



King County

Metropolitan King County Council
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MEMORANDUM

DATE: January 6, 2011
TO: Metropolitan King County Councilmembers
FROM: Cheryle A. Broom, ^{CP} King County Auditor
SUBJECT: Traffic Enforcement Performance Measures

Summary

Ordinance 16717, adopting the 2010 budget, included a proviso in the King County Sheriff's budget restricting the expenditure of \$250,000 until the Sheriff's Office has fully cooperated with the auditor's audit of traffic enforcement functions by the Department of Public Safety in unincorporated King County.¹ The proviso directed that the audit should either validate the sheriff's quantification of costs, benefits, and performance measures for the sheriff's traffic enforcement functions, or to the extent that these have not been quantified by the sheriff, quantify them and benchmark them against other jurisdictions. This memo summarizes the results of the auditor's office review of traffic enforcement performance measures.

We found that the Sheriff's Office does not compile formal performance measures quantifying the costs and benefits of traffic enforcement activities. The sheriff and the Department of Transportation (DOT) do collect data on inputs (cost of traffic enforcement), outputs (number of traffic citations issued), and outcomes (accident rates). However, these data are collected separately and are not combined together to create performance measures that allow for evaluating the cost/benefit of the program. No attempt is made to determine how outcomes (accident rates) are affected by inputs (traffic enforcement activities) or outputs (traffic citations issued). For example, no attempt is made to determine whether the number of traffic accidents drop following traffic enforcement activities in a specific location.

While the King County Sheriff does not maintain formal performance measures for measuring the effectiveness of traffic enforcement activities, we did not find any best practices examples of performance measures or benchmarks in other jurisdictions. The type of information collected by King County (numbers of traffic citations issued and accident rates) was typical of the information collected by other jurisdictions we reviewed, and we found no examples of a jurisdiction attempting to develop a causal relationship between traffic enforcement activities and outcomes such as accident rates. Further, we were only able to find a few examples of academic research examining the effectiveness of traffic enforcement activities, and one of the studies we did find mentioned that there is a lack of research in this area:

¹ In June, 2010, The auditor's office sent a letter to the council stating that the sheriff was cooperating with the audit.

The lack of data establishing the effectiveness of traffic enforcement activities in King County means that in order to compare the costs and benefits of traffic enforcement activities in King County with benchmarks, not only would the measures of effectiveness have to be developed and quantified in King County, but also in other jurisdictions as well.

Background

Since 2003, the council has authorized the county roads fund to reimburse the Sheriff's Office for a portion of the cost of traffic enforcement activities conducted by the Sheriff's Office. In 2010, the amount of this reimbursement is \$4 million. The 2010 budget ordinance included a proviso in the Sheriff's Office budget restricting the expenditure of \$250,000 until the auditor's office certified that the Sheriff's Office is fully cooperating with the auditor's office audit of traffic enforcement functions by the Sheriff's Office.

The proviso directed that the audit should either quantify the sheriff's quantification of costs, benefits, and performance measures for traffic enforcement or if such measures do not exist, to quantify and benchmark them against other jurisdictions.

The King County Sheriff's Office has a dedicated motorcycle traffic enforcement unit consisting of nine FTEs. Traffic enforcement activities are also conducted by patrol deputies, and traffic enforcement represents about 25 percent of dispatched calls for service.

The sheriff's motorcycle traffic enforcement unit coordinates with the DOT to determine where traffic enforcement activities will be focused. Criteria for identifying areas for traffic enforcement include history of accidents, traffic problems, and citizen complaints.

Data Collected by King County on Traffic Enforcement Costs and Benefits

Traffic Enforcement Costs (inputs)

The cost of traffic enforcement activities conducted by the Sheriff's Office includes the cost of the dedicated motorcycle patrol unit and a fraction of the cost of patrol deputies while they perform traffic enforcement related duties. The Office of Management and Budget (OMB, recently renamed the Office of Performance, Strategy, and Budget) prepares a report to the County Road Administration Board each year which estimates the cost of traffic enforcement activities in the unincorporated area of King County. In 2008, OMB estimated the cost of traffic enforcement in the unincorporated area to be approximately \$7.5 million.

Traffic Enforcement Activities (outputs)

The motorcycle traffic enforcement unit reports that in 2009, it provided 2,805 hours of enforcement resulting in 6,623 citations which had the potential to generate \$1.35 million in revenue. Speeding citations were approximately 71 percent of the total.

Traffic Accident Data (outcomes)

The King County Department of Transportation keeps data on traffic accidents in unincorporated King County. The following two tables are from the Road Services Division's 2008 *Collision Data Report* and shows trends in accidents per million miles driven and per 100,000 population in unincorporated King County. No apparent trend is evident in the data.

Exhibit 1: Unincorporated King County Collisions per Million Miles Driven

Year	Total Collision Reports	Maintained Road Miles	Annual Million Miles Driven	Collision Rate
2001	2320	1,832	2,466	0.94
2002	2618	1,895	2,532	1.03
2003	2754	1,883	2,664	1.03
2004	2738	1,859	2,674	1.02
2005	2888	1,856	2,648	1.09
2006	2864	1,849	2,764	1.04
2007	2656	1,855	2,962	0.90
2008	2351	1,758	2,594	0.91

SOURCE: Road Services Division's 2008 *Collision Data Report*

Exhibit 2: Unincorporated King County Collisions per 100,000 Population

Year	Population	All Collision Types		Pedestrian		Bicycle	
		Collisions	Collisions per 100,000 population	Collisions	Collisions per 100,000 population	Collisions	Collisions per 100,000 population
2001	349,773	2,320	663	32	9.15	20	5.72
2002	351,675	2,618	744	43	12.23	36	10.24
2003	351,843	2,754	783	39	11.08	23	6.54
2004	356,795	2,738	767	35	9.81	28	7.85
2005	364,498	2,888	792	41	11.25	27	7.41
2006	367,000	2,864	780	35	9.54	24	6.54
2007	368,300	2,656	721	43	11.68	26	7.06
2008	341,150	2,351	689	39	11.43	26	7.62

SOURCE: Road Services Division's 2008 *Collision Data Report*

No Linkage Between Traffic Enforcement Inputs, Outputs, and Outcomes

While King County collects data on traffic enforcement costs (inputs), activities (outputs) and accident rates (outcomes), there is no attempt to link these data into formal performance measures for traffic enforcement activities. The data is collected by different departments for different purposes. For example, OMB collects data on traffic enforcement costs for the purpose of reporting to the County Road Administration Board. The Sheriff's Office and DOT respectively collect data on activities (outputs) and accident rates (outcomes) for external reporting purposes. No attempt is made to identify a causal linkage between traffic enforcement inputs, outputs, and outcomes. Therefore, there is no information with which to determine whether King County traffic enforcement activities actually result in improvements to traffic safety.

Traffic Enforcement Performance Measures in Other Jurisdictions

We attempted to find examples of performance measures for traffic enforcement in other jurisdictions which could be considered as benchmarks for King County. We found no instances of any jurisdiction which attempts to identify a causal relationship between traffic enforcement activities and traffic safety. For those jurisdictions where we were able to find some performance-related information, it was similar to the data collected by King County (e.g., number of citations issued, number of traffic accidents).

For example, the Washington State Patrol's performance measures for traffic enforcement include counts of the number of accidents involving fatalities and serious injuries, but no attempt is made to link patrol activities and these outcomes. The Oregon State Patrol counts the number of crashes with fatalities or serious injuries. The Idaho State Patrol measures only the percentage of time officers spend on proactive patrol. Pierce County measures only the number of traffic fatality investigations.

Additionally, we received only one response to an inquiry to members of a national performance measurement-related group for examples of performance measures for traffic enforcement and that was from King County.²

Literature Review of Traffic Enforcement Performance Measures

We conducted a literature review and found little information providing guidance for jurisdictions on how to establish performance measures for traffic enforcement, and few academic studies evaluating the effectiveness of traffic enforcement. For example, the National Highway Transportation Administration's *Statewide Traffic Enforcement Plan* recommends establishing performance measures for traffic enforcement that are both qualitative and quantitative but gives no further guidance or suggestions for specific measures. The United States Department of Justice Office of Community Oriented Policing Services publishes a guide for law enforcement performance measures titled "*Creating Performance Measures that Work*." The two traffic-related performance measures included in the guide are counts of traffic accidents and traffic fatalities.

We found few examples of academic studies evaluating the effectiveness of traffic enforcement activities in improving traffic safety or reducing accidents. In fact, one of the few studies we did find mentioned a lack of such research, and that the few studies that did exist use questionable methodologies.³ This study found a significant reduction in fatal traffic accidents among drivers who had been recently cited for a traffic infraction, but that the reduction rapidly decreased over time and that there was no significant difference in fatal accident rates three to four months after the citation.

Conclusion

The council requested that the auditor's office review the sheriff's quantification of costs, benefits, and performance measures for traffic enforcement activities and compare them to benchmarks. We found that the sheriff does not quantify costs or benefits for traffic enforcement activities, and we did not find any benchmarks for comparison. The type of data the county does collect was typical of what other jurisdictions collect.

In light of the lack of benchmarks for comparison, if the council would like the county to have performance measures that show the outcomes of traffic enforcement activities funded by county roads funds, it should consider directing the Sheriff's Office and the DOT to conduct a pilot project for exploring how best to do so.

Larry Brubaker, Senior Principal Management Auditor, conducted this review. Please contact Larry at 206-296-0369 or me at 206-296-1655 if you have any questions about the issues discussed in this memo.

LB:CB:yr

cc: Carol Cummings, Chief, Special Operations Division, King County Sheriff's Office
Mathew Nolan, County Traffic Engineer, Roads Services Division
John Resha, King County Council Staff

² The King County Office of Strategic Planning and Performance Measurement pointed out that the 2009 King County Community Survey found that King County residents were relatively satisfied with traffic enforcement services.

³ Redelmeir, Tibshurani, and Evans, *Traffic-law enforcement and risk of death from motor-vehicle crashes: case-crossover study*, The Lancet, June, 2003.