

MEMORANDUM



DATE: February 29, 2016
TO: House Appropriations Subcommittee on State Police
FROM: Kent Dell, Fiscal Analyst
RE: State Police Body-Worn Cameras

Summary

This memorandum provides a preliminary estimate of the likely costs of a body-worn camera program for the Michigan State Police (MSP) and is subject to revision as more information becomes available.

As of February 13, 2016, the MSP had 995 at-post troopers assigned across the state. The department expects to add an additional 100 enlisted personnel in FY 2015-16 and 85 in FY 2016-17. This analysis estimates costs for providing all MSP troopers assigned at-post with a body-worn camera and will assume that all additional personnel hired in the coming fiscal years will be assigned at-post with the base number of troopers in FY 2015-16 remaining the same.

Subject to the caveats listed below, Table I provides the estimated costs of implementing a body-worn camera program for MSP at-post troopers, using trooper strength as of February 13, 2016 as the number of personnel for the first year.

Table I
 (Costs in millions of dollars)

	<u>Cost Estimates for MSP</u>			<u>Total</u>
	<u>Cameras</u>	<u>New Data Storage</u>	<u>Accrued Data Storage</u>	
First Year	\$0.8 - \$1.2	\$1.9 - \$3.9	--	\$2.7 - \$5.1
Second Year	\$0.08 - \$0.1	\$1.9 - \$3.9	\$0.6 - \$1.3	\$2.6 - \$5.3
Third Year	\$0.07 - \$0.1	\$1.9 - \$3.9	\$1.3 - \$2.7	\$3.3 - \$6.7
Approx. 3-Year Cost	\$1.0 - \$1.4	\$5.7 - \$11.7	\$1.9 - \$4.0	\$8.6 - \$17.1

Note: Uses data from Table II for accrued data estimates; assumes new data is stored for one month then deleted, unless recording contains a qualifying event; and assumes data containing a qualifying event are maintained and accrued over time.

These estimates represent the low-end of the possible costs to the state, because they do not include additional equipment to upload and view the camera footage, camera training, maintenance and replacement, and costs associated with hiring additional support personnel.

Equipment

A report by the Police Executive Research Forum (PERF) estimates that, of those who have adopted body-worn cameras, police agencies spend between \$800 and \$1,200 for each camera.¹ The MSP would

¹ Accessed at: <http://www.justice.gov/iso/opa/resources/472014912134715246869.pdf> on 05 November 2015

pay between \$796,000 and \$1.2 million to outfit every at-post trooper – as of February 13, 2016 – with a body-worn camera. This does not include the costs of additional equipment used to upload or review recordings or the costs of camera maintenance, training, and replacement. These costs are variable and depend upon the durability of the cameras purchased and the vendor chosen to provide these services.

The largest proportion of the costs would result from maintaining and retaining the data generated by body-worn cameras. The amount of video data being stored at any given time would depend upon several factors, most significant of which is the amount of recordings containing qualifying events – interactions with the public that necessitate retaining the recordings for legal or investigative purposes – and statutory data retention requirements. Table II provides information on the average number of arrests per day, which would likely be considered a qualifying event, occurring in FY 2013 through FY 2015.

Table II

	<u>MSP Arrest Average (per day)</u>	<u>Retainable Data Accrual (arrests only; in TB per month)</u>
FY 2013	204	36.7 – 76.5
FY 2014	254	45.7 – 95.3
FY 2015	285	51.3 – 106.9
Per Year Average	248	44.6 – 93.0

Note: Arrest data provided by MSP; estimates assume each arrest made in a separate eight-hour shift

Data Generation and Storage

According to estimates provided by the MSP, based upon preliminary statistics collected through its body-worn camera pilot project and assumptions of a “worst average case” scenario, three to five hours of recordings would be taken during an eight-hour shift creating between 2.0 and 2.5 gigabytes (GB) of data per hour of recording (between 6.0 GB and 12.5 GB per shift), using standard definition video. All subsequent analyses will use this high-end estimate to ascertain potential data storage costs. A trooper typically works 260 eight-hour shifts during a year, creating between 1.6 and 3.3 terabytes (TB, 1,000 GB = 1 TB) of data per trooper per year. As of February 13, 2016, the MSP employed 995 troopers assigned at-post. If each at-post trooper recorded video through body-worn cameras at a rate of three to five hours of footage per eight-hour shift, the annual data created by the recordings would range from 1.6 to 3.2 petabytes (PB, 1,000 TB = 1 PB) of data.

The Department of Technology, Management, and Budget (DTMB) provides data storage via state-owned servers at varying prices, dependent upon the amount of data uploaded for storage and the frequency the data is accessed for editing and downloading. These prices are inclusive of DTMB’s expenses to acquire and refresh physical infrastructure and employ personnel to maintain access to and security for archived data. The MSP and DTMB report an approximate price of \$1.20 per GB per month for data storage. Included in this estimate are the costs of ensuring the security of these data, due to their sensitivity. Additional costs would be incurred by MSP to obtain and maintain information technology applications and networks to upload, manage, and modify body-worn camera recordings.

Using the estimates above, the MSP would be paying to store between 129 TB and 270 TB of newly created data each month. Total monthly costs for data storage would depend upon statutory requirements for data retention. If all newly created data were stored for at least a month, the MSP would pay between \$155,220 and \$323,375 each month for the storage of new data alone at the DTMB rate. Using the data provided in Table II to estimate the average amount of footage containing qualifying events – using average daily arrests as a proxy variable for qualifying events – the MSP would pay between \$53,568 and \$111,600 per month to store only newly created recordings containing qualifying events, at the DTMB rate.

Additional Costs

Support Personnel: The MSP would also have to hire additional personnel to separate those recordings that could be disposed and those that would need to be maintained, and to process FOIA or other statutorily authorized recording requests. Videos would need to be edited to extract specific events from full-length recordings and redacted to protect the identities of other individuals captured within the recordings before the videos could be released to the public. MSP estimates that processing a FOIA request for a drunk driving complaint with video from a car-mounted dash-cam and two officers with body-worn cameras would take roughly 6 – 12 hours, mostly for redacting for the arrest. Technology does exist to allow officers to tag portions of video. However, the recordings will still likely need to be reviewed manually before disposal or disclosure.

Equipment used to upload and review camera footage: These costs are variable and depend upon the amount of equipment being purchased, the desired software capabilities, and the vendor the equipment is purchased from.

