

Memorandum

City of Lawrence

Police Department

**To: David Corliss, City Manager
Tarik Khatib, Chief of Police
Captain Stephen Zarnowiec**

From: Sergeant Adam Heffley

Date: February 21, 2012

Re: In-Car Video Systems

Background

In-Car Video has become an integral part of investigations since it's installation in 2008. Countless videos have supplied crucial evidence in cases ranging from simple traffic infractions up to a vehicular homicide. Additionally, the video produced has refuted numerous complaints which would have certainly cost the city in litigation and reputation regardless of the outcomes. Evidentiary video is no longer a luxury but an expectation of juries and the public when Law Enforcement is involved.

In October of 2008, the department purchased thirty-eight Digital Patroller 2 In-Car Video systems from Integrian Inc. Along with each vehicle's equipment we purchased the software and a video server to process and store the captured video evidence. During the processing of our order Integrian Inc. was purchased by a business group and the company became Digital Safety Technologies (DST). DST honored the agreement we had set in place and with the order of the systems we also received an extended three year warranty on the equipment.

Since installation we have been able to integrate the use of the DP2 systems with the patrol vehicles and into the dissemination databases within the department. We have not been without issues but have been able to manage all of them with equipment replacement under warrantee and a little ingenuity. The in-car systems do have issues with booting up during extreme weather conditions and errant files cause downloading problems from time to time. To my knowledge, I have only been able to identify one video file that was recorded and "lost" by the system. To provide a frame of reference there are currently over 217,000 video files on the server equating 11.8 terabytes of information. Additionally, the current server storage is approximately 85% percent full. The storage capacity can be increased through policy change and "clean-up" which will free up some space. However, the server will need to be reconfigured, replaced or added to in the next year.

In the event a Digital Video Recorder from a vehicle fails and must be sent in for maintenance, it is not uncommon for that recording system to be "out of service" for two to three weeks. Up to December of 2011, all of these repairs and replacements were done under warranty and had only cost the department fees related to shipping and loss

of productivity due to down time. A number of the equipment failures can be attributed to extreme weather conditions, such as temperatures under twenty and above one hundred. This is a common issue with computer systems that use traditional hard drives. In researching current trends in Digital In-Car Video I have found the direction of all companies is toward the use of sealed systems with Compact Flash memory or Solid State Hard Drives. DST has recently released their engineering solution in the form of the Digital Patroller 3 product. The DP3 system is sealed, records at a higher resolution, and stores video on a Solid State Hard Drive. The DP3 system appears similar to many of the systems on the market that are now considered the standard for In-Car Video Systems.

In December 2011 the extended warranty for all of the DP2 equipment expired. The quoted cost of the continued warranty repair of the equipment from October 2011 to October 2012 was \$23,160. The cost of warranty for 2013, if it will even be offered, would be considerably higher. These systems are currently over four years old and have begun to experience malfunctions and failures.

Analysis

I have identified three possible outcomes to the In Car Video issue. The first option is to look at purchasing an additional year warranty or paying for repairs as needed. When assessing if it is cost effective to purchase the additional year warranty it is important to determine our use of the previous warranty. During the previous year I sent forty-seven different items to DST for repair or replacement. Each was repaired under warranty and our cost was shipping only. This number of items sent back breaks down into twenty-seven Digital Video Recorders, seven Digital Storage Modules, twelve mic packs, and one camera. On two separate occasions, we experienced a failure of five units at the same time. These instances occurred during extremely cold spells and caused a working camera shortage for more than a week each time. Using the \$23,160 figure for one year, each repair cost averages out to \$492.77 per item sent. This quoted warranty extension figure does not include telephone technical support which I estimate we used approximately 12 to 15 times at less than 15 minutes each call during the previous year.

DST has quoted me an "a la carte" price list for repairs at \$200 for repair of a Digital Video Recorder, \$300 for repair of a Digital Storage Module or "Blade" and \$150 per hour of telephone support. They have not provided a cost to repair the cameras or mic packs but those items are typically replaced with a refurbished device rather than repaired and the number of available replacement devices is dwindling. Using the provided price list on what we had repaired last year, we would have paid \$5,400 for DVR repair, \$2100 for "Blade" repair, a new purchase price of approximately \$6,500 for mic packs and a camera and around \$2,100 for telephone technical support for a total of \$15,600.

At face value it appears a better choice to allow the warranty to expire and pay the repair costs on a case by case basis. However, it is important to acknowledge that these systems will be, at a basic level, four year old computers and hard drives. An Ohio University research project titled "Life-span, Obsolescence, and Depreciation in the Management of Educational Technology" determined the average lifespan of a

Digital Video Camera was three years and a laptop computer was four. Our In Car Video systems are essentially, laptop computers and digital cameras. However, these computers and cameras are exposed to extreme temperatures, dirt, dust, debris, vibration and are run on less than ideal power regulation from a vehicle's alternator. They will fail and need repair more in the next year than the previous one. Additional system down time also creates loss of productivity for Officers while they attempt to repair their unit or locate an operational one.

The process of repairing as systems fail will only work for a limited amount of time. Digital Safety Technologies has made it very clear that the company's future is with the DP3 system and they will not allocate additional engineering resources to the DP2 system. This means it is entirely probable that in the future DST will cease to support the DP2 system at all.

The second option is to continue operating the DP2 systems until the number of failed systems prevents patrol from deploying each and every Officer with an operating system. When this "tipping point" is reached, it will necessitate the removal of all remaining systems from Patrol vehicles and then continue working without the collection of this video or audio evidence. This option presents the possibility of several major issues. Any attempt to deploy a handful or even a large amount of units unless all deployed vehicles could be equipped with working systems would generate numerous legal challenges. I have already heard anecdotal talk of Officers being questioned when the video system was not in use or operational in several cases. Additionally, in recent years Officers have been heavily scrutinized in recently tried cases that came before the systems were put in place. In this scenario the city would also most likely incur additional cost associated to the investigation, refutation or settlement involving allegations of misconduct that has been reduced since the inception of the In Car Video program.

The third option is to identify, test, and purchase an In Car Video solution that will meet the needs of the department, various prosecutor's offices, and City of Lawrence as a whole. This option must also include the addition of a line item in the budget to facilitate the ongoing maintenance and replacement of these systems as they fail and the cost associated with the dissemination of this information. After the initial purchase of the new system, a yearly line item budget of \$75,000.00 would allow for the purchase of eight to ten new systems each year, the required peripherals, and the work required on the back end server. In this scenario of a phased replacement plan we can avoid a future large expenditure in this area.

Discussion

Purchase of the original Digital In-Car Video system was done using the Reserve Equipment Fund. Previously, there were many issues with In-Car Video such as storage of processing of VHS tapes and the large size and inconvenience of the original systems. When the digital systems appeared on the market it was something very few agencies were doing but appeared promising. It was prudent to think of the purchase as a onetime event to test the digital video waters. Since that time, digital In-Car Video has become the standard. Use of this technology has become mission critical and

should be thought of as a budgeted expense in the future rather than a one time purchase.

If the department wants to maintain the ability to reliably capture, store and utilize In-Car video we need to consider what technology will be serviceable and cost effective on a revolving three to five year basis. In-Car video has become an essential part of policing in America. The technology will continue to evolve and improve, but will never cease to exist. The number of civilian created videos available to the public increases every year. However, typically these videos do not capture the entire incident, usually lack audio and are frequently edited prior to public consumption. It is imperative that we are able to present better evidence that illustrates a complete picture of our involvement in these incidents. With this in mind, it has become crucial that the department and city recognize the need to budget for the maintenance and replacement of this equipment each year.

Funding Sources

Funding for the initial purchase of the current systems was procured from the Equipment Reserve Fund. While I believe the Equipment Reserve Fund was appropriate for the initial purchase, the continued funding for these systems should be treated similar to vehicle maintenance and replacement.

Recommendation

This technology has evolved into an indispensable part of the department's evidence collection system. To continue the repair and replacement of this equipment it is imperative that a budgetary line item is created for In-Car Video Systems in 2013. Rather than revisit this issue every three to five years and replace the entire system when it ceases to operate or becomes obsolete at a cost of \$250,000 to \$300,000 each time. We should continually perform maintenance and replace systems as we go for a more manageable line item of \$75,000 per budget year from 2013 forward.

It is my recommendation that the department begin the process of identifying and testing a new system and budget for the purchase of this system as soon as possible. I propose the city then issue a line item with a \$75,000.00 budget to continually maintain and replace this evidence collection technology. The phased replacement of the older units would prevent another large expenditure when our next warranty expiration occurs and maintain the high level of video evidence the department produces on a daily basis.

Thank you for your consideration in this matter.

Respectfully submitted,

Sergeant Adam K. Heffley
Patrol Division, Shift One