicle is in use or by the contribution of the car to county business needs, but decision-makers currently lack consistent data in these areas, which hampers efforts to ensure the most economic fleet size. As a result, fleet costs may be higher than necessary to provide reasonable transportation options for employees who travel to conduct county business.

Fleet Administration customers are using less fuel than in the past, but reducing idling by King County Sheriff patrol vehicles is key to further reductions in total county fuel use. Patrol cars use about the same amount of fuel per year idling as the total amount of fuel used by all other Fleet customers combined. In addition, a lack of consistent and accurate data on fuel consumption prevents decision-makers from realizing potential efficiency gains and ensuring progress toward environmental goals.

Finally, we determined that the lack of cost analysis when making high-risk vehicle purchasing decisions may contribute to higher-cost fleet selections.

What We Recommend

We make seven recommendations to help decision-makers achieve county strategic goals through optimization of fleet size and vehicle performance. Recommendations touch on automating and enhancing vehicle data, making thorough utilization decisions, evaluating car-sharing options, reducing idle time, and rigorous evaluation of vehicle costs prior to purchases.

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1. Rightsizing the Fleet

Section Summary

Many vehicles are being driven fewer miles than required by the county's minimum use policy. County policy allows low-mileage vehicles if they are used frequently or otherwise needed for business purposes, but data about frequency and business needs is not tracked consistently across agencies. As a result, fleet costs may be higher than necessary to provide reasonable transportation options for employees who travel to conduct county business.

County policy and leading practices require fleet size justification

Good management practices require those entrusted with public resources to use those resources efficiently, economically, and effectively. Consistent with this principle, King County has a minimum use policy for county-owned vehicles. This policy was created in 2009 in response to a 2007 Auditor's Office audit, which found a high proportion of underutilized vehicles. The policy requires agencies to operate vehicles "at the lowest effective cost per mile for the life of a vehicle." The policy also specifies three ways to satisfy this requirement: 1) meet a mileage standard, 2) use the vehicle at least a certain number of days, or 3) show that the vehicle is needed for county business purposes. In terms of miles, most county vehicles are still underutilized. Business needs and data on the amount of time a vehicle is used are not currently tracked across agencies in a way that can confirm utilization according to those standards.

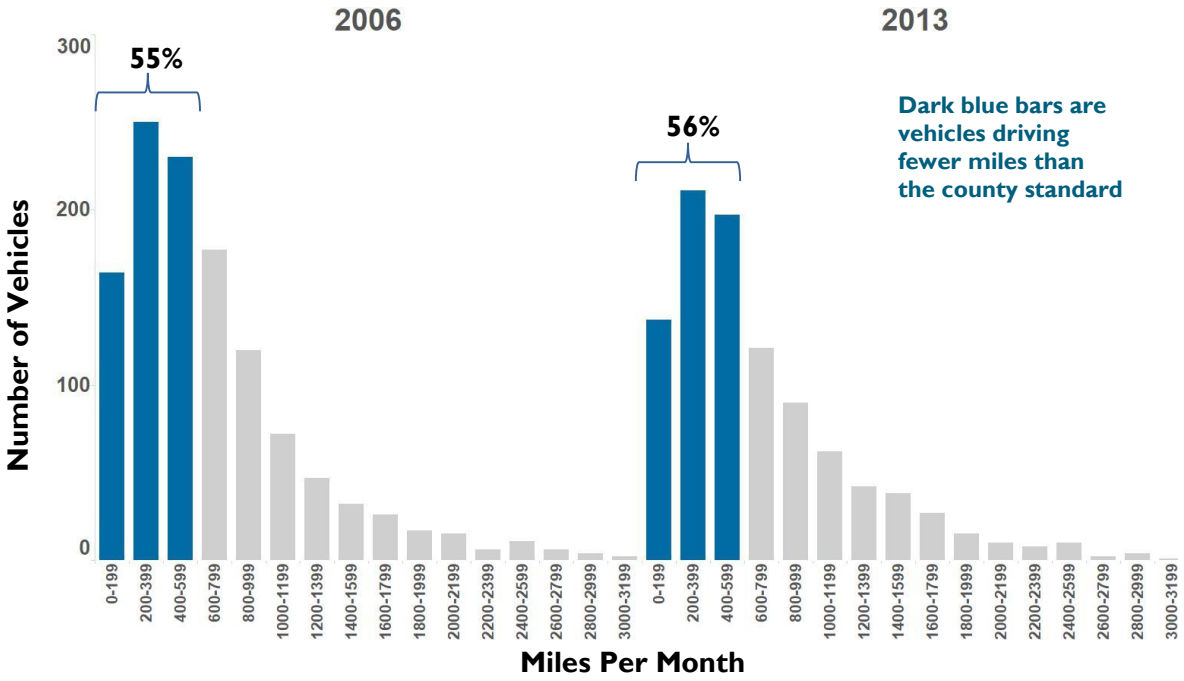
Research suggests fleet management leading practices should be considered in King County to help reduce cost and emissions. For example, the U.S. Government Accountability Office recommends that fleet managers maintain sound data systems. These systems should include data on inventory, costs, and utilization in order to provide the basis for analysis needed to make cost-effective decisions about appropriate fleet size and composition. While King County agencies currently track some data, wider implementation of technological solutions to automatically collect comparable data could improve the process to identify and reduce under-utilized vehicles and therefore reduce costs. Additionally, other jurisdictions are providing access to private car-sharing companies to help reduce the number of government-owned vehicles.

Many vehicles in county fleets do not meet the mileage standard

With the exception of patrol vehicles used by the King County Sheriff's Office (KCSO), the majority of vehicles are being driven fewer miles than required by the county's minimum use policy. In 2013, 56 percent of vehicles traveled fewer miles per month than would be required to meet county minimum use policy. As shown by the percentages in Exhibit A, this is slightly

higher than in 2006. The blue bars portray the light-duty vehicles driven less than 600 miles per month, and therefore, do not meet the mileage standard of 7,200 miles per year. These vehicles made up the majority of the fleet in both 2006 and 2013.[1]

Exhibit A: The majority of vehicles do not meet the standard for miles[2]



Source: King County Auditor's Office

Trip costs are highest for low-mileage vehicles

Because major costs to own and maintain a vehicle are fixed, trip costs for cars driven fewer miles are higher than those driven more miles. Exhibit B illustrates this relationship for cars managed by the Fleet Administration Division.[3] The line at 7,200 miles in Exhibit B represents the county's utilization standard adopted in 2009 that is intended to reduce the number of vehicles that have a high cost per mile. Optimizing this relationship by reducing the fleet to the minimum number of vehicles needed to conduct business is a best practice known as rightsizing.

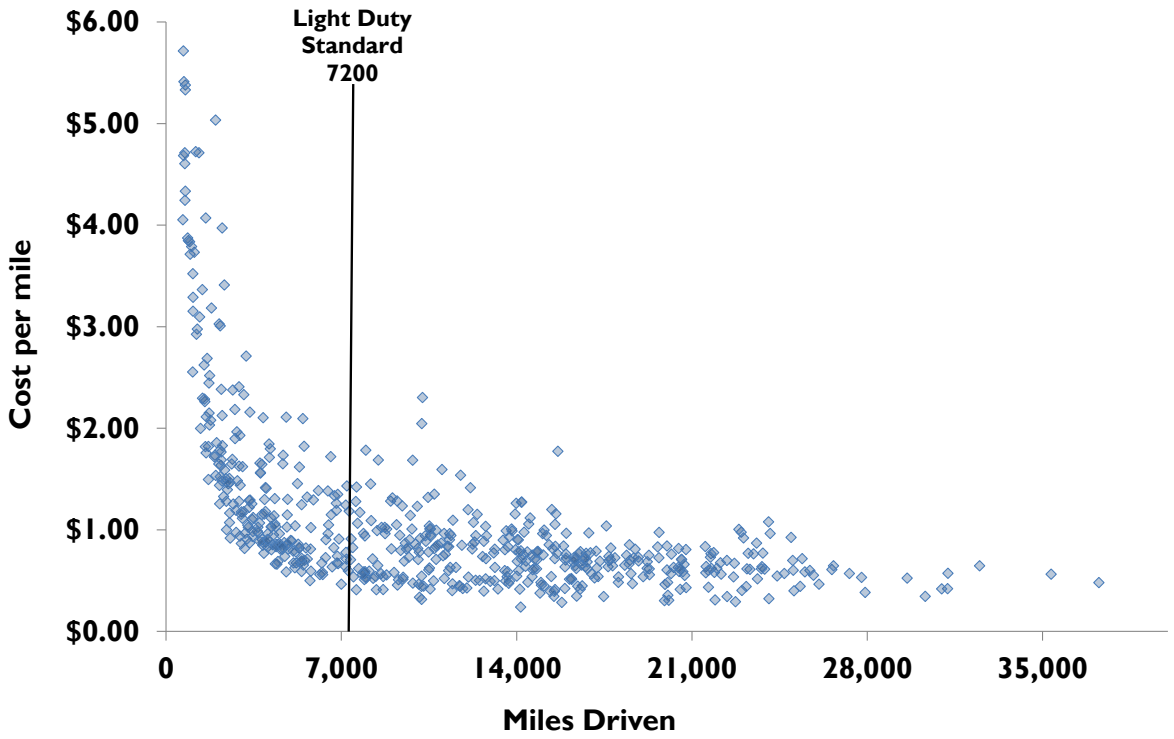
[1] We chose to include 2006 and 2013 to compare the year of our previous light duty fleets audit to the most recent full year of data. These two years also represent a before-and-after of the implementation of the county's Light Duty Utilization Policy.

[2] The vehicle utilization illustrated in Exhibit A excludes vehicles from KCSO and the Public Health Department from the comparison. The reason for excluding KCSO vehicles is that while the numbers of vehicles in the county fleets decreased from 2006 to 2013, the number of vehicles operated by KCSO remained relatively constant. As KCSO vehicles are also highly utilized, excluding KCSO vehicles from the comparison eliminates the effect of a higher proportion of relatively highly utilized KCSO vehicles in 2013. Additionally, Public Health just joined the review process in 2013 and has a relatively high number of underutilized vehicles by the mileage standard. Including Public Health would skew the comparison toward underutilization without comparable data for 2006. The comparison in Exhibit B most accurately represents the impact of the utilization policy and review process on the county fleets.

[3] Fleet management agencies include Fleet Administration, Transit Division, Solid Waste Division, and King County International Airport. Fleet Administration customers include King County Sheriff's Office, Wastewater Treatment Division, Road Services Division, Public Health, Parks Division, Assessor's Office, and others.

1. Rightsizing the Fleet

Exhibit B: Cost per mile decreases as utilization increases*



* Based on 2013 data
Source: King County Auditor's Office

Data limitations hamper efforts to rightsize county fleets

Decision-makers currently lack consistent information on how frequently vehicles are used, which hampers the ability to rightsize the fleet. The frequency at which a vehicle is used is the second way to satisfy county policy. Detailed information about the frequency of use can reveal opportunities to share or even eliminate vehicles.[4] However, this data is tracked in various forms, including hand-written logs, which can affect accuracy and the level of detail needed to make decisions. Most agencies currently lack the automated systems necessary to collect and use this data more efficiently.

Better data could improve ability to rightsize the fleet and save money

When agencies have collected and used detailed data on the amount of time a vehicle is used, they report being able to improve business practices and reduce underutilized vehicles. However, in some cases, gathering this data is time-consuming and requires multiple staff. Newer vehicle tracking technologies are available and could provide data automatically on patterns of vehicle use. This could help the County save money by efficiently providing reliable data to identify opportunities for improvements.

[4] Frequency of use standard is at least 70 percent of working days.

There are multiple vendors of vehicle tracking systems, and several jurisdictions have reported significant savings by using this technology to reduce underutilized vehicles based on real-time data on vehicle usage. For example, a report on Washington D.C.'s fleet claims over $1 million in savings in the first year of its use of this type of technology in its vehicles.

There are other potential benefits of using this technology as well. Some systems provide the ability to remotely locate vehicles and allow multiple agencies to share the vehicle, thus allowing agencies using different funding sources to utilize the same vehicle. Some of these systems, such as the FastFleet system offered by Zipcar, allow data to be exported directly to current fleet management software.

Additionally, systems like FastFleet also track the actual time vehicles are used rather than days. Although county policy does not require that agencies track the number of hours a vehicle is in use, understanding whether a car is used one hour per day or six hours per day could help decision-makers identify sharing opportunities or determine whether other options could meet their transportation needs.

County agencies are currently piloting technologies to help manage their fleets. The King County Assessor's Office has been using a technology that allows employees to reserve cars online and access the vehicle through a keyless entry system. This technology has allowed the Assessor's Office to move vehicles to various locations as needed. Additionally, Road Services is in the process of implementing a technology that tracks vehicle location and other key data, including route traveled, speed, idling time, and mileage, among others. This information will help decision-makers better manage the fleet, dispatch staff efficiently, and track vehicle usage to improve cost efficiency.

While these technologies provide data for a portion of the county's vehicles, most are not currently equipped with data-collection devices, and the costs and benefits of using them have not yet been evaluated. Decisions on the expanded use of these technologies would be improved by an understanding of the cost and efficiency gains realized by current efforts as well as comparisons to other options available on the market.

1. Rightsizing the Fleet

Recommendation 1

To help better utilize vehicles and rightsize the fleet, the County should automate vehicle use data by doing the following:

a. Fleet Administration should assess the options for automating vehicle data, including its current technology pilots. The assessment should include lessons learned about implementing the two types of technology. The documentation of this assessment should be shared with the Transit, Solid Waste, and King County International Airport Divisions.
b. Based on this assessment, the County Executive should create and implement a plan to automate vehicle use data.

Vehicle justifications are challenging to evaluate

The County could also be retaining underutilized vehicles, because justifications can be challenging to evaluate. The Vehicle Justification Review Committee evaluates justifications provided by an agency for vehicles not meeting the mileage or frequency standards, but that the agency believes serves a business need. If the review committee does not approve the justification, the agency must turn in the vehicle.

However, the review committee has denied only 15 of the 748 justifications based on special equipment and business requirements it received between 2009 and 2013. About 180 vehicles were also voluntarily disposed of after the agency received data about mileage and cost from the review process and discussed options with Fleet Administration.

Upon reviewing justifications provided by agencies to the review committee, business needs are described at varying levels of detail and can be difficult to evaluate without additional information (see sample in Exhibit C). The review committee has the option of requiring additional documentation or explanation from the agency, and committee minutes show this additional scrutiny can be rigorous. But the review committee only applies additional scrutiny to a small percentage of justifications submitted, and as noted before, few justifications are denied.

Quantifying the business need for a vehicle would help agencies think about resources in terms of progress toward agency or county goals. If used as part of the justification documentation, a quantified business need provides a clearer indicator of use for the review committee process. One promising practice by the Assessor's Office is to think about how a vehicle improves quantifiable results for its office. For example, managers measure the number of assessments completed by an employee and the cost differences of vehicle alternatives to help decide whether to own and where

to locate a vehicle. Below is an example of how a justification by the Assessor's Office could provide more detail by referencing agency goals.

Exhibit C: Justifications based on business needs could drive achievement of agency goals

Justification submitted to 2014 review committee		Potential justification with business need quantified
"To support the vital function of property appraisal."	→	"This vehicle has helped our office to increase the number of assessments by __ in 2014, thus contributing to our goal of __ assessments per year."

Source: King County Auditor's Office

Recommendation 2

The County Executive should update the Light Duty Utilization Policy to ensure that agencies quantify their business need for any underutilized vehicle in terms of the benefit to agency or county goals.

There may be more cost-effective transportation options

Alternatives to vehicle ownership present opportunities to reduce the number of underutilized vehicles. As part of the review process, agencies are only asked to attest to a limited review of alternatives. Outside of the review process, Fleet Administration reports that they discuss potential options with agencies, including using Lync for virtual meetings as opposed to using vehicles to meet in person. Some agencies, like the Wastewater Treatment Division, have reported purchasing lower-cost alternatives such as bicycles and golf carts for use on project sites rather than vehicles.

Additional options that have not yet been considered by the county are being used by other jurisdictions to reduce costs, such as contracting with private car-share companies. Chicago, which uses a combination of FastFleet technology in government-owned vehicles and Zipcar memberships for its employees to use for business purposes, has reduced its fleet by more than one-third and claims savings of $7 million since the program started in 2011. There are several car-share companies operating in the Seattle area, with more anticipated in the coming years that could provide opportunities to reduce vehicle ownership.

Recommendation 3

Fleet Administration should evaluate whether the use of private car-sharing programs could be a cost-effective way of providing options for employee business travel requirements. The evaluation should include an analysis of which agencies could most benefit from a private car-sharing program, and a cost comparison of private car-sharing versus continuing to use low-mileage county vehicles.

2. Reducing Fuel Use

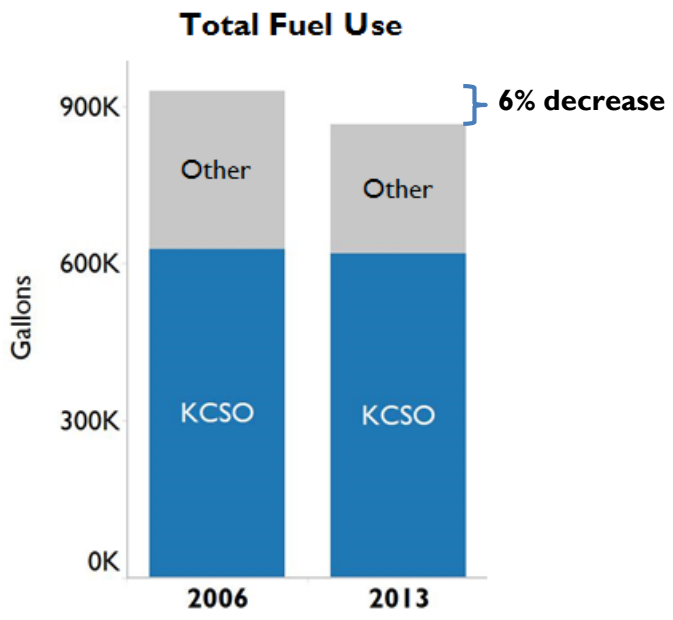
Section Summary

Reducing idling by KCSO patrol vehicles is key to reducing total county fuel use. Increased efficiency by the rest of Fleet's customers could also save fuel, but to a smaller degree. Additionally, a lack of accurate data on fuel consumption for all vehicles prevents decision-makers from realizing potential efficiency gains and understanding progress toward county environmental goals.

Improving KCSO fuel efficiency through reduced idling is key to future reductions in total fuel use

Due to the nature of their work, KCSO vehicles consume more fuel than other agencies, which makes efforts to increase the efficiency of KCSO vehicles key to reducing overall fuel use as shown in the blue bars in Exhibit D. [5] While Exhibit D also shows that fuel use by Fleet Administration customer vehicles has decreased by about six percent from 2006 to 2013, the reduction comes mainly from agencies other than KCSO. This is because these agencies are driving fewer miles and own more hybrid and fuel-efficient vehicles than in the past.

Exhibit D: While KCSO's fuel use remained the same, other Fleet customers have reduced fuel consumption by 6%



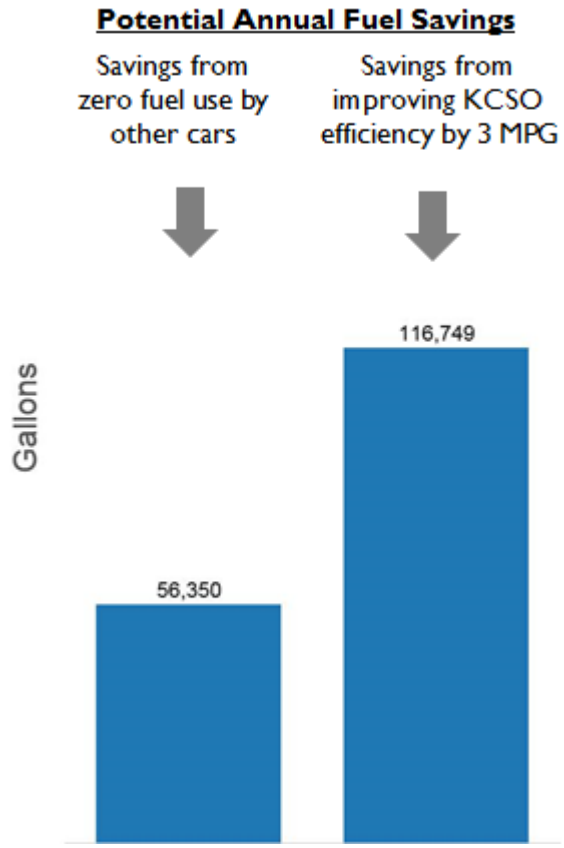
Source: King County Auditor's Office

Continued efforts such as reducing miles and increasing fuel efficiency among agencies other than KCSO will help reduce fuel consumption, but these efforts are focused on a smaller portion of the fuel used and therefore have a smaller impact. Exhibit E shows that twice as many

[5] Fuel use in this section refers to Fleet Administration customer data only. Data for all light duty vehicles is not currently known, and this will be addressed later in the report.

gallons could be reduced by slightly increasing the efficiency of KCSO vehicles rather than preventing cars from other agencies from using fuel.[6]

Exhibit E: Small gains in KCSO fuel efficiency make a greater difference in fuel savings than reducing fuel use by other cars to zero



Source: King County Auditor's Office

KCSO patrol cars use about the same amount of fuel per year idling as the total amount of fuel used by all other Fleet customers combined. According to a sample of KCSO patrol cars, these vehicles spend about 53 percent of their time idling. If about a half-gallon of fuel is consumed for every hour of idling, that is roughly 241,000 gallons of fuel spent by idling per year.[7] While significant, this level of idling is not unusual compared to reports we found on other jurisdictions.[8]

[6] Exhibit E does not include fuel used by sport utility vehicles, vans, or pickups from other agencies.
[7] The half-gallon figure comes from the U.S. Department of Energy. Ford, the manufacturer of KCSO's new patrol model, has estimated that the Interceptor and Interceptor SUV use less fuel when idling than the previous standard model, the Crown Victoria. If the estimate is correct, this could affect future fuel efficiency and idling calculations as the Interceptor becomes a larger portion of the KCSO fleet.
[8] Examples include a study of idling rates among patrol vehicles in Ottawa, Ontario, which found that they idle about 67% of the time. Columbus, Ohio reports their patrol vehicles idle about 50% of the time.

2. Reducing Fuel Use

According to KCSO, some of this idling is necessary. Idling allows officers to continue to use needed equipment while sitting in their cars, to drive off quickly in case of danger or responding to a call, and to comfortably complete work-related tasks.

Currently, other jurisdictions are exploring the use of anti-idling technology to try to reduce fuel use and emissions while maintaining critical vehicle functions for officers. This technology allows officers to continue using equipment and have the car ready to go without burning excess fuel. The Seattle Police Department has recently adopted anti-idling technology and is in the process of measuring its impact on reducing fuel use. A cost-benefit analysis to compare potential technologies and determine cost-effectiveness to meet KCSO's needs would provide key information for decision-makers.

Even if this analysis shows that current anti-idling technology options are not a cost-effective way to reduce idling for KCSO, reducing patrol vehicle idling time constitutes the greatest potential impact to help the county reduce fuel costs and emissions. KCSO recently shared a draft of an agency policy to reduce idling among patrol officers, which represents an important first step toward reducing idling.

Recommendation 4

The King County Sheriff's Office should develop and implement a plan to reduce idle time by its patrol vehicles. Initial analysis should include a cost-benefit analysis of anti-idling technology options.

Lack of Transit and SWD fuel data inhibits decision-making and risk management

The Transit and Solid Waste Divisions (SWD) were unable to produce accurate data about fuel consumption by light duty vehicles. Decision-makers require accurate data to guide actions to reduce emissions and safeguard against fuel being used for purposes other than county business. This is, in part, because previous fuel purchases made at private fueling stations were reported by the payment system company in terms of cost, but not gallons. In addition, self-reported fuel consumption by employees was not always accurate or entered consistently. Both agencies have communicated plans to improve the accuracy of their fuel data.

Recommendation 5

Transit and Solid Waste Divisions should improve the fuel data entry and monitoring processes and be able to demonstrate the accuracy of this data.

3. Improving Cost-effective Decision-making

Section Summary

King County could make more cost effective vehicle purchase and replacement decisions by making full use of cost information. Some agencies have used life cycle cost analysis for vehicle replacement decisions, but it has rarely been used for purchasing decisions. Rigorously analyzing data as agencies are selecting and replacing vehicles could help ensure that 1) purchases meet county cost and other goals, and 2) vehicles are being replaced in a way that minimizes cost to the county.

Lack of cost analysis when making significant purchasing decisions may contribute to higher-cost selections

Agencies rarely use life cycle cost analysis effectively in major vehicle purchasing decisions. Most agencies do not routinely use life cycle cost analysis (LCCA) for making significant vehicle purchasing decisions. Although in some cases the life cycle costs of alternatives may not vary much, in higher-risk situations conducting LCCA is important to ensure that the county fully understands the costs and benefits of expensive purchases. Two examples of high risk situations include 1) purchasing large fleets, described in KCSO's replacement of the Crown Victoria below, and 2) when purchasing alternative fuel vehicles.

Although the decision to purchase a new KCSO patrol vehicle was based on other factors than cost, it is one example of a situation where analysis would have highlighted significant cost impacts. KCSO recently chose the Ford Interceptor sport utility vehicle (SUV) to replace the discontinued Crown Victoria as its standard patrol vehicle. While this decision was based on multiple considerations, including vehicle performance and officer well-being, it was made without conducting life cycle cost analysis. KCSO noted that part of its decision to choose the Interceptor was based on Fleet Administration's rental rate for SUVs. While it is true that currently available information from Fleet Administration shows that rates are lower for KCSO SUVs than for sedans, it is likely that those rates will increase in the future as SUVs replace sedans for patrol operations. [9] The use of life cycle cost analysis could have allowed KCSO to more fully evaluate the tradeoffs between the benefits and lifecycle costs of available vehicle models. This is particularly true given the choice of SUVs to replace sedans.

There are some examples of effective agency use of LCCA when evaluating the purchase of alternative fuel vehicles. Conducting life cycle cost analysis for alternative fuel vehicles can help agencies determine the

[9] KCSO primarily based its financial analysis for choosing the Interceptor SUV on Fleet Administration's current rental rate for SUVs versus sedans. The lag built into the rate model and low usage of SUVs by KCSO in the past makes the rental rate a less accurate indicator of future costs than LCCA. SUVs are both more costly to purchase than sedans and get lower gas mileage. Over time, these additional costs are likely to be reflected by a higher rate from Fleet Administration.

cost and environmental impact of these decisions.[10] The Alternative Fuels Report accepted by the County Council in 2014 includes a "lesson learned" that life cycle cost analysis should be completed when alternative fuel purchases are being considered.[11] In addition, a new state regulation that local government agencies, to the extent practicable, switch entirely to vehicles powered by electricity or biofuel will go into effect in 2018. Providing a life-cycle cost analysis is currently listed as a way to demonstrate whether this purchase is practical.[12]

Some examples of agency use of LCCA for purchasing decisions include:

- Transit Division provided an example of LCCA when exploring the use of hybrid sedans
- Fleet Administration reported using LCCA for the purchase of the Nissan Leaf

Recommendation 6

The County Executive should update the Vehicle and Equipment Acquisition Policy to ensure that vehicles are purchased at the lowest effective life cycle cost, including a clearly articulated process for when life cycle cost analysis is required, such as for higher-risk purchases.

Vehicle replacement decisions are based on outdated information

Most of the county's guidance on when to replace light duty vehicles relies on increasingly outdated information. Fleet Administration built the replacement cycles using an LCCA model that we found to be sound in a 2007 audit of Vehicle Replacement.[13] Fleet Administration reports that they have not used the model for a few years because its developer retired and the programming language on which it is based is no longer in use. Therefore, decisions on when to replace most vehicles are based on increasingly outdated information, which may be increasing costs to the county.[14]

Fleet Administration acknowledges that it needs to develop a replacement for the model and has begun a process to do so.

Recommendation 7

Fleet Administration should complete its efforts to update and implement its vehicle replacement model.

[10] Alternative fuel vehicles are defined in the Alternative Fuels Technology Vehicle Report adopted by Motion 14184
[11] Motion 14184
[12] RCW 43.169.648 will be in the rule-making process until June 1, 2015. It is possible some aspects will change as a result of this process.
[13] The life cycle cost analysis model identified the economic replacement point for vehicles by analyzing the total of annual ownership, operating, and maintenance costs. The economic replacement point is the number of miles at which these costs are minimized, creating a useful marker for agencies to prevent cost-inefficient vehicle use.
[14] Transit also uses the outputs from this replacement model.

Executive Response

King County

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April 23, 2015

Kymber 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 the management of the county's non-revenue, light duty vehicle fleet.

We value the performance audit process as an integral component of our continuous improvement efforts and we are appreciative of the professionalism and collaborative approach you and your audit team brought to this important review.

Efficient management and consistent application of best practices across our vehicle fleets will enhance program delivery, lower costs of delivering our services, and help us achieve the County's emission reduction goals. We are proud of the achievements and significant improvements our fleet managers have made to increase fuel efficiency and lower emissions, improve vehicle utilization through automation, introduce better management practices and lower costs while increasing fleet reliability. We recognize, however, there is more work to be done in this area.

We concur with the findings contained in the report and will use these recommendations as guidance to further improve management of our vehicle fleet. Transit and Solid Waste have already started process improvements to improve fuel data entry and fuel monitoring; these improvements will be completed by year-end. Pilot programs have been initiated in Roads and the Department of Assessments that will inform our decisions to automate collection of vehicle data. The Fleet Administration Division and the Office of Performance Strategy and Budget are collaborating on an update to the vehicle replacement model.

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Executive Response (continued)

Kymber Waltmunson
April 23, 2015
Page 2

We are committed to continuously improving the services and programs we provide to the county and tools such as this report will help us achieve our goal. If you have any questions regarding our audit response, please contact Jennifer Lindwall, Director, Fleet Administration Division, at 206-477-3883.

Sincerely,

Dow Constantine
King County Executive

Enclosure

cc: Fred Jarrett, Deputy County Executive, King County Executive Office (KCEO)
Rhonda Berry, Chief of Operations, KCEO
Dwight Dively, Director, Office of Performance, Strategy and Budget
Harold Taniguchi, Director, Department of Transportation (DOT)
Jennifer Lindwall, Director, Fleet Administration Division, DOT
Christie True, Director, Department of Natural Resources and Parks (DNRP)
Pat McLaughlin, Director, Solid Waste Division, DNRP
Ken Guy, Division Director, Finance and Business Operations Division, Department of Executive Services

Executive Response (continued)

King County Auditor's Office: Light Duty Fleet Audit Recommendations & Executive Response

Recommendation	Agency Position	Schedule for Implementation	Comments
Recommendation 1 Assess options for automating vehicle use data; then create and implement plan to automate vehicle use data.	**concur**	Fleet Administration, in collaboration with customer agencies and using lessons learned from the two current pilots in Roads and Department of Assessments, will complete an assessment of options for collecting vehicle use data with a recommendation by December 31, 2015. The plan for implementation of the recommendation will be complete by June 30, 2016.	
Recommendation 2 Update light duty utilization policy to include requirement to quantify business need.	**concur**	As stated in the audit report, the policy has been in place since 2009. While the County has reduced the number of vehicles in the fleet as a result of the committee review, we agree the policy is due for a thorough review and update based on days of use and mileage, This update will include a more data driven approach as articulated in Recommendation #1 above. Fleet Administration will complete the update of the light duty utilization policy by June 30, 2016.	In advance of the policy update in 2016, we will add the requirement to quantify benefits of a business need justification to the 2015 process.
Recommendation 3 Evaluate use of private car-sharing programs.	**concur**	Fleet Administration will complete an assessment of the opportunities for using car-sharing services, as well as expanding the use of the fleet reservation system - INVERS (as piloted by DOA) by March 31, 2016.	
Recommendation 4 The KC Sheriff's Office should develop and implement plan to reduce idle time in patrol vehicles.	**reassigned**	This response was assigned by the Council Auditor to the King County Sheriff's Office.	

Executive Response (continued)

King County Auditor's Office: Light Duty Fleet Audit Recommendations & Executive Response

Recommendation	Agency Position	Schedule for Implementation	Comments
Recommendation 5 Transit and Solid Waste should improve fuel data entry and monitoring processes.	**concur**	Solid Waste The Solid Waste Division has begun developing a process to integrate data from disparate systems into a single system so that fuel data is accurate and complete. The new process being developed will be informed by best practice used currently by other County agencies similarly organized. The new data management approach will be developed by June 1, 2015, with preliminary testing to follow. The date by which we achieve full implementation will be included in the approach that is to be developed. Transit Over the course of the audit period, changes to the business process associated with fueling Transit's non-revenue vehicles were in progress. The process that has been in place for the past 3-4 years is one where odometer readings are required prior to a vehicle being fueled. This information is checked when the vehicles are brought in for servicing. Further improvements through automation are anticipated as Transit completes replacement of the fueling equipment over the next year.	

Executive Response (continued)

King County Auditor's Office: Light Duty Fleet Audit Recommendations & Executive Response

Recommendation	Agency Position	Schedule for Implementation	Comments
Recommendation 6 Executive should update Vehicle and Equipment Acquisition policy to ensure vehicles are purchased at lowest effective lifecycle cost.	**concur**	Fleet Administration will update the policy by March 31, 2016.	In 2013, Fleet Administration assessed the pilot of propane field vehicles using the Resource LCCA tool developed in response to the Green Building ordinance and the evaluation of projects proposed for the Fund to Reduce Energy Demand. This analysis lead to the purchase of additional propane trucks in 2014 and 2015.
Recommendation 7 Fleet Administration should complete efforts to update and implement vehicle replacement model.	**concur**	Fleet Administration and the Office of Performance, Strategy and Budget are jointly working to update the vehicle replacement model. We are currently in the research phase of assessing other agencies' tools and methods. The scheduled completion is the end of Q1, 2016 to inform the vehicle standards due to Council August 31, 2016.	

Sheriff's Response

Recommendation	Agency Position	Schedule for Implementation	Comments
Recommendation # 4 The King County Sheriff's Office should develop and implement a plan to reduce idling time by its patrol vehicles. Initial analysis should include a cost-benefit analysis of anti-idling technology options.	Concur	The Sheriff's Office has already updated and implemented changes to the General Orders Manual to reduce unnecessary idling of patrol vehicles. We will continue to compare ourselves to other police agencies by keeping track of their idling data, as well as review the anti-idling technology as it becomes available and is tested.	At 53 percent, the Sheriff's Office patrol vehicles appear to be at the low end of idling ranges cited by studies of different police agencies (50 to 67 percent).

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 and Objectives

The scope of this audit was limited to non-revenue vehicles that are managed by Fleet Administration and the Transit and Solid Waste Divisions and are defined as light duty by the county's utilization policy (cars, SUVs, vans, and pickups under one ton and with a gross vehicle weight rating of less than 8600 pounds).

The objective for this audit was to evaluate to what extent King County's fleets are the optimum size and composition to further the county's financial sustainability and environmental stewardship goals.

Methodology

To achieve our audit objective, we gathered data from the fleet asset management software on all light duty vehicles from 2006 to 2014. This data was analyzed to understand utilization patterns, fuel use, and the size and composition of each fleet. This data was shared with each agency to discuss the data patterns. We interviewed fleet managers and Fleet Administration customers about their roles in fleet management and use and how they make decisions regarding purchases and utilization. Additionally, we reviewed the documentation of the 2011 and 2014 Vehicle Justification Review Committee. We also interviewed members and administrators of the committee about their processes. We also researched various telematics, car-share, and anti-idling technology systems used by other jurisdictions and interviewed representatives from a sample of these companies and jurisdictions.

Scope of Work on Internal Controls

We assessed internal controls relevant to the audit objectives. This included review of selected policies, plans, processes, and reports. We also reviewed the computer-generated data by interviewing fleet management agencies (Fleet Administration, Transit Division, Solid Waste Division, and King County International Airport) about the data collection process and testing the reliability of these data sets.

List of Recommendations & Implementation Schedule

Recommendation 1: To help better utilize vehicles and rightsize the fleet, the County should automate vehicle use data by doing the following:

a. Fleet Administration should assess the options for automating vehicle data, including its current technology pilots. The assessment should include lessons learned about implementing the two types of technology. The documentation of this assessment should be shared with the Transit, Solid Waste, and King County International Airport Divisions.
b. Based on this assessment, the County Executive should create and implement a plan to automate vehicle use data.

Implementation Date: Evaluation complete by December 2015; Plan complete by July 2016
Estimate of Impact: Automating county vehicle data will help agency decision-making on the size and composition of their fleets by identifying sharing or reduction opportunities among county vehicles based on improved data.

Recommendation 2: The County Executive should update the Light Duty Utilization Policy to ensure that agencies quantify their business need for any underutilized vehicle in terms of the benefit to agency or county goals.

Implementation Date: June 30, 2016
Estimate of Impact: Quantifying business needs will help agency decision-makers optimize their fleet size and performance and also improve the review process by the Vehicle Justification Review Committee by providing more tangible justifications.

Recommendation 3: Fleet Administration should evaluate whether the use of private car-sharing programs could be a cost-effective way of providing options for employee business travel requirements. The evaluation should include an analysis of which agencies could most benefit from a private car-sharing program and a cost comparison of private car-sharing versus continuing to use low-mileage county vehicles.

Implementation Date: March 31, 2016
Estimate of Impact: Access to additional options for fulfilling transportation needs could reduce reliance on underutilized vehicles and save the county the associated cost.

List of Recommendations & Implementation Schedule (continued)

Recommendation 4: The King County Sheriff's Office should develop and implement a plan to reduce idle time by its patrol vehicles. Initial analysis should include a cost-benefit analysis of anti-idling technology options.

> **Implementation Date:** Ongoing
> **Estimate of Impact:** Reducing idling by King County Sheriff's Office vehicles could save the county tens of thousands of gallons of fuel and associated costs and emissions every year.

Recommendation 5: Transit and Solid Waste Division should improve the fuel data entry and monitoring processes and be able to demonstrate the accuracy of this data.

> **Implementation Date:** March 31, 2016
> **Estimate of Impact:** Improving controls will improve data reliability, which will improve decision-makers' understanding of the total cost and emissions of fuel use. It will also provide additional assurance that fuel is not being used for purposes other than county business.

Recommendation 6: The County Executive should update the Vehicle and Equipment Acquisition Policy to ensure that vehicles are purchased at the lowest effective life cycle cost, including a clearly articulated process for when life cycle cost analysis is required, such as for higher-risk purchases.

> **Implementation Date:** December 31, 2015
> **Estimate of Impact:** An updated policy will provide additional clarity to agencies about when to use life cycle cost analysis. The use of life cycle cost analysis will help inform more cost-effective decision-making about vehicle purchases.

Recommendation 7: Fleet Administration should complete its efforts to update and implement its vehicle replacement model.

> **Implementation Date:** August 31, 2016
> **Estimate of Impact:** Once completed and implemented, a vehicle replacement model will provide agencies with timely information about the optimal replacement point of vehicles, thus preventing unnecessary costs on older vehicles.