



Managing Digital Evidence from Body-Worn Cameras: Case Studies in Seven Sites

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Table of Contents

Chapter 1	Introduction Craig D. Uchida and John Markovic	Page 1
Chapter 2	Managing Digital Evidence in A Large Agency: The LAPD Experience Craig D. Uchida, with Kyle Anderson	Page 5
Chapter 3	Managing Digital Evidence in A Large Agency: The Phoenix Experience Charles M. Katz	Page 19
Chapter 4	Managing Digital Evidence in a Mid-Sized Agency: Lessons from Glendale, AZ Michael D. White and Quin Patterson	Page 32
Chapter 5	Managing Digital Evidence in a Mid-Sized Agency: The Rochester Experience John McCluskey	Page 40
Chapter 6	Managing Digital Evidence: The South Florida Collaboration Shellie E. Solomon and Christine Connor, with Jennifer Schmitz	Page 52
Chapter 7	Managing Digital Evidence in a Sheriff's Office: The Harris County Experience Center for Justice Research and Innovation, CNA	Page 68
Chapter 8	Findings, Conclusions, and Recommendations Craig D. Uchida	Page 76
Appendix 1	Interview Protocols	Page 82
Appendix 2	LAPD Special Orders	Page 88
Appendix 3	Fort Lauderdale BWC Policy, Digital Evidence Policy, and List of Retention Categories	Page 104
	About the Organizations and Authors	Page 127

Chapter 1

Introduction

By

Craig D. Uchida and John Markovic

Introduction

Digital Evidence Management (DEM) encompasses a wide variety of devices, technologies, tools, and data, particularly as they relate to the criminal justice (Goodison, Davis, and Jackson 2015). This report is about body-worn cameras (BWCs) and the digital evidence (footage) created by the technology. The main purpose of the study is to understand and explain the key challenges faced by law enforcement agencies and prosecutor offices as they use BWCs routinely.

Taking a case study approach, we examine the process for managing BWC footage in seven agencies: Two large police departments (Phoenix and Los Angeles); two mid-size police agencies (Glendale, AZ and Rochester, NY); a Sheriff's Office (Harris County, TX), and a collaborative effort in South Florida (Broward County State Attorney's Office and Fort Lauderdale Police Department).

Background

Since 2014, the deployment of body-worn cameras (BWCs) by policing agencies has increased rapidly (White and Malm 2020). The swift pace of the adoption of the technology was driven in large part by controversial police killings of Black men and youth; support by national police leadership, civil rights groups, and police unions; funding by the U.S. Department of Justice; and state and local legislation that encouraged or mandated the use of BWCs by policing agencies.

During the period of 2014-2019, the Bureau of Justice Assistance (BJA) and its BWC training and technical assistance providers (CNA, Arizona State University/ASU, and Justice & Security Strategies, Inc./JSS) saw an increase in the number of videos, amount of storage space needed, and demands on the police for public release of footage. Further, the importance of BWC footage in the criminal justice system increased, especially with the typical workload of cases. As officers reviewed footage in conjunction with report writing, the footage needed to be packaged and transmitted to prosecutor's offices; prosecutors reviewed BWC footage among other evidence; and then prepared the evidence for court presentations.

This process burgeoned into questions about the challenges faced by police and prosecutors – what are they facing in terms of storage requirements, retention periods, and public release? How are they managing the evidence that they acquire? What are the effects on staffing, workloads, and reviews of footage? How do processing practices vary across the landscape of policing and prosecution?

Importantly, we ask: How can we assist law enforcement agencies, prosecutors, and the courts in dealing with this ‘tsunami’ of information and evidence?

To answer these questions, BJA and the TTA providers chose seven agencies for intensive study. The agencies were selected, in part, based on geographic diversity, size of the agency, willingness to participate and share information, and proximity to members of the research team.

Context and Replication Potential

As a scoping study, the authors believe that this purposive sampling strategy makes sense. The authors hope that others will examine the deployment of BWCs and related audio/visual technology in other locations using similar approaches. Additional assessments would contribute to a fuller and better understanding of the use and workload impacts of digital evidence across the highly variegated pool of law enforcement agencies and prosecutors’ offices across the United States.

Digital evidence from BWC and other audio\visual tools can collectively be characterized as “big data,” which as the name implies, raises concerns about its enormous volume and complexity. As some have noted, big data is about more than volume. The “Five V’s of Big Data” refer to the fuller context and interdependencies, including *volume* (the sheer amount of data from myriad sources; *variety* (digital data in different formats and structure); *velocity* (the speed at which digital data amasses); *veracity* (the degree to which data can be trusted); and *value* (the utility of digital data for criminal justice operations and as evidence). (Adapted from Yen and Kaynak 2015). As digital evidence becomes more commonplace in criminal justice agencies through tools like BWCs and the emerging IoT (Internet of Things), descriptive studies of the big data effects of digital evidence will become vital and can set a foundation for greater levels of standardization and integration of digital data as evidence.

Organization of the Report

This report is divided into six separate, site-based chapters and one final chapter that provides conclusions, findings, and recommendations. Each site-based chapter includes a description of the jurisdiction, an overview of their use of BWCs, a brief explanation of how footage is used within the agency, and how footage is transmitted to prosecutor offices. Each jurisdiction provided statistics and data about the outputs of their BWCs, including numbers of cameras, videos, and footage shared with prosecutor offices.

For each site, researchers conducted interviews via telephone or the Zoom conference platform. Uniform interview questions were developed and used by each research team (Appendix 1).

Exhibit 1.1 displays the sites and the number of videos created and the amount of storage space used in 2019. It shows the variation in the numbers of officers with BWCs and the range in videos and storage. In that year, the Glendale Police Department, created about 20,000 videos. In Los Angeles, the department had over four million videos. For all of the agencies, the amount of storage used ranged from five terabytes to 1.3 petabytes in 2019. In Fort Lauderdale, the amount of storage is lower than the other agencies because of its retention policy. The Department

deletes certain categories of footage after 90 days, one year, three years, four years, and so on. (See Chapter 6 for more details.)

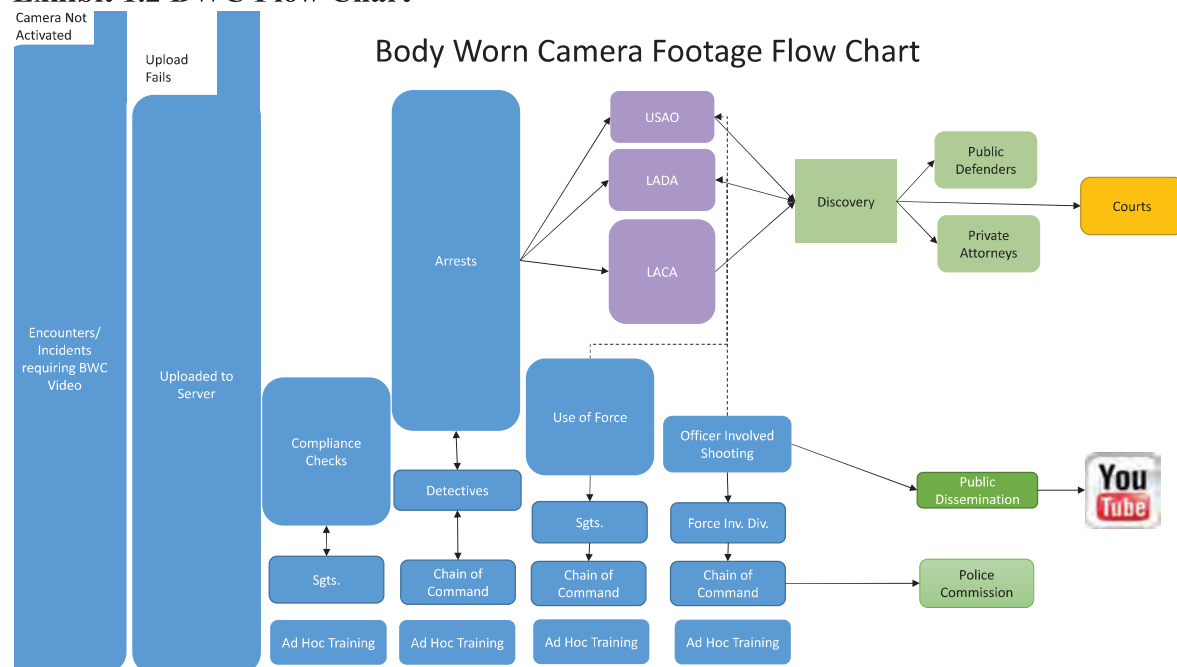
Exhibit 1.1 DEM Participants and BWC information, 2019

	Officers w/ BWCs	BWC Videos in 2019	Storage Used
Broward County State Attorney's Office	N/A	165K	87.37 TBs
Fort Lauderdale Police Department	535	271K	5 TBs
Glendale Police Department	300	20K	130 TBs
Harris County Sheriff's Office	1,590	342K	1.1 PBs
Los Angeles Police Department	7,000	4M	1.3 PBs
Phoenix Police Department	2,170	800K	300TBs
Rochester Police Department	502	300K	400 TBs

Because the report focuses on the flow of BWC footage within a law enforcement agency and its criminal justice system, we created a chart that serves as a baseline for that flow (Exhibit 1.2). In most cases, law enforcement agencies follow the flow from activating the camera, to compliance reviews or audits, to arrests, to providing prosecutors the footage via the cloud or DVDs/CDs. Within an agency, footage is likely to be reviewed after critical incidents -- uses of force, officer-involved shootings, and most recently, the activities of officers and people during protests and demonstrations.

Each chapter describes how agencies selected their BWCs, the policies that guide their use, the flow of evidence (internally and externally), and unique characteristics of implementation within the site(s). The last chapter summarizes the findings, conclusions, and recommendations.

Exhibit 1.2 BWC Flow Chart



References

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Chapter 2

Managing Digital Evidence in A Large Agency: The LAPD Experience

By

Craig D. Uchida

With the assistance of Kyle Anderson

Introduction

This chapter describes the use of digital evidence from body-worn camera footage within the Los Angeles Police Department (LAPD) and the Los Angeles District Attorney's Office (LADA). Using the flowchart described in Chapter 1 we discuss the way in which the LAPD collects footage and how command staff, supervisors, detectives, and officers review video for compliance purposes, arrests, and critical events. We then describe how footage is used within the DA's Office for charging offenders.

Two unique aspects of BWC footage are highlighted here – the way in which the LAPD ensures compliance by officers and the way the Department releases footage of officer-involved shootings and other critical events to the public.

Through interviews with key personnel and the use of statistics, numbers, and metadata obtained from the LAPD and LADA, we describe the flow of footage from the time that a camera is activated to the use of footage in court.

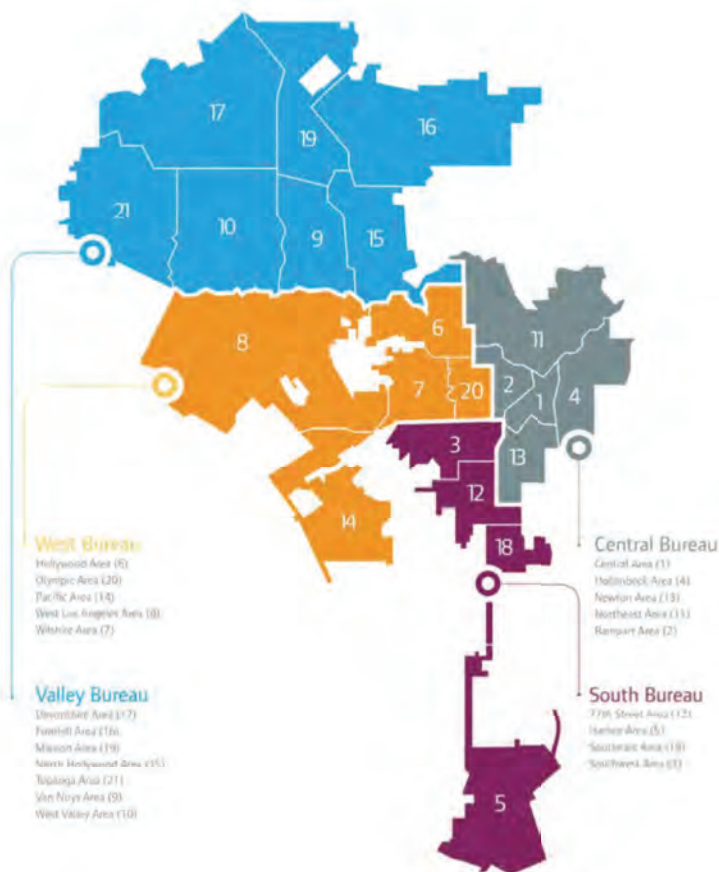
Background

Los Angeles, CA, is a diverse city of approximately 3.89 million people with dozens of distinct communities. Census figures from 2019 indicate that 48.6% of the population is Latino, 28.5% White, 8.9% Black, and 11.6% Asian. The city covers 469 square miles.

The Los Angeles Police Department (LAPD) is the third largest police force in the United States with about 9,500 sworn and 2,900 civilian employees. Chief Michel R. Moore oversees the department. The Los Angeles Board of Police Commissioners, made up of five residents of the city, serves as the “head of the Los Angeles Police Department, functioning like a corporate board of directors, setting policies for the department and overseeing its operations.”¹ Unlike a corporate board, however, the Police Commission is unpaid and is appointed by the Mayor to serve two-year terms.

The Department is divided into four Bureaus covering the San Fernando Valley (Valley Bureau), West Los Angeles (West Bureau), Downtown and East Los Angeles (Central Bureau) and South Los Angeles (South Bureau). The Bureaus are further subdivided into 21 patrol Divisions or

¹ http://www.lapdonline.org/police_commission



Areas. Each patrol division covers multiple neighborhoods. Patrol divisions are divided into Basic Car Areas that are patrolled by a single patrol unit staffed by two uniformed officers. These officers respond to calls for service, make proactive stops, and engage in problem-solving policing. Four Traffic Divisions (one per Bureau) assist with traffic enforcement and collisions. The Metropolitan Division and SWAT unit are used for special law enforcement duties across the city. Lastly, property crime and violence against persons are investigated and managed at the Division-level, except for homicides, major crimes, and white-collar crimes. These are investigated at the Bureau and Department levels.

Body-Worn Camera Adoption

In 2013 and 2014, Mr. Steve Soboroff, then-President of the Los Angeles Board of Police Commissioners, led an effort to raise approximately \$1.5 million to jump-start LAPD's purchase and deployment of body-worn cameras (BWCs). Before buying the cameras, the LAPD vetted vendors and equipment and developed appropriate policies and procedure for their use. LAPD staff conducted research on a number of BWCs on the market and looked at cameras that had a long battery life (10-12 hours), were easy to use, and addressed efficient storage of video footage. Costs of the cameras and storage were examined closely. Two cameras were selected for a field test, and a small sample of officers tested them. Ultimately, one camera (Axon) was selected and 800 were purchased through the Los Angeles Police Foundation. Eventually, the LAPD received funding from the Bureau of Justice Assistance (BJA) and through the city budget to obtain a total of 7,300 body-worn cameras.

In 2015 the LAPD began its initial deployment of BWCs. Five Divisions began implementation from September to December 2015. In 2016 installation was stalled because of budgetary and other issues, but by the end of 2017 all 27 patrol and traffic divisions were fully outfitted with BWCs. Additionally, special units (Metropolitan Division, SWAT, and others) were provided cameras in 2018. Lastly, when LAPD was awarded the contract to provide services to the Metro Transit Authority, they obtained a grant from BJA to outfit those officers with BWCs.²

² Having implemented a foundational camera program in 2014, LAPD then expanded its BWC program to approximately 7,300 BWCs, including 800 that were purchased through the Bureau of Justice

Methods

For this chapter, we interviewed nine current and former members of the LAPD and two members of the LADA Office. Interviews were primarily conducted via Zoom or in-person before the COVID-19 shutdown.

For the statistics and numbers relating to crime and arrests, JSS was provided access to the databases that hold the information. For statistics and numbers relating to BWC videos, we obtained information directly from the LAPD and the LADA's Office.

Implementation of BWCs

The Tactical Technology Section (TTS) within the Information Technology Bureau (ITB) oversaw the installation, training, and implementation of BWCs across the Department. The TTS was comprised of three sergeants and five officers.³

The officer-in-charge of TTS explained the process of choosing a BWC vendor for implementation. He mentioned key considerations, including operational requirements, on premise versus cloud infrastructure, personnel, storage, and fiscal aspects. Battery life was a major consideration as officers need at least 12 hours of battery life due to the length of their shifts.

In 2014 TTS staff conducted pilot tests at Central Division. At the time, only two products met the specific criteria described above - Axon and Viewu. At Central Division they selected a set of 60 officers who handled a high volume of calls, received a number of complaints, and who had many use of force incidents.⁴ Each type of camera was tested for 90 days while on-duty in the field and through tests run with the officers as they engaged in physical activity among themselves, including wrestling, running, and engaging in hands-on combat activity (this was conducted at the Police Academy). At the conclusion of each pilot, TTS surveyed the officers to evaluate their perception of the BWCs.

Once they completed the pilots, they selected their vendor based on the key considerations, including officer feedback, battery life, ease of use, storage, and costs. TTS then developed a strategic plan to deploy the BWCs in five divisions. Their deployment strategy consisted of choosing a variety of stations based in part on the age of the building(s). For example, TTS wanted one newly renovated station, one older station, and one station that was in-between. The other two divisions were selected after additional department deliberations. The five selected

Assistance BWC grant funding awarded in 2015 and expansion of 355 additional cameras in 2019, which were used in part to expand the BWC program to transit office.

³ Additional officers were added to the unit on a temporary basis to assist with installation and training in 2016 and 2017,

⁴ These officers were selected because they worked in the Skid Row section of Central where they encounter numerous homeless individuals daily and have a higher proportion of citizen events than other areas. These officers also receive more complaints from homeless individuals and tend to have more encounters that involve the use of force.

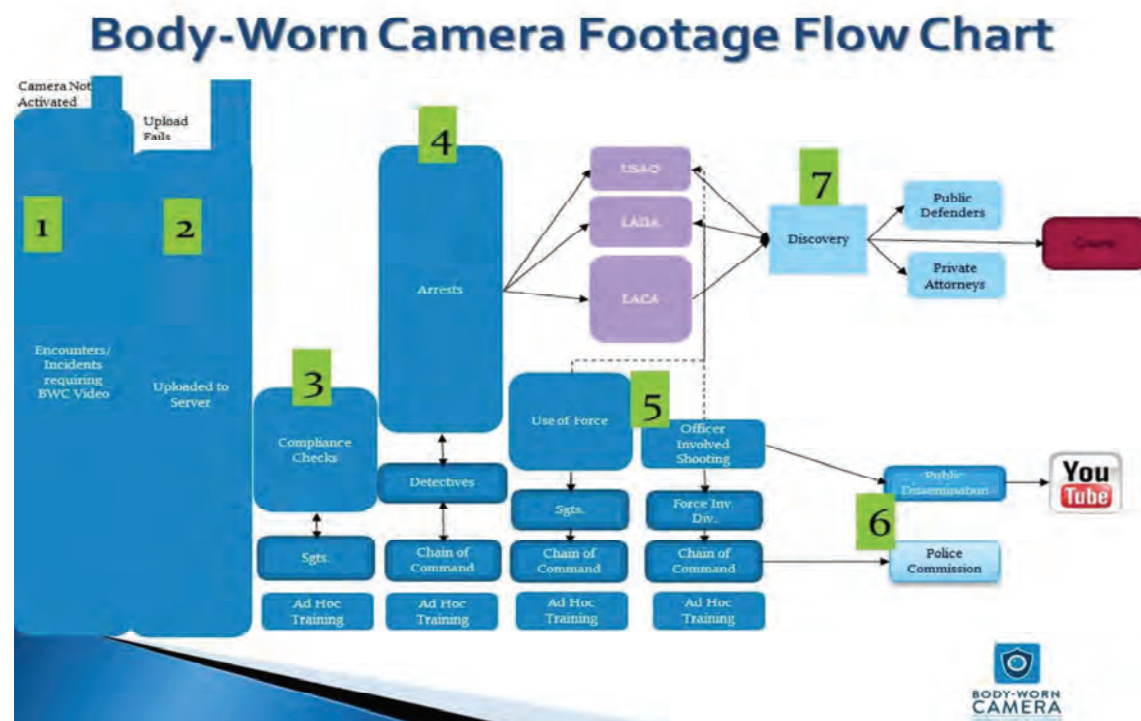
divisions were Central (older), Central Traffic (in-between), Hollenbeck (newly renovated), Mission (newly renovated) and Newton (older). Because implementation and infrastructure upgrades⁵ would take longer in the older divisions, they rolled out construction and deployment times by month beginning with the newest division (Mission). In 2016 and 2017 cameras were subsequently installed in the rest of the patrol and traffic divisions.

In addition to the installation of the hardware, officers at each Division were trained and received cameras at roll calls. TTS conducted the training (about 2-3 hours) and deployed the cameras to each officer.

Prior to installation, the LAPD engaged in town hall meetings with the public, negotiated with the police union (Police Protective League), and created the special order for using the cameras (see Special Order 12 in Appendix 2).

The Flow of BWC Footage

Exhibit 2 shows the possible flow of footage from the beginning of an event to an arrest to the criminal justice system. We will describe what happens at each numbered step based on interviews and knowledge of the process. Where data are available, we provide information about the number of videos recorded and the volume of video in terms of recording hours and/or digital file size.



⁵ Installation requirements included finding space for 200-250 individual docking stations, having appropriate electrical and Internet wiring, and eventually WIFI connectivity. The older buildings (Central and Newton) were more challenging to install the infrastructure than the newer ones (Hollenbeck and Mission).

Steps 1 and 2. The first steps of the process occur when a police officer activates her device “prior to initiating any investigative or enforcement activity involving a member of the public” (See Appendix 2, Special Order No. 12, 2015). Officers record the entire contact, and they must identify the event type and categorize the video after the event. At the end of each shift officers upload the recordings to the cloud (Step 2) by docking the device at the station. (Note: LAPD uses Axon equipment and stores video in evidence.com.)

In 2019, LAPD officers recorded and uploaded over 4,000,000 videos requiring 1.3 petabytes of storage space.

Metadata

To illustrate what is uploaded onto the Axon platform we obtained metadata for a single day (January 25th, 2021). The dataset contained 12,599 rows of information corresponding to individual files uploaded to the website along with 54 columns of variables. The variables include file title, date/time of upload, evidence type, file format, file size, duration (for video/audio files), ownership records, external identifiers, and file modification trackers.

Exhibit 2.3 LAPD Metadata by type and serial number			
Content Type	No Serial Number	Serial Number Assigned	Total
mp4	92	5,948	6,040
jpeg	1,164	-	1,164
pdf	95	-	95
x-tasr-dsclog	-	53	53
png	27	-	27
other	179	-	179
Total	1,557	6,001	7,558
<i>Source: LAPD Axon platform for January 25, 2021</i>			

Exhibit 2.3 shows the ‘content type’ of the metadata for one day. We analyzed the data based on serial number of the officer and this exhibit shows that 5,948 serial numbers were assigned to mp4 or BWC videos. Other types of files were also uploaded that day, including jpeg and png files (photos), taser firings (tests or actuals), documents (pdf), and

others.

Exhibit 2.4 shows the evidence type, size of the files, and the length of the files in hours. For BWC footage, 5,948 files require 2,318 GB of storage space and equate to over 20 hours. Other types of evidence are specified as well, including documents, images, and other types of video recordings.

The metadata provide a glimpse of the types of information available on the Axon platform used by LAPD. More analyses are needed of the metadata to determine what would be useful for officers, command staff, and future research.

Exhibit 2.4 LAPD Metadata, by evidence type and size

Evidence Type	n	Size of Files in Gigabytes	Duration of Files in Hours
Audio	36.00	1.44	20.28
BWC	5,948.00	2,317.95	1,335.51
Document	3.00	0.00	-
Firing Log	53.00	0.00	-
Image	1,192.00	3.09	-
Other	126.00	1.92	-
Video	200.00	35.24	30.31
Total	7,558.00	2,359.64	1,386.10

Source: LAPD Axon platform for January 25, 2021

The LAPD routinely uses 20 categories to identify video. Exhibit 2.5 shows the categories, the number of BWC files, and the amount of storage space needed over the 30-day period of June 1-30, 2021. To provide context for these numbers, during this time frame LAPD officers wrote

incident reports for 2,537 Part 1 violent crimes and 7,127 Part 1 property crimes, and 7,020 Part 2 crimes, totaling 16,694 crime incidents. In addition, from June 1-30, 2021 they made 2,835 felony arrests and 2,305 misdemeanor arrests (N=5,140). Exhibit 2.5 shows that over 20,000 videos exist for felony and misdemeanor arrests.

Exhibit 2.5 BWC Categories and Size of Files, June 1-30, 2021

Categories	Number of BWC Files	BWC Files (in GB)	% of files
a. Equip Test Video	36,341	1,962	1.51
b. Felony arrests	15,014	6,688	5.15
c. Misdemeanor Arrests	5,077	3,021	2.33
d. Traffic Stops	31,175	10,677	8.22
e. Pedestrian Stops	4,577	1,893	1.46
f. Reports	40,436	13,973	10.76
g. Citizen Flag Down	2,097	705	0.54
h. Stolen Veh Recovered	938	334	0.26
i. Use of Force	1,573	627	0.48
j. Traffic Collision Inv	15,515	3,420	2.63
k. Warrant	1,118	731	0.56
l. Pursuit	908	320	0.25
m. Vehicle Search	929	485	0.37
n. Traffic Collision Officer	730	55	0.04
o. Accident-Other	502	76	0.06
p. Outside Agency	140	61	0.05
q. Officer Completed Call	137,743	54,246	33.85
Uncategorized	111,925	30,503	27.50
Pending Review	122	29	0.02
Restricted	93	31	0.02
Totals	406,953	129,837	96.06

Source: LAPD, extracted from Axon platform, August 2021

Currently, one of the drawbacks of the BWC data system is that it is not linked to the records management system or other data systems in the department. For example, arrests caught on video are not linked to the records management system, nor are the use of force videos linked directly to the database used by the Force Investigations Division or the Critical Incident Report Division.

Step 3. Once the video is uploaded and stored, about 3-5% of videos linked to an incident report are reviewed for compliance with LAPD policies each month. Since 2017, the Video Compliance Unit at each of the four Bureaus officially reviews body-worn camera and digital in-car video footage (DICV). Each Video Compliance Unit consists of four to seven

persons (a combination of civilians and sworn who are “Police Performance Auditors”). The

Units use Special Order 45 and Special Order 12 as the basis for compliance, as these orders enumerate the policies for in-car video and body-worn camera video, respectively.

The Police Performance Auditor reviews officers' involvement in encounters where a written Incident Report or IR is available. Every four weeks the auditor reviews footage of officers in one division. Incidents are selected randomly for review.

Compliance Example: *Hollywood Division generated a total of 1,964 incident reports during the third week of Deployment Period 12 (November/December 2019). Based on the number of incidents and using a formula generated automatically by the LAPD's Office of Operations, it was determined that 92 randomly selected incidents should be reviewed (about 4.6% of the total). (These incident reports are randomly selected using randomizer.org.) The list of 92 incidents is the basis for the compliance review. Each incident may involve more than one video camera. Because LAPD has two-officer cars, it is likely that there will be at least two BWCs that captured the incident. If more than one patrol car arrived on-scene, then those cameras should also be reviewed. The Police Performance Auditor has four weeks to review all the body-worn camera videos related to the 92 incidents. The review is based on the LAPD policy for BWCs. In particular, the compliance unit looks for: Did the officer use the equipment as directed by the Department? Did the officer 'test' the camera? Did the officer turn it on/off at the appropriate time? Did the officer tag or categorize the footage? Was the correct incident number applied to the footage?*

To keep track of all the incidents, the compliance unit has an excel spreadsheet that has 8-9 columns that include the incident number, date, officer's serial number, the length of time of the incident, comments, failure (Y/N), and action taken. Information is entered for each incident.

Upon review of the footage, the compliance unit determines whether there was an 'anomaly' in terms of following policy. That is, if the officer did not do one of the abovementioned things,

then the compliance unit will mark it as a 'failure'. If the footage is missing, then there is clearly a problem. The supervisor of the officer is notified of the failure and is instructed to talk with the officer about the problem. There is no discipline or punishment attached to the failure. Usually, officers are told about the problem and told to re-look at the training video that is on the LAPD's local area network. According to the auditor we interviewed, he thinks that 80-90% of the incidents meet the policy requirements.

Step 4. In 2019, LAPD reported 123,964 violent and property crimes across the city. Officers made 79,685 arrests. Of these arrests, 34,179 were felonies and 45,506 were misdemeanors. As indicated above about 20,000 BWC videos are recorded each month for misdemeanors and felonies, but the LAPD cannot determine whether all of the arrests were recorded. The problem is attributable to the lack of a link between the

During an encounter the BWC must be activated, and the full incident should be recorded. If an incident report (IR) or an arrest is made the officer is required to review the footage to document

the incident accurately and completely. During our interviews with a watch commander⁶ and detective, they said that they review footage for different reasons based on their respective responsibilities.

Detective involvement. Detectives review footage to assist them with investigations and for filing charges with the LADA.

When a crime occurs, patrol officers write up IRs that are then passed on to detectives at the area station. The IR includes, among other things, the type of crime and details about the crime based on statements from the victim. The reports have a heading in the narrative section that provides the BWC ID number. Detectives can retrieve the footage using the ID number.

During our interview, a detective said that he reviews BWC footage to get “exact statements” from the victim and to hear the tone, accent, and words used by the victim. This “kind of detail cannot be captured precisely within the reports.” Listening to the audio portion of the footage often “goes to the heart of the issue.” For example, in a robbery, there is “a need to establish fear-for-life from the victim.” Or in the case of a Field Interview (FI) card where a person admits gang affiliation, the detective likes to know “exactly what was said” to establish gang membership.

The footage also serves as a record that can be used later – for recollection of the event by the investigating officer and to confirm the description of the original report.

He also mentioned that detectives like to review video to make sure they know answers to questions before they ask. They use it to “see the lay of the land” in terms of crime scenes. Even if a detective is going to go to a scene later, BWC gives information up front about the lay of land at the time of the incident and what the scene looked like. This might include descriptions of victims, suspects, witnesses, and lighting. For example, officers are usually “pretty general” with information about tattoos, but a more detailed description seen in the footage provides a precise description.

In a vandalism/graffiti case, the detective said that “we may not have time to conduct an immediate follow up, but thanks to BWC, we are able to see the condition of property at time of officer response.” Another example was a landlord dispute where “the landlord claimed that a tenant was knocking down stuff and breaking it.” The responding officer saw the property damage and recorded the scene. “We were able to define the incident as a civil matter rather than a criminal one based on the BWC evidence, saving us time.”

Supervisory review. For an arrest, the supervisor should ensure that the officer has indicated on the IR and the arrest form that footage is included as evidence.

Importantly, Field Supervisors also review footage for use of force incidents, pursuits, arrests, and complaints. Their primary task is to evaluate incidents for policy, tactics, and training to determine whether anything egregious needs to be addressed. These administrative responses may include specific officer training or discipline as well as Bureau-wide training/information

⁶ Typically, LAPD Watch Commanders hold the rank of sergeant or lieutenant and oversee Field Supervisors and officers during a patrol shift. Field Supervisors are sergeants who primarily work on the streets.

sessions. The footage review process for certain types of incidents varies. For example, Field Supervisors review pursuits before Watch Commanders, followed by Division Captains. Pursuits must be reviewed within 10 days while non-categorical use of force incidents⁷ and arrests must be reviewed immediately.

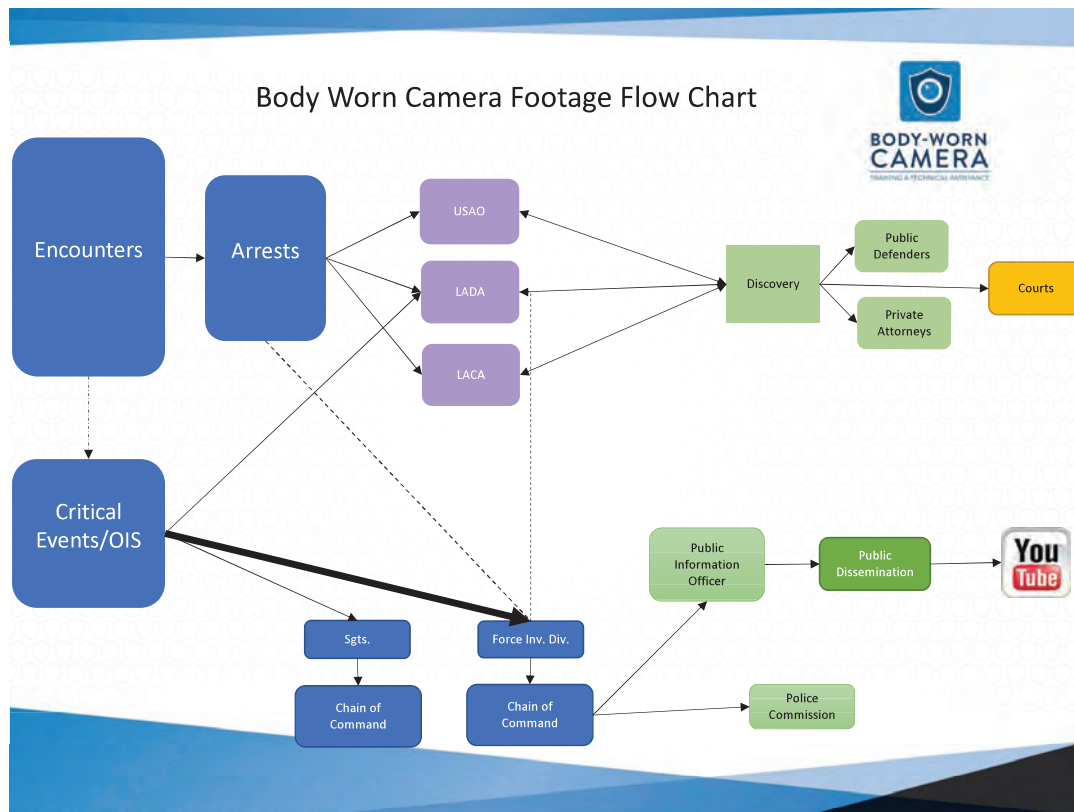
In the event of a vehicle pursuit, the Watch Commander is responsible for reviewing each involved officer's BWC and digital in-car video footage (DICV) if applicable. Since patrol officers ride two to a car, each set of patrol officers involved in an incident requires the review of three sets of footage: one BWC per officer and the DICV. For larger incidents with multi-unit response, this could generate 20-30 videos that need to be reviewed. This Watch Commander said that the footage is retrieved by logging into Evidence.com and searching for an officer based on different criteria. For example, the search can include the officer's serial number, name, or incident number. He indicated that the footage is easily accessible, especially because they have access to videos on the smartphone as well. Another benefit is that the footage is available for review within 30 minutes of docking the camera, so they can access video from the event rather quickly.

Step 5. In 2019, LAPD personnel were involved in 53 categorical uses of force and 2,320 non-categorical uses of force for a total of 2,373 uses of force. Of the categorical uses of force, 26 were officer-involved shootings with 21 'hits' and five non-hits.

LAPD has an extensive process for investigating OISs and critical events (see Beck and Uchida, 2019). The process includes an internal investigation by the Department's Force Investigation Division (FID), a specialized unit of officers and detectives, and the Use of Force Review Board. In addition, the LADA's Justice System Integrity Division (JSID) and the Police Commission, through the Inspector General's Office, conduct investigations. BWC footage is reviewed by all entities. We could not calculate the number videos or the amount of footage that is reviewed by FID or the other components, though our interviews and personal observations indicated that the amount is extensive. FID is responsible for the overall investigation, and conducts interviews, locates and collects evidence, manages crime scenes, and works with other Department and outside entities.

⁷ The LAPD classifies uses of force into two areas – 1) Non-Categorical Use of Force (NCUOF) and 2) Categorical Use of Force (CUOF). Non-categorical uses of force include an incident where an officer "uses a less-lethal control device or physical force to compel a person to comply with the officer's direction, overcome resistance of a person during an arrest or a detention, or defend any individual from an aggressive action by another person." The discharge of a Taser, chemical irritant device, and unintentional head strikes are classified as Level 1 Non-categorical Uses of Force.

A Categorical Use of Force (CUOF) includes incidents where an officer uses deadly force (e.g., discharge of a firearm), uses an upper body control hold (e.g., carotid hold) or an intentional head strike with an impact weapon, all in-custody deaths, an incident where an injury requires hospitalization, officer-involved animal shootings, and non-tactical unintentional discharges. [See, Beck, C. and Uchida, C.D., (2019). "The Accuracy of Fatal Officer-Involved Shooting Data: A Response to The Limitations of Government Databases for Analyzing Fatal Officer-Involved Shootings in the United States," *Criminal Justice Policy Review*, Vol. 30(3) 359–373.]



After an OIS or critical incident the officers involved are separated at the scene. Their supervisor takes possession of the involved officers' body-worn cameras, which are then transferred to FID for upload. The officers are then asked to provide a 'public safety statement' and ordered not to communicate with anyone regarding the incident. As soon as the upload is complete, FID reviews the video, and the involved officers are interviewed with their attorneys present. The officers can watch their own body-worn video in the presence of their attorneys prior to undergoing any questioning. Within 72 hours of the incident, FID presents a video compilation to LAPD administrators, including the Chief of Police. At this 72-hour briefing and following LAPD policy, the Public Information Division determines when the video will be released for public viewing.

Step 6. LAPD policy requires that video footage for critical events be released to the public within 45 days of the event. On April 19, 2018, the LAPD and the Board of Police Commissioners agreed to release footage from BWCs that capture officer-involved-shootings and critical incidents involving LAPD officers. Administrative Order Number 6 outlines the procedures that the department must follow (See Appendix 2).

In 2018 the LAPD released 27 videos (May through December). In the first full year of the policy, 2019, 36 videos were released; for 2020, 41 videos were released of officer-involved-shootings and critical incidents.

The LAPD Critical Incident Community Briefing. LAPD has developed a unique and deliberate process for releasing videos to the public, which a number of other law enforcement agencies are

now using or adapting. A narrated version of the officer-involved shooting or critical event is released on YouTube within 45 days of the incident. Referred to as the “Critical Incident Community Briefing,” the footage is not released in ‘raw’ form. Rather, an LAPD spokesperson (the public information director or one of his staff) explains what has happened and provides context for the incident. The briefing usually includes the 9-1-1 call that led to the incident, highlights of the officer’s actions via BWC footage, and states that the investigation is on-going. Other video from the officers’ DICV, private surveillance cameras, or footage from cell phones may be included. The LAPD briefings range in length from 15 minutes to 35 minutes.

The origins for the briefings began in 2016. In that year, LAPD’s Office of Constitutional Policing and Policy (OCP) and the Chief of Police anticipated that the Department would eventually release BWC footage to the public. They began planning for this by researching how other departments were doing it. They knew that Seattle was releasing most of its video upon request and did not wish to follow that method. Instead, they traveled to Las Vegas to learn how the Las Vegas Metropolitan Police Department (LVMPD) was releasing their footage. Their experience with LVMPD led them to develop the framework for releasing BWC video in a way that was understandable and digestible to the public. Command staff and the public information office saw the release of footage as “an opportunity to educate the public about police tactics and policy.” Since 2018 about 20 police agencies have emulated LAPD’s method.⁸

Step 7. Video footage and other digital evidence are provided to the DA’s Office and the Los Angeles City Attorney’s Office through the cloud or by DVDs. The metadata from the Axon platform indicate that detectives share information with deputy district attorneys (DDA) through the cloud.⁹

We interviewed a deputy district attorney (DDA) and technology person with the LADA’s Office who explained their roles and responsibilities. They discussed the interactions within their office and with the LAPD regarding BWCs as well as their involvement with other law enforcement agencies in Los Angeles County.

The DA’s Office was involved in the planning stages for the adoption of BWCs in LAPD. They were included in the Central Division pilot program in 2014, so they were familiar with the technology and the ramifications of using the footage as evidence. One interviewee was responsible for implementing Evidence.com within the DA’s office in 2015, which required the acquisition of 965 licenses that were distributed to their DDAs and staff.

For successful use of the footage, they developed key business rules up front and discussed issues with the LAPD and internally with their DDAs. Because the DA’s office does not have a stand-alone BWC unit, these two individuals are responsible for answering all BWC-related questions, including providing training on workflow, content retention, discovery, and use of

⁸ To view an example of the Department’s Critical Incident Community Briefing go to: <https://www.youtube.com/watch?v=UDThHbrtQE4>. In addition, LAPD’s website includes all the videos available for OISs and critical events at <https://www.lapdonline.org/critical-incident-videos/>

⁹ Within the metadata investigators indicate the type of information they are sharing (BWC footage, other video, documents, etc.) It is not clear whether this is done routinely by all investigators.

Evidence.com. The Evidence.com training includes how to retrieve the footage, how to annotate, and how to utilize content.

The DA's office works with 18-20 law enforcement agencies that submit approximately 15,000 cases to Evidence.com and 230,000 pieces of evidence annually. With the LAPD, when BWC video is uploaded and shared with the DA's office through Evidence.com, the DDAs receive a notification via email, and all DDAs have access to the video. Evidence.com has a 'grouping feature,' which allows the user to create groups for sharing and upload.

Despite BWC video evidence steadily increasing, the DDA estimated that only about 10% of all submitted video is viewed by DDAs prior to making a filing decision. In general, he said, it is usually not a factor in whether a case is filed. To protect victims, bystanders, and others, the DDA redacts the video through Evidence.com's added redaction feature before it is shared with the defense. There are several ways to share video with the defense, including Evidence.com, digital media (flash drives), or by creating a download link. When the DA's office uses BWC footage in court, they usually play it for the jury on a laptop device, and the court will make a copy of the video for evidence.

Limitations and Challenges with Digital Evidence

During our interviews members of the LAPD provided insight about the limits and challenges to the BWCs. Members of the Tactical Technology Section gave us their opinions about the current state of BWC technology, including the device itself, storage in the cloud (Evidence.com), and emerging video analytics features.

In its sixth year of officially using BWCs, the Department is using a third-generation camera. The camera has the capacity to upload footage without having to dock the unit, but WIFI connectivity is not reliable in all stations, so officers must continue to use the docking stations. The current camera is a bit heavier and about an inch longer than the previous iterations.

The current cloud-based platform is simple and relatively easy to use. There are several search criteria available when looking for a specific video. There is an audit trail for determining who accessed the footage and the date and time that it occurred. The metadata include the location of the encounter and because it is linked to ESRI maps, a car or foot pursuit can be tracked and mapped after the event.

One of the limitations of the BWC is the way in which the cameras are mounted on officer uniforms. Previous iterations of the camera used magnets to hold the camera in place and that has been replaced by a more stationary 'wing clip.' Nonetheless, officers bemoan the fact that the cameras get pulled off during a struggle or that they damage their uniforms.

New functions are now available including a 'voice to text' feature, which translates audio into transcripts. In Evidence.com, an officer can access "Auto-Transcribe", and the audio captured by BWC will be transcribed to text. The Department is currently pilot testing this feature in one division and will determine its value later this year.

Discussion

The use of BWC footage fits into the LAPD's operational and accountability processes. That is, this form of digital evidence is utilized at multiple levels within the organization and for different reasons. Operationally, officers write up reports and arrests and tie BWC footage to those incidents. Supervisors review footage and ensure that the incident reports reflect that BWC evidence is included. Investigators review footage and attach the video to their cases and transfer them to deputy district attorneys. The DA's Office then reviews some of the video, transmits the footage to the defense bar, and on occasion will play the video in court.

From the accountability perspective, the LAPD's Video Compliance Unit within each Bureau reviews footage to ensure that officers are following policy by activating their cameras and categorizing the footage. After a critical event, supervisors, the Force Investigations Division, the Chief and command staff, the Board of Police Commissioners, and the LADA review footage for administrative and legal purposes. Lastly, footage from critical events is released to the public for their consumption via YouTube.

There are other ways to make fuller use of the digital evidence, including routine reporting of BWC statistics, analysis of the metadata, and developing ways to review the vast number of videos that are now a part of the LAPD data schema. Overall, it is not clear how many of the 4 million videos have been reviewed in a year's time. Like many other agencies, the percentage of review is probably low given the high volume and length of time it would take to look at all of the footage.

Recommendations

Based on this report and our discussions with personnel within the LAPD, we provide the following recommendations.

Recommendation 1: Continue to examine and analyze metadata.

Metadata of digital evidence are available from the Axon platform. The LAPD should continue to examine and analyze the data as they provide officers, investigators, command staff, and analysts with a trove of information about various activities. A strategy for extracting and analyzing the data is necessary, given the vast amount of data available.

Recommendation 2: Build upon the use of metadata by providing BWC-related statistics and numbers on the LAPD website.

As part of its movement toward transparency, the LAPD should provide statistics about BWCs on its website. Basic information about the number of cameras in use, the number and hours of video recordings made, the number of videos used in investigations, internal affairs, uses of force, officer-involved shootings and critical events, and other statistics would shed light on police activities.

Recommendation 3: Continue to work with Federal and local agencies on digital evidence management.

The Tactical Technology Section has shared information with the Bureau of Justice Assistance, the BWC training and technical assistance providers, and other policing agencies through webinars, conference presentations, and other media. Continuing to do so would be beneficial to the Department and other agencies so that lessons learned from their experiences can be shared.

Chapter 3

Managing Digital Evidence in A Large Agency: The Phoenix Experience

By

Charles M. Katz

Introduction

Despite the high use of digital evidence collected through body-worn cameras (BWCs), little research has examined the collection, flow, maintenance, and dissemination of BWC data. The purpose of this chapter is to describe the management of digital evidence obtained through BWCs deployed by the Phoenix, Arizona Police Department (PPD). We discuss issues in the production of BWC data and its use within the PPD and among city and county prosecutors. Of importance within this chapter is the evolution of cameras, policy, and compliance within the PPD and the manner in which the city and county prosecutors use the BWC footage. In addition, the chapter sheds light on how footage is shared with public defenders and private attorneys.

Background

Setting

The Phoenix Police Department (PPD) is a large municipal police agency with more than 3,000 authorized sworn personnel and about 1,000 support personnel. It serves a community of more than 1.6 million people, making it the fifth-largest city in the U.S.

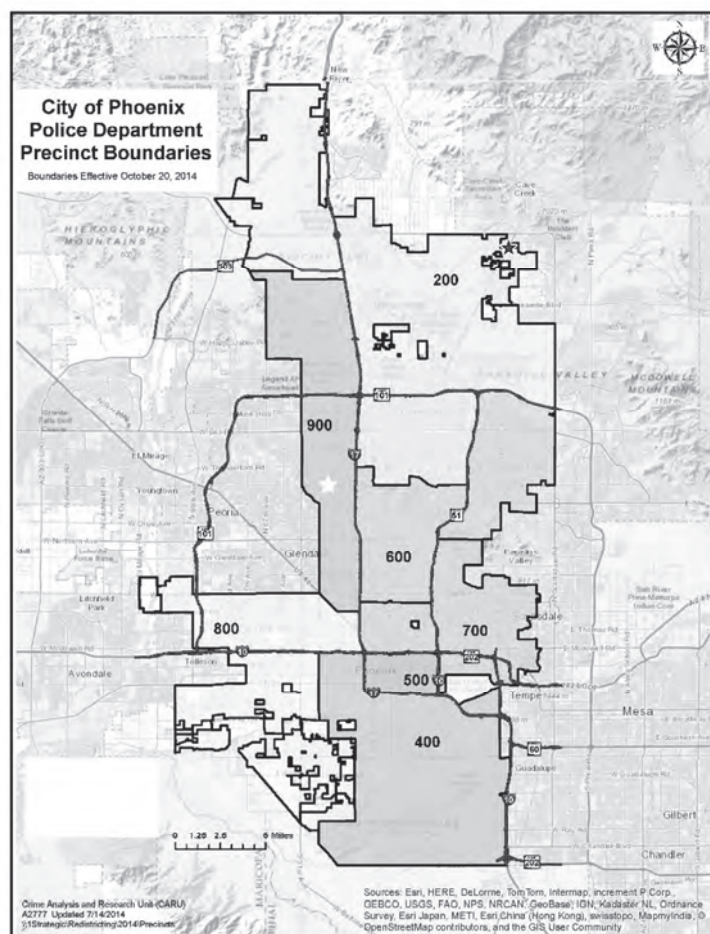
The City of Phoenix is diverse. About 43% of the population is Hispanic, 42.5% are White, 7.1% are Black, 3.8% are Asian, 2.1% are American Indian, and 1.5% are of another race or ethnic group. Approximately 19% of the population is foreign-born, and 18% live in poverty. In 2020, the UCR violent crime rate for the city was approximately 8.4 crimes per 1,000 residents, and the property crime rate was about 31.3 per 1,000 residents. In the same year, there were 660,200 dispatched calls for service, excluding officer-initiated calls.

Chief Jeri Williams leads the department, which is organizationally divided into seven major divisions: patrol, investigations, strategic and tactical services, community engagement and organizational development, professional standards, technical and support services, and reserve. Patrol is organizationally divided into precincts, squad areas, and beat areas for principal patrol services. The PPD's patrol division is divided into eight precincts. Most precincts include three squad areas, and each squad area is divided into several beat areas. The investigations division comprises drug enforcement, family investigations, laboratory services, property crimes, and violent crimes. The strategic and tactical services division includes the traffic bureau, tactical support bureau, homeland defense bureau, and the airport bureau. The community engagement and organizational development division comprises training, employment services, and community engagement, and the professional standards bureau includes public affairs and

Adopting BWCs in Phoenix

Materials created as part of the Maryvale pilot project were also used to produce BJA training materials included in the BWC training guide that police agencies use nationwide to train their officers in the use of BWCs. In October 2014, PPD received additional funding to support 60 more BWCs; and in 2016, PPD received more BJA funding to further test the effects of BWCs through a randomized control trial.

responsible for managing and disseminating digital evidence associated with BWCs, revising policy, developing training curriculum, and providing training to officers. As part of its role, the unit serves as the primary liaison to internal and external stakeholders, including city and county prosecutors.



Methods

The present study relies on several data sources. First, we interviewed employees of the PPD, Phoenix City Prosecutor's Office, and the Maricopa County Attorney's Office. Interviews were conducted in-person or through Zoom using a semi-structured interview instrument. The instrument contained five sections that included questions related to (1) key personnel assigned or responsible for BWC digital evidence; (2) hardware and software used to enter, maintain, and disseminate BWC digital evidence; (3) policies, processes, and procedures used to collect, share and retain BWC digital evidence, (4) the use of BWC footage for evaluation and training, and (5) plans and recommendations for BWC digital evidence in their agency. Second, BWC metadata was collected from agency personnel on data volume at key decision points. These data were used to assess the context in which the digital evidence was available and used by different stakeholders. Third, administrative statistics were collected to provide context on the department.

Implementation of BWCs

The implementation of BWCs in the PPD was conducted through a series of pilot studies that increased in size and scope. In 2010, following an incident between a Phoenix Councilman and a PPD officer, a Task Force established by the City Manager's office recommended to City Council that the PPD begin to pilot test an on-person video camera system. The department subsequently piloted for three months in 2011 one camera system that Taser International had developed (now known as Axon). The pilot test was conducted with about 18 officers to assess their comfort levels and the utility of the cameras.

Following the pilot test, the PPD applied for and was awarded a grant from the Bureau of Justice Assistance (BJA) under the Smart Policing Initiative to obtain, evaluate, and report on the results of the program to deploy 56 BWCs in one precinct, Maryvale. The department solicited bids, which detailed the minimum requirements of the BWC system. The department evaluated each proposal on four key considerations: 1) the physical characteristics of the camera, 2) display and access capabilities, 3) vendor qualifications and experience, and 4) storage. In November 2012, the PPD announced that two manufacturers (VIEVU and Taser International) received the highest scores during the evaluation process and were selected to participate in field testing. Following field testing, the PPD adopted the VIEVU camera system. The program was implemented in one of two squad areas in the precinct. All officers assigned to squad area 82 were given a BWC and served as the target group. Officers assigned to squad area 81 served as the comparison area. The evaluation of the program was successful and demonstrated the utility of BWCs for the PPD.

In 2016, PPD received additional BJA funding to further test the effects of BWCs through a randomized control trial. Another solicitation for BWC vendors was announced. The selection processes followed the same processes as the previous solicitation, but Axon Enterprises (formerly Taser International) was selected as the vendor this time. Rather than choose one geographic area to evaluate the BWC system, the PPD chose to select about 100 officers from all of the precincts (except Maryvale). This provided the PPD the opportunity to establish a department-wide infrastructure for BWCs, including internet lines and BWC docking stations,

and develop its capacity for the distribution and repair of BWCs, training officers for BWC use, and enculturate officers and supervisors on BWCs. The BWCs were deployed in May 2017.

Following the conclusion of the BJA project, PPD expanded its adoption of Axon BWCs across the department. Today, it possesses roughly 2,500 BWCs. All patrol officers and other sworn uniformed officers are required to wear a BWC. Before their deployment, officers received training at roll call.

The Flow of BWC Footage

The flow of BWC digital evidence from activation to internal and external stakeholders is shown in Exhibit 2. Generally, BWC digital evidence begins with activation for a specific event. Following the recording of the event, the evidence is typically first uploaded through a docking station. Still, it can be directly turned over to the supervisor or personnel assigned to the Professional Standard Bureau (PSB) in the event of a critical event. Depending on the type of incident, the BWC footage can be reviewed by a supervisor as part of a compliance check, reviewed by a detective as part of the evidence review, or reviewed by the chain of command in the event of use of force or a critical incident. The BWC digital evidence could then be forwarded to prosecutors or reviewed for redaction before making the footage publicly available. Each of these steps is described in detail below.

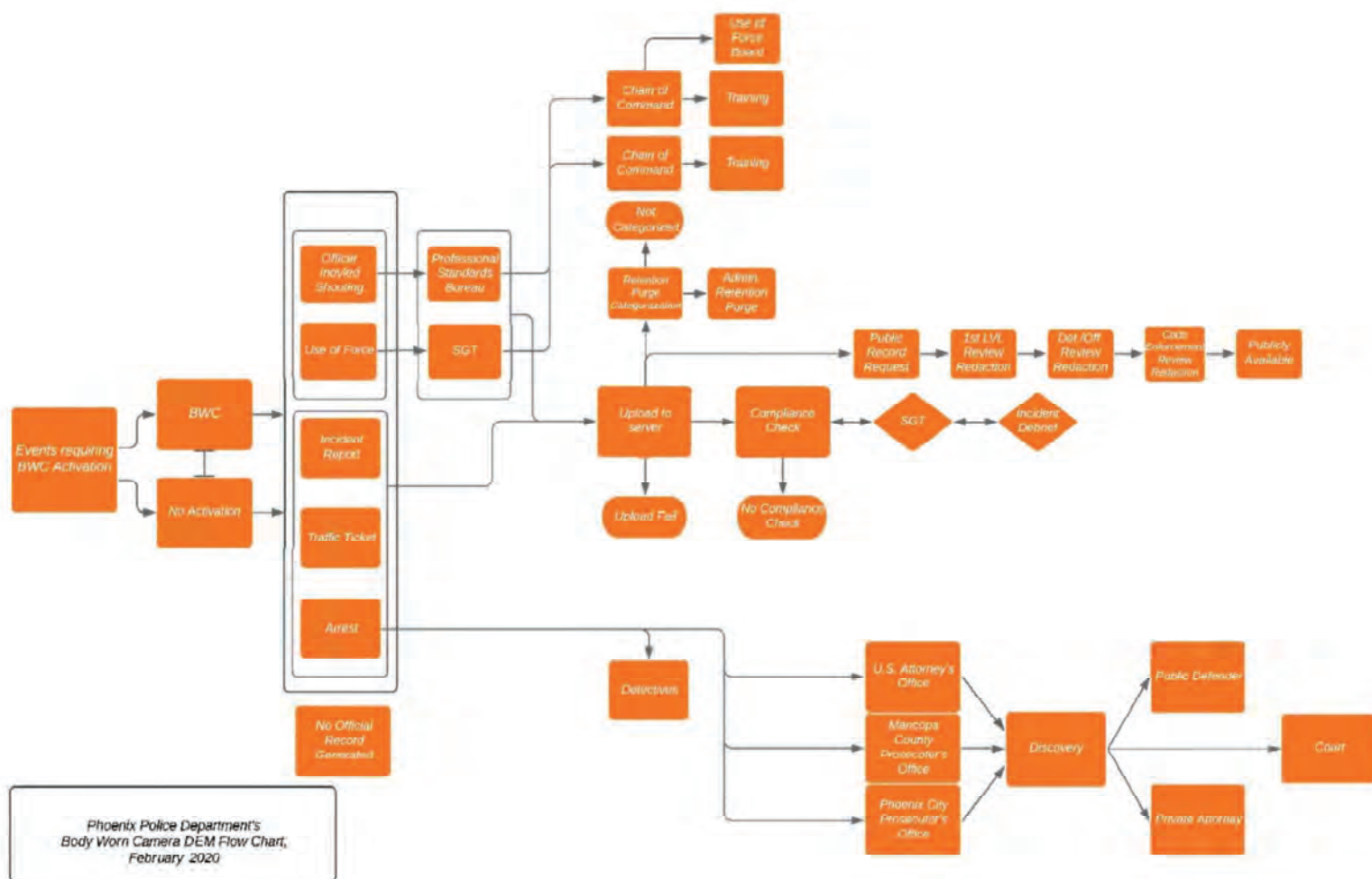
Activation

The officer's decision to activate the BWC is the first significant decision to collect digital evidence. PPD has had two policies proscribing BWC activation. Before March 1, 2018, the policy required the officer first to evaluate the context of the event and, if safe and practical to do so, activate their BWC for enforcement contacts. Specifically, the policy stated, "...all officers and supervisors who engage with scenes or participate in an enforcement contact must place their [BWC] in the on/record mode as soon as it is safe and practical to do so." Enforcement contacts included calls for service, vehicle and pedestrian stops, investigative encounters, statements and interviews, pursuits, and critical incidents.

The PPD implemented a revised policy on March 1, 2018, limiting officer discretion on activating their BWC. The revised policy stated, "Users must activate the On/Record Mode upon receiving a call for service and/or prior to engaging in any investigative or enforcement contact, such as, but not limited to: Vehicle stops, Pedestrian stops, Consensual encounters that are investigative in nature, Radio calls for service, On-view events requiring enforcement activity, Official suspect and witness statements and interviews, [and] Vehicle and foot pursuits." (PPD, 2019, operations order 4.49, page 4). The revised policy further stated that once activated the officer was to continue to record the incident until the event had concluded or the officer left the scene. Officers are also permitted to deactivate their BWC if it is in the department's best interest or when the details of a crime are sensitive in nature. The reason for a deactivation must be recorded in the incident report.

BWC activation compliance rates have steadily increased since they were first deployed in the PPD. In 2013-14, officers activated their BWC in about 32% of incidents. By 2016 through mid-August 2017, ASU researchers noted that activation rates had increased to roughly 40%. In 2017

and 2018, following policy changes, which required officers to activate their BWC upon receipt of a CFS, activation rates increased to about 73%.¹ Today, PPD estimates that officers activate their BWCs in about 80% of incidents.



¹ Katz, Charles, M. Jessica Huff (n.d.). The Achilles heel of Police Body Worn Cameras: Understanding the Factors that Influence Variation in Activation (draft). Arizona State University: Phoenix, AZ.

Upload to server

At the end of their shift, officers must dock their BWCs and upload their footage. Evidence.com relies on CAD data to tag each video file with the corresponding incident, citation, or department report number, as well as the radio code associated with the incident. If the auto code function does not capture the required data, the officer must enter the information within ten days of the incident.

Exhibit 3 shows that about 2% of BWC incidents were not linked to a report number and were left uncategorized. In 2020, PPD compiled about 2 million BWC files, which used about 955,065 GB of space and resulted in 483,129.45 hours of video.² One respondent indicated that, on average, about 5,250 videos are generated each day.

The majority of BWC digital evidence storage space (85.5%) is dedicated to incidents involving order maintenance (e.g., family offenses, mentally ill subject, drugs, prostitution), violent crime, traffic-related incidents, property crime, and service activities (e.g., welfare checks, injured/sick person). Officer-involved shootings only comprised about 2% of files and about 1.8% of storage space. About 3.3% of files and 6.57% of storage files were on hold. These mainly were files related to ongoing litigation matters (7,947 files and 8101.8 GB) or are required to be retained due to departmental policy or state law (56,900 files and 54,667.8 GB). A small number of files and a small amount of space were dedicated to accidental activations, training videos, and administrative functions.

Exhibit 3: BWC digital evidence by event type, 2020					
	# files	Total GB	% of files	% GB	Hours of video
Order maintenance	726,806	283,753.20	36.47	29.71	
Violent crime	220,685	158,895.70	11.07	16.64	
Traffic related events	309,854	154,499.00	15.55	16.18	
Property crime	282,750	126,528.81	14.19	13.25	
Service activity	214,749	93,084.11	10.78	9.75	
Other	108,799	44,233.32	5.46	4.63	
Uncategorized	39,903	17,012.09	2.00	1.78	
Officer involved shooting	651	779.55	0.03	0.08	
Hold	64,747	62,769.61	3.25	6.57	
Administrative	21,858	13,202.50	1.10	1.38	
Accidental activation	2,000	283.20	0.10	0.03	
Training	146	25.45	0.01	0.00	
Total	1,992,948	955,065	100	100	483,129.45

Source: Phoenix Police Department

² From 2014 to August 3, 2020 the PPD reported that there had been 2,568,478 videos taken by officers, which amount to about 1,044 Terabytes of data.

Further review, compliance checks, and public release

Following the upload of footage to the server, three different actions are routinely taken depending on the incident. These actions include officer review, compliance checks, redaction review, and use of force review.

Except for critical incidents, officers are permitted to review their footage at any time following an incident, including before writing any reports or a court hearing. In a critical incident (officer-involved shooting or use of force), officers are required to turn their BWC over to their supervisor or the Professional Standards Bureau (PSB) for incident review. The BWC is transferred to the department's BWC unit, where the footage of the critical incident is downloaded, and the digital evidence is restricted.

Detectives can review any BWC digital evidence related to an assigned case if it is not restricted. Detectives are first assigned a case for investigation and are provided associated incident reports. Incident reports related to the assigned investigation contain a link to any associated BWC footage through Evidence.com.

Supervisors are required to inspect at least one video per week for each officer assigned to their squad who is assigned a BWC. Supervisors record their findings in the user's/employee's supervisor notes. Each month, the precinct inspections lieutenant is required to randomly inspect at least six (6) body-worn camera videos and record their findings in the Monthly Inspections Report. The department can later review videos to ensure officer compliance with policy, investigate citizen complaints, and for training purposes (PPD, 2019, operations order 4.49, p 4).

The public frequently requests BWC footage from incidents. In 2020, 2,359 public records requests were made for BWC footage. Following a public records request, the BWC digital evidence goes through an initial review for redaction, followed by an officer or detective review for redaction, and a code enforcement review for redaction. Following redaction, the video can be released to the public. Currently, it takes about 6-9 months to release footage based on a public request. Respondents noted that the length of time it takes to fulfill requests is partly due to staffing limitations and the time it takes to redact necessary data.

BWC digital evidence captured during incidents involving the use of force, including officer-involved shootings, is required to undergo further review. In 2020, the PPD recorded 742 use of force incidents and 31 officer-involved shooting incidents. BWC digital evidence from use of force incidents are first reviewed by the officer's chain of command and are then forwarded to the training unit for the possible inclusion in departmental curricula. BWC digital evidence from officer-involved shootings are first reviewed by PPD's Professional Standards Bureau (PSB) and are then forwarded to the officer's chain of command, followed by the agency's Use of Force Board, and forwarded, if appropriate to the training unit.

The Professional Standards Bureau (PSB) is permitted to review BWC footage only if a complaint is formally submitted to the department or if an officer is involved in a shooting incident.

Prosecution

BWC digital evidence could potentially be forwarded to three prosecutors' offices: City of Phoenix, Maricopa County, and the U.S. Attorney's Office. In 2020, the PPD recorded forwarding BWC digital evidence to the City of Phoenix Prosecutors Office for 11,600 cases, the Maricopa County Prosecutors Office for 4,276 cases, and forwarded no BWC digital evidence to the U.S. Attorney's Office. Therefore, we focus on BWC digital evidence forwarded by the PPD to the City of Phoenix Prosecutor's Office and the Maricopa County Attorney's Office for this report.

City Prosecutor

The Phoenix City Prosecutor's Office served as an early adopter of BWC digital evidence. Following their initial experience as part of the 2013 BJA-funded project noted above, the City Prosecutor and Assistant Chief Kurtenbach from the PPD attended and spoke at a White House conference on BWCs. The City Prosecutor spoke on the complexities of prosecutorial handling of BWC footage and provided valuable content for BJA's BWC Toolkit.

There has been substantial growth in the amount of BWC footage obtained by the city prosecutor's office since PPD adopted BWCs. In 2015 about 148 BWCs were being used by the PPD, and by 2020, the agency had deployed about 2,500 BWCs. According to the City prosecutor's office, of the approximate 16,000 cases set for pretrial conference annually, the amount of digital evidence obtained through BWCs has increased dramatically as the PPD increased the number of BWC deployed in the field. In 2015, only about 1,000 (6%) cases that moved forward to Pre-Trial Conference had video, compared to 4,000 (25%) cases in 2018, and almost all 16,000 cases by 2020.

Data collected from the City Prosecutor's Office over this time showed that the length of the BWC video also increased. In 2015 the average length of a video was 14.11 minutes, and by 2020 the average length of a video was 33.11 minutes. The number of videos per case also increased substantially from 2.6 videos per case in 2015 to 4.4 videos per case in 2020. Combined, this resulted in a substantial increase in the time it takes to review video for each case, increasing from 62.4 minutes per case in 2015 to about 213 minutes per case in 2020, more than tripling the amount of time needed to review video.

The initial pretrial conference triggers the flow of BWC footage to the City Prosecutor's Office. When the initial pretrial conference is scheduled, the prosecutor's office electronically requests all associated BWC digital evidence for the case. Currently, the City Prosecutor's Office and the PPD rely on a web-based portal, which before BWCs, was used to share information between the two organizations on several matters related to such issues as toxicology results and 911 audio. When preparing for the initial pretrial conference, the prosecutor's office places an electronic task order for any BWC footage associated with the case in the City web-based portal. The portal logs the request to the PPD, and the PPD responds to whether the digital evidence exists.

If the digital evidence exists, it is transferred through Evidence.com. Following receipt of the video, an autogenerated report is forwarded to the City's legal assistant unit, which is informed of the dates of the forthcoming court proceedings so the unit can prioritize the review of footage.

Thorough notes are taken by the legal aid assigned the footage, which the case attorney provides. Given the increase in workload, there are now five full-time aids who are responsible for reviewing BWC footage.

Exhibit 4 below shows the total number of videos received from the PPD, their total length in time, and the number of cases attributed to. As seen below, in 2020, the Phoenix Prosecutors Office received 64,786 videos, which lasted about 31,943 hours, and were related to 12,351 cases.

Exhibit 4: BWC Video Received by Phoenix Prosecutor's Office from PPD for 2020			
MONTH	TOTAL VIDEOS REC'D	HOURS: MIN: SEC	CASES
January 2020	6266	2652:38:33	1288
February 2020	5293	2505:20:54	1132
March 2020	4939	2426:10:43	1065
April 2020	4944	2349:47:07	991
May 2020	7052	3669:06:10	1197
June 2020	5847	3071:35:35	907
July 2020	5297	2605:10:07	938
August 2020	5488	2610:10:15	1027
September 2020	4866	2471:46:41	948
October 2020	5576	2806:26:33	1061
November 2020	4909	2497:23:16	925
December 2020	4309	2277:20:54	872
Totals	64786	31942:56:48	12351

Source: City of Phoenix Prosecutors Office

Disclosure to defense counsel is entirely an electronic process through Evidence.com. The legal assistant first reviews the footage, and any necessary redaction is completed. Following the electronic permissions granted to the defense, notice is sent to defense counsel with the link to Evidence.com.

County Prosecutor

The Maricopa County Attorney's Office (MCAO) began working with digital evidence obtained through BWCs in 2015 and 2016. They started with the Mesa and Gilbert Police Departments and the Maricopa County Sheriff's Office. All three agencies used Axon and Evidence.com, and since then, they have grown to work with 20 agencies that provide them with BWC digital evidence. Currently, all of the law enforcement agencies in the county rely on Axon and Evidence.com with the exception of Salt River Police Department, which relies on WatchGuard, and the Arizona Department of Public Safety (Arizona State Troopers), which has not formally adopted BWC's to date.

The County Attorney's Office requests that agencies provide them with their BWC footage when they seek to charge the case. In the past, the county prosecutor relied on the officer's official report; however, they stated that they prefer to review the report and watch the video

concurrently as it helps them with charging decisions and decisions related to plea agreements. The PPD contributes about 34% of total BWC digital evidence received by the Maricopa County Attorney's Office. In 2020, the county prosecutor's office received a total of 74,373 videos that equaled about 44,352 hours of footage and occupied about 72 GB of cloud space, and of this amount, the PPD provided 25,787 videos that equaled to about 17,769 hours of footage and occupied about 33 GB of cloud space.

Exhibit 5: BWC Video Received by County Prosecutor's Office for 2020			
Agency of Origin	TOTAL VIDEOS REC'D	HOURS: MIN: SEC	Total Gb
Phoenix Police Department	25,787	17769:08:31	33.43
All agencies	74,373	44351:57:01	72.33

Source: Maricopa County Attorney's Office

Interviews indicated that the county prosecutor's office faced several challenges related to BWC digital evidence. First, by design, videos are tagged by incident number and not the agency. Personnel reported that it sometimes makes it difficult for the prosecutor's office to link videos with cases, given they work with more than 20 police agencies in the county.

Second, policy dictates that attorneys review all videos submitted by the police agency. However, given the volume of video received, attorneys often only check the primary officer's video at the time of charging. If the case goes to trial, all of the videos are reviewed. Third, personnel noted that BWC evidence sometimes results in conflicting information being presented to their office. For example, an officer's report might suggest one fact, and digital evidence collected through the BWC might suggest another fact. Likewise, a witness might provide a description of a suspect captured on video, but when apprehended, the suspect might not fit the description captured on video. These inconsistencies have to be addressed throughout a case and on occasion during the trial.

Stakeholders indicated that Maricopa County defense services obtained their own version of Evidence.com, permitting the prosecutor's office to share BWC video with defense counsel electronically. The prosecutor's office shares the report and video with defense counsel and then makes an initial offer for a plea agreement. At times, defense attorneys have complained to prosecutors about the large number of videos they receive in a case. Defense counsel often requests that the county attorney's office tell them which videos to review. While policies require prosecution and defense to review all videos on a case, neither the prosecutor nor defense counsel typically has the resources to review all of the videos unless the case goes to trial. It was emphasized that some defense attorneys had not received adequate training on BWC video and sometimes did not know how to download and review the digital evidence. It was also stated that contract and private attorneys know even less than public defenders because they use BWC digital evidence even less. Interviews also suggested that defendants who represent themselves are at a disadvantage because they frequently do not have the equipment to review video, especially if they are incarcerated. They lack the hardware and software and do not know how to use the video to their benefit.

Retention and Purging

As noted above, each time a video file is downloaded through the docking station Evidence.com automatically tags and categorizes the BWC video. If the automated process fails, the officer is required to manually tag the file with the radio code (both initial and final disposition code of the incident). The radio code designated by CAD automatically creates and places the video in a designated retention category. This automated process runs three times in a 24-hour period and repeats for ten straight days, and once again at 30 days, where each video file receives a designated retention category. All videos are retained for a minimum of 375 days after the video is recorded. The BWC policy states, “Captured video may be retained for longer periods in the event the video is the subject of a litigation hold, a criminal case, part of discovery, etc.” Currently, PPD’s contract with Axon allows for unlimited storage.

Challenges and Recommendations

Our interviews with police and prosecutors revealed several challenges to implementing a BWC program and recommendations to addressing these problems.

A number of officers discussed issues related to hardware. For example, one challenge mentioned by respondents was the amount of data that will need to be stored in the future. Current forecasting by the PPD suggests that the agency will require about 1 petabyte of data storage per year in BWC evidence alone. One estimate received by the PPD from Amazon indicated that 3.5 petabytes of data storage would cost the city about \$5 million a year. Continuous forecasting and planning is necessary to address future fiscal requirements.

Another challenge noted by respondents was related to perceived future hardware needs. They anticipate that bandwidth will be an issue and the costs associated with increasing bandwidth are unknown.

A continual collaborative relationship with internet providers and city IT specialists will be necessary to address police agency needs. Related, those officers’ familiar with the IT structure of the system stated that docking stations have no “intelligence” and act as a switch. Each docking station must have its own IP address, so precincts must have hundreds of IP addresses. The docking stations do not permit queuing, so they all download simultaneously when BWCs are docked at the end of a shift. This required the PPD to manage internet traffic so that RMS and other systems are not impacted. They suggested that some agencies might not possess the hardware capacity necessary to meet demand, which could be a problem for smaller agencies.

Last, some investigators noted that the PPD uses several different digital evidence management platforms. Due to the variety of DEM platforms, some officers noted that processing evidence was complex and worried about the mismanagement of evidence and the time lost due to logging in and out of different DEM platforms.

Another challenge brought up by officers was related to BWC software. PPD pointed out its high rate of BWC videos that are successfully tagged to field incidents due to integrating its CAD/RMS and BWC software systems. They noted that initially, PPDs BWC program did not afford it the opportunity to integrate systems, which resulted in a relatively high number of BWC

videos that were never linked with a CFS, incident report, or other records. Officers in the PPD recommended that other agencies consider integrating their BWC software with departmental data systems to increase agency capacity to associate BWC video with other data sources.

A number of officers voiced initial challenges related to BWC activation compliance and noted PPD enhanced BWC activation policy, which was implemented during the department's participation in BJA's Smart Policing Program. They pointed out that the new policy significantly improved compliance rates and increased digital evidence. Respondents made a point of emphasizing that those police agencies that are struggling with BWC activation compliance rates might consider reviewing other agency's policies, such as PPD's that have increased compliance rates, or reviewing BJA's BWC Policy and Implementation Program's (PIP) policy review checklist, which can provide ideas on how to improve compliance rates.

PPD officials also recommended that agencies dedicate appropriate resources to respond to public requests for BWC footage. Patrol officers, detectives, supervisors, and staff noted that a great deal of commitment was necessary to redact data from BWC footage before its public release, and well-thought-out policies and procedures are required before implementing a BWC program.

Respondents associated with the courts discussed different types of challenges and opportunities to improve systems. Some court officials, for example, recommended that with the submission of an incident report, BWC footage should be automatically exchanged with prosecutor's offices. They noted that receiving BWC evidence when a case is being submitted can support other evidence and testimony provided to the prosecution and defense; or similarly, the BWC evidence can mitigate some evidence or testimony.

Respondents further noted that the effects of delivering BWC evidence before the submission of charges or a plea offer might help the prosecution and defense review all available evidence and help them make an informed decision on the facts of the case. Additionally, if there are questions that need to be investigated further, those can be addressed at an earlier point in a case.

Additionally, others recommended implementing a central repository for BWC evidence for prosecutors, defense, and their respective court. They stated that the amount of evidence to be stored by law enforcement will grow exponentially, and rather than duplicate files, it might be helpful to share file space. One interviewee stated that control of the evidence in the repository could be based on the progression of a matter through the courts. They explained that the process could work as follows:

“The law enforcement agency would place the media in the repository at the submission of a case. Access and control would start under the prosecution. The prosecution would have the responsibility of review and redaction of information as per each city or State's laws and ordinances. Once reviewed and redacted the prosecution would grant permission to the defense to access the evidence. Because the repository is to be used by all participating parties; the defense, private, public, or self-representation, would now be able to access and view all of the evidence using standardized applications and tools. Through the progression of the case's litigation access to the evidence will be granted to

the Court with the permission of both the defense and prosecution. Once permission is granted all parties agree the BWC is part of the official case record and should be used accordingly. Upon the conclusion of a case the Court will take control of the repository and control the archival and retention according to the laws set forth by the city or legislature. The repository can be connected and grow with the change of technology. Eventually a repository will become a standard to prevent the loss of information to time and technological advancement. [The advantage of this approach is that] a repository would allow those who consume the results of the BWC evidence to share the costs of technological change. Just as the law changes so can the regulation and rules for the products of BWC. Checks and balances can be created to ensure all parties involved in the system have proper say in the access, use, and retention of the BWC while providing an easy exchange of the evidence.”

Others recommended greater emphasis on learning about the review and use of BWC footage by downstream actors. Some noted that the police possess too much discretion in decisions related to editing, direction, and distribution of BWC videos. They recommended that prosecutors, defense attorneys and members of the public should have an increased role in matters related to BWC records policies and the release of BWC footage. But they noted that it is hard to determine how this issue should be addressed because of their relative lack of understanding of the issues.

Lastly, others explained that some downstream actors do not possess the resources to review or use BWC footage as proscribed by the policy. Specifically, two respondents stated that prosecutors, defense attorneys, and defendants often do not have the resources to review all of the footage before significant decision points, and the impact of the lack of evidentiary review is unclear. They recommended that future research is needed to determine how downstream actors use BWC evidence and how the resource limitations faced by defendants and defense counsel in the use of BWC evidence impact case processing.

Chapter 4

Managing Digital Evidence in a Mid-Sized Agency: Lessons from Glendale, AZ

By
Michael D. White
Quin Patterson

Introduction

This chapter describes the use of digital evidence from body-worn camera footage within the Glendale Police Department (GPD), a medium-sized agency in Arizona. Using the flowchart described in Chapter 1 we discuss the way in which the GPD collects and reviews footage and how the department works with the prosecutors in Maricopa County.

Two unique features of GPD are its policy and compliance process. With its policy, the department stresses continuous activation of the camera, comprehensive auditing, and use of force reviews. The GPD's compliance process emphasizes monthly audits by supervisors, comparisons of videos to each officer's calls, and inspections to ensure that videos are appropriately tagged. These are discussed below.



Background

Glendale is the 7th largest city in Arizona, spanning over 62 miles with a population of approximately 252,000 (see Figure 1; U.S. Census Bureau, 2019). Located in Maricopa County, Glendale is about nine miles northwest of downtown Phoenix.

The median household income in Glendale is \$55,020 and the poverty rate is 18.2%. The racial makeup of the Glendale population is 77.1% White, 38.2% Hispanic or Latinx, 6.8% African American, 4.2% Asian, 1.6% Native American, and 3.9% biracial/multi-racial (U.S. Census Bureau, 2019).

Department Overview

Chief Chris Briggs oversees the Glendale Police Department. Currently the department has 432 sworn officers and 131 civilians. The city is divided into 24 different patrol beats.

The department's two assistant chiefs oversee the Operations Bureau and the Investigations and Administrative Services Bureau. The department has five divisions, each run by a Commander: Gateway Patrol, Special Operations, Criminal Investigations, Foothills Patrol, and Administrative Services.¹

Crime in Glendale

Glendale experiences violent and property crime rates that are among the highest in the state of Arizona. In 2019, Glendale's violent and property crime rate were 339.9 and 3,183 per 100,000 residents. Glendale's property crime rate, in particular, was significantly higher than the national average and exceeded the rates of nearly all other larger Arizona cities, except Phoenix (3,492.4) (e.g., Scottsdale [1,957.7], Mesa [1,869]; FBI, 2019).

Methodology and Data

This report is based on a set of questions designed by Justice & Security Strategies (JSS). For the Glendale Digital Evidence Management (DEM) project, we divided the questions into three sections and sent the questions to GPD in a staggered fashion (monthly). Once the first set of questions was returned, we sent the second. And so forth. The questions were sent to Commander Rick Bradshaw, who distributed them to Lieutenant David Vidaure (in charge of training), Rodney Collazo (Communications Systems Specialist), and others in the department as needed. We used the same approach with the BWC footage flow chart. We employed a "self-report" method rather than conducting formal interviews in order to lessen the workload and allow personnel to complete written responses to the questions on their own timeline. We sent a separate set of questions to Ryan Glover, the Glendale City Prosecutor.

Glendale's Body-Worn Camera (BWC) Experience

GPD was one of the inaugural grantees in BJA's BWC Policy and Implementation Program in 2015 (an award of \$449,986). In 2016, GPD began deploying BWCs to officers. The department purchased 300 BWCs, and the cameras were issued to officers as they completed the BWC training class. Cameras were issued to officers in the Patrol divisions, Traffic Unit, Neighborhood Response Unit, Community Action Teams, and School Resource Officers. The deployment took approximately three months. GPD continues to issue cameras to rookie officers who graduate from the academy and other officers who re-deploy back to the patrol division from other assignments (e.g., investigations).

GPD currently deploys the Axon Body 3 (AB 3; see Figure 2). According to GPD, the AB 3 has a number of advantages over the Axon Body 2 (AB 2). For example, the AB 3 has a longer battery life, allowing officers to complete a 10-hour shift.² The basic operating functions of both AB 2 and AB 3 are very similar. The biggest difference is the power switch; the AB 2 had a slider switch that often broke or broke off completely, while the AB 3's power switch is push-button. GPD also stated that the AB 3 has an LCD display screen with defined icons making the

¹ For more detail on GPD, see:

https://www.glendaleaz.com/live/city_services/public_safety/police_department/about_us.

² Battery life is affected by the amount of recording during a shift (e.g., recording a lengthy investigation).

camera's status clear and obvious (e.g., is it recording?). The AB 3 can go up to 1080P HD and has better video stability and sound quality. GPD personnel did note that the new AB 3 camera is slightly larger and heavier than its predecessor, but not enough to cause complaint.

Figure 2 Axon Body 3



Key BWC Policy Issues

A clear, detailed administrative policy is the foundation of an effective BWC program (White & Malm, 2020), and GPD has such a policy. The GPD policy passed the BWC Training and Technical Assistance (TTA) policy review process in 2016 as part of their grant award. Given that the TTA policy

review process is not prescriptive, there is considerable variation across key policy issues (for a description of this variation, see White, Patterson, and Malm, 2021). Below we highlight GPD's policy positions on several key issues.

Activation

GPD requires officers to activate the BWC to record “all contacts with persons when performing official duties.” This applies to uniformed assignments, both on- and off-duty. The policy provides a non-exhaustive list of examples, from traffic stops and domestic violence incidents to interrogations and all searches. The policy also provides a list of circumstances in which activation is prohibited (e.g., during breaks, administrative functions, personal activities, etc.). This is consistent with best practice (White, Patterson, & Malm 2021).

Citizen Notification

GPD policy recommends that officers notify citizens they are being recorded, but that notification is not required. If asked about the BWC, officers are instructed to inform citizens about the BWC unless it would be unsafe to do so.

Deactivation and Related Issues

Once activated, the GPD policy requires officers to continue recording until the encounter is completed. Officers do have discretion to temporarily deactivate the camera at the request of a citizen or victim. The GPD policy is explicit about the importance of not deactivating unless there is “good cause.”

“It is in the best interests of the Department and individual officers not to interrupt BWC operation after activation, without good cause. Accordingly, Department personnel may deviate from this policy only if necessary or otherwise appropriate, e.g. to protect the

identity of a confidential informant, or at the specific request of a victim or a witness asking not to be recorded. Officers will document the reason(s) for the deviation from this policy on the BWC, if practical, or in writing and will submit this documentation to a supervisor.”

This is an important policy position, as there have been numerous controversial cases involving early or temporary deactivation of the BWC (audio, video, or both; e.g., the Stephon Clark case in Sacramento; Vera, 2018).

Compliance/Auditing

GPD has a robust BWC compliance/auditing process with three distinct components. First, Sergeants and Lieutenants are required to do a monthly audit of at least three random videos for each of their assigned officers to make sure the equipment is operating correctly and to also ensure that officers are correctly tagging, labeling, and categorizing their downloaded videos in Evidence.com.

Second, Sergeants and Lieutenants also compare the amount of calls each officer responded to for the month to the number of videos downloaded into Evidence.com for the same month. Sergeants document this ratio on a Sergeant Monthly Inspection Form Report. This form is reviewed by each sergeant’s Lieutenant before it is forwarded to the Audits & Inspections Sergeant for final review and internal archiving.

Third, the GPD recently identified an issue with improper video tagging which resulted in some videos with evidentiary value having no assigned retention period. In response, the Audits & Inspections Sergeant now conducts a monthly inspection in the system to find the total number of items without a category assigned. The number of uncategorized items is then forwarded to the Administrative Commander, who then notifies the other commanders to address with their sergeants. Each month, the total number of uncategorized items has decreased in the database as supervisors are reminded to check on their officers’ uncategorized video footage.

This three-pronged compliance process is among the most comprehensive we have seen among TTA grantees. The GPD also highlighted the importance of footage review for monitoring officer performance:

“There have been times where supervisors have seen tactical, professionalism, driving concerns which they address through a verbal discussion or set up additional training with a subject matter expert trainer/instructor. The supervisor can also note and reinforce positive tactics, driving or professionalism.”

Use of Force/Complaint Review

The GPD policy requires that supervisors review BWC footage for each of their assigned officers’ use of force or any incident resulting in a citizen complaint. The Professional Standards Unit generally gets involved only when a serious injury occurs or if there is a discrepancy in the

account of the use of force entered by the initial supervisor. In 2019, there were 666 uses of force. In the same year, there were four citizen complaints filed against GPD officers.

Flow of BWC Footage into the Criminal Justice System

BWC footage of any arrest made by the GPD is sent to the appropriate prosecuting agency: the U.S. Attorney, Maricopa County Attorney, or the Glendale City Prosecutor's office. The process for delivering BWC footage to the prosecutor agency varies based on the case agent for the crime. If it is a patrol investigation and arrest, the "discovery officer" coordinates what is released and works with the prosecutor. If the case agent is a detective in the Investigations Division, then the detective provides a link to the case in Evidence.com and sends the link to the appropriate prosecutor. The prosecutors have access to Evidence.com and can log in on their credentials. Footage is then used in discovery, where it is disseminated to public defenders and private attorneys, and ultimately is shown in court.

The Glendale City Prosecutor highlighted the value of BWCs for his office. He stated:

"BWC is a useful tool for trial. It gives the trier of fact a real time view of what happened while officers were on scene and recording. The saying 'a picture is worth a thousand words' is really the best way to describe the benefit. Even the best written police reports will not be able to capture every word, the emotion and the nuances of the setting for an officer interaction."

BWC Flowchart

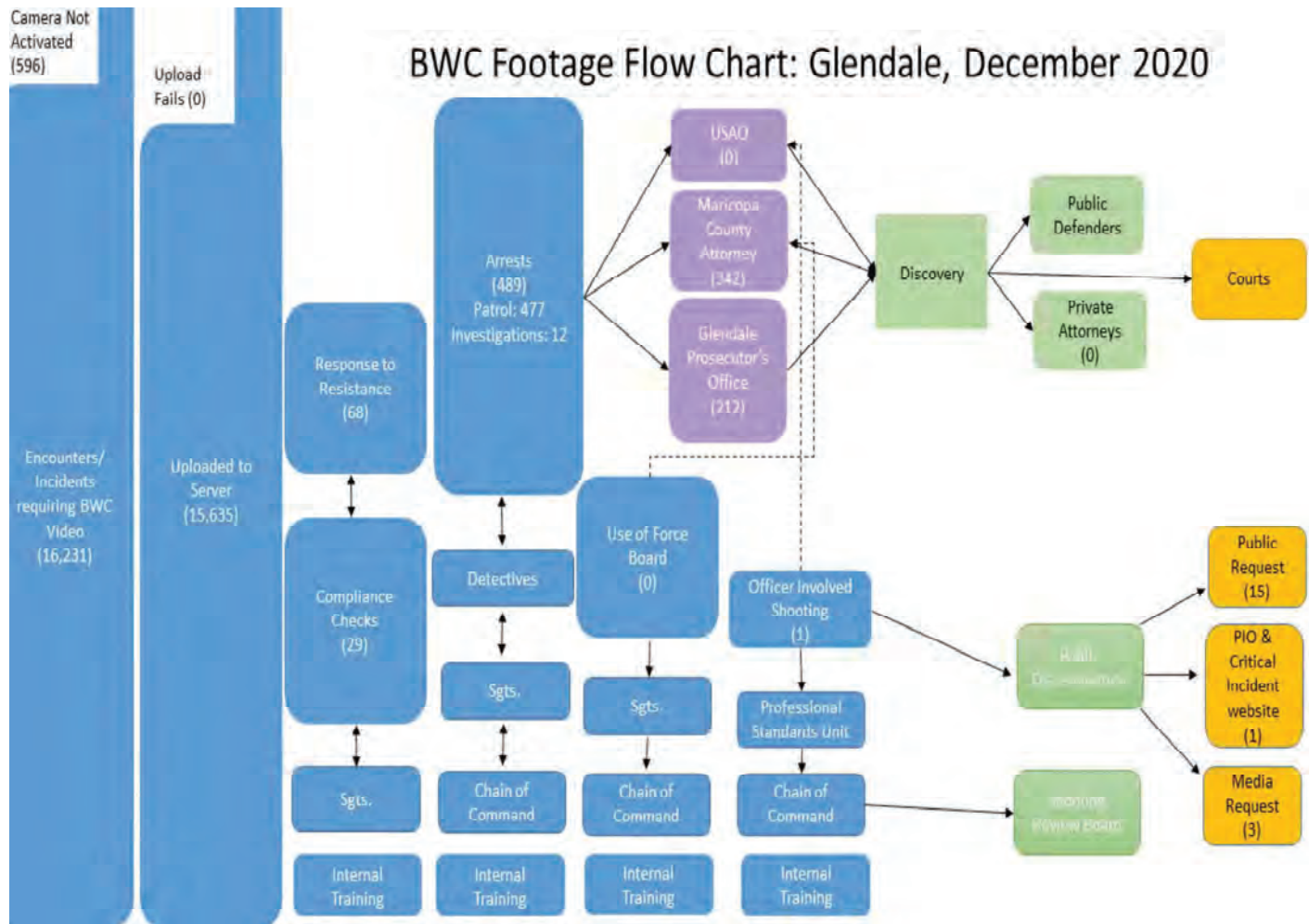
We also asked GPD about the flow of BWC footage into and out of the organization. To illustrate this flow, GPD described the amount and type of BWC video captured by all officers in the department during one month – December 2020 (see Figure 3). During that one month, there were a total of 16,231 encounters between Glendale officers and citizens that, per policy, required activation of the BWC (far left of Figure 1). Glendale officers demonstrated an extraordinarily high activation rate, as 15,635 of those incidents had BWC footage uploaded to Evidence.com (96.3% activation compliance). The activation compliance rate is explained, in large part, by the robust auditing/compliance process that is in place.

Given 300 officers are assigned BWCs, the average number of uploaded videos per officer is 52 per month. As we follow the flow of footage through the department, it becomes clear that the vast majority of footage is not reviewed and has no apparent evidentiary value for the GPD or downstream actors in the criminal justice system. For example:

- 68 encounters involved a use of force (automatic review by supervisor). In other words, less than one-half of 1% of BWC recordings captured a use of force.
- 29 videos were reviewed by supervisors as part of compliance checks (one-tenth of 1%).
- No citizen complaints were filed against Glendale officers.
- 489 videos captured an arrest (3% of the total BWC recordings). All of those videos were forwarded to the Maricopa County Attorney (342) and Glendale City Prosecutor (212).

- There was one officer-involved shooting during the month, which was publicly disseminated via the department's critical incident website (<https://www.glendaleaz.com/cms/One.aspx?portalId=15209085&pageId=17437470>).
- There were 15 public requests for BWC footage, and three media requests for footage.

Figure 3 BWC Flowchart



Challenges and Recommendations

Challenges

Glendale PD has a well-established and efficient BWC program. Three hundred officers wear cameras, and using December 2020 as an average month, those officers recorded more than 15,600 videos (or more than 187,000 videos per year). Given the maturity of their BWC program, Glendale has a clear, detailed administrative policy, an outstanding activation rate, a robust auditing/compliance system, and established protocols for transferring digital evidence to the appropriate prosecuting agencies.

Nevertheless, the BWC program has encountered a few challenges. First, the program requires a substantial commitment from the department, both in terms of finances and resources. GPD has

focused the deployment of BWCs to patrol officers. With additional resources they would like to expand the program. Lieutenant Vidaure stated that “everyone who wears a badge should also be wearing a BWC.”

Second, the rapid pace of innovation with BWCs has required the department to remain nimble in terms of policy and practice. Since the program’s inception, there has been a transition to new cameras, incorporation of smart phones in the BWC data gathering process, changes to the video tagging protocols and tagging categories, and several modifications to the BWC policy. For example, new redaction technology allowed the department to protect the identities of undercover officers by blurring out images in footage prior to public release. As a result, officers no longer had to temporarily deactivate the BWC when interacting with undercover officers.

The Glendale City Prosecutor noted that BWCs do have some limitations. He noted:

“The camera is not a substitute for the human eye and this is important to remember for presentation to a trier of fact. BWCs only capture the scene once officers arrive and only for the area that is actually covered by the camera. Additionally, human error tends to be an area of concern as well. Sometimes videos can be uploaded or attached in the wrong place, which takes time and effort to figure out. Other times officers can forget to turn cameras off when an investigation has concluded.”

Last, less than 5% of the footage recorded by Glendale police officers has evidentiary value because of an arrest, use of force, or citizen complaint. Moreover, very few videos were requested by media or citizens. This raises an important cost-benefit question: given the costs (financial and otherwise) of managing the program and the fact that 95% of footage is never viewed by anyone, are BWCs worth it? The Glendale Police Department believes they are.

Recommendations

Our review of the Glendale Police Department’s BWC program points to several important recommendations. First, Glendale’s BWC program is anchored in a detailed, clear administrative policy. At the time the department received funding from BJA’s BWC Policy and Implementation Program (PIP), their policy passed our TTA team’s policy review process. Since then, the policy has guided officer’s decision-making with regard to BWCs. One of the TTA program’s guiding principles is that good body-worn camera policy will lead to good body-worn camera practice. Glendale exemplifies this principle.

Second, Glendale has an exceptionally high activation compliance rate (over 95%). This activation rate is explained, in large part, by their administrative policy (which emphasizes the importance of recording), their robust auditing/compliance process, and their constant vigilance in monitoring the program. Departments seeking to achieve a high activation compliance rate would be well-served by modeling the Glendale program.

Last, Glendale PD has adopted a critical incident briefing process that is similar to the Los Angeles Police Department’s system. The GPD states:

“Critical Incident Community Briefings are short video briefings that are produced by the Glendale Police Department. This purpose of these briefings is to give our community a

better understanding of what we know during the early stages of an investigation. While Critical Incident Community Briefings are compiled during the early stages of an investigation and contain factual information as we know it, additional witnesses or evidence could come to light which would potentially change our understanding of the investigation. The Glendale Police Department's purpose with providing this information at this point in an investigation is not to provide conclusions, but simply to provide facts to our community."

(<https://www.glendaleaz.com/cms/One.aspx?portalId=15209085&pageId=16223762>)

The release of raw BWC footage, narrated by a Glendale representative, provides a critically important form of community engagement and transparency, and it also provides the necessary context for community members to understand what they are seeing (Alikhan, 2021). This process should serve as a model for other law enforcement agencies.

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Chapter 5

Managing Digital Evidence in a Mid-Sized Agency: The Rochester Experience

**By
John McCluskey**

Introduction

This chapter explores the use of digital evidence from body worn camera (BWC) footage within the Rochester, NY Police Department (RPD) and the Monroe County District Attorney's Office (MCDA). The flowchart in Chapter 1 is used as a reference for describing the flow of data through RPD to the MCDA and for public dissemination in critical incidents.

Two aspects of BWC footage are emphasized here – the way that RPD uses the BWC for investigations and how the MCDA office has adopted a new system for managing the proliferation of digital evidence, especially BWC.

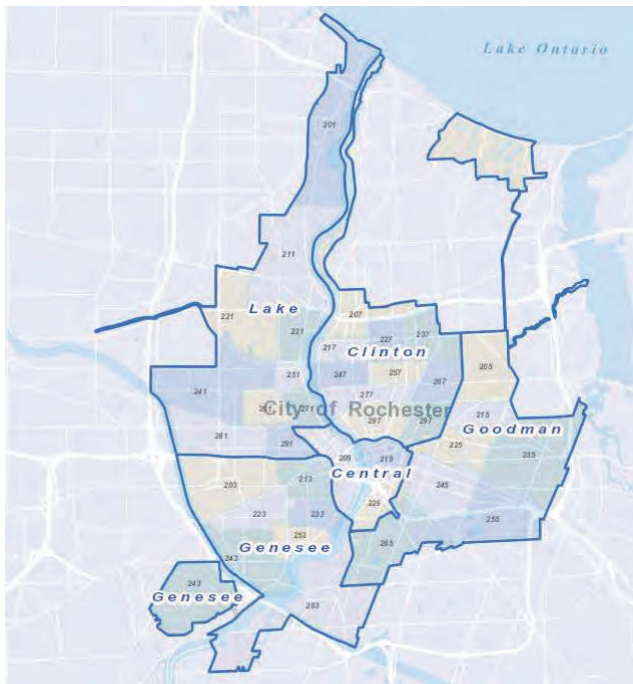
Interviews with key personnel and data obtained from agencies are used to trace the path of BWC from citizen encounters and crime scenes to adjudication.

Background

The City of Rochester is located in Monroe County in Western New York State. The 2019 Census estimates the city population to be 205,695 covering 35.8 square miles. The population is comprised of 36% White, 39% Black, and 20% Latino, with a poverty rate of approximately 25%.

The Rochester Police Department (RPD) is staffed by approximately 725 officers and was reorganized into five sections in 2015 to enhance decentralization and community service (Ciminelli, 2015; Rochester Police Department, 2015). The Department is divided into three bureaus. The Operations Bureau includes patrol, investigations, and special operations, the latter including the tactical, K-9, and traffic enforcement units. The Administration Bureau includes administrative and technical services, budget and personnel, and the research and evaluation section. Finally, the chief public information officer is the Captain of the Community Affairs Bureau which includes recruitment and oversight of the community policing unit. Major Crimes is a centralized unit responsible for investigation all homicides and officer involved shootings, while other crimes such as assault, robbery, and burglary are investigated by detectives assigned to the various sections.

In 2019 a civilian Police Accountability Board was established (City of Rochester, 2021) but the budget, responsibility, and powers of that entity are currently in dispute (Cleveland, 2021a; 2021b). Interim Chief David M. Smith currently leads the department, which has been under intense scrutiny since late summer 2020 after a series of critical incidents, including the death of Daniel Prude, and civil unrest (Sharp, 2021).



Crime in Rochester

Rochester experienced 32 homicides in 2019, for a rate of 15.5 per 100,000, or about three times the U.S. average. This rate is comparable to those found in the nearby cities of Buffalo (18.3) and Syracuse (13.3) in 2019 (Rodriguez, Altheimer & Klofas, 2020). FBI data from 2019 indicate that Rochester's overall violent crime rate of 748.4 and property crime rate of 3,471 per 100,000 is similar to those of Buffalo and Syracuse, but much higher than the U.S. averages.

Methods

For this chapter, five current investigators from Major Crime and the sections in RPD and two technical specialists tasked to the

MCDA's digital evidence management team participated in a series of structured interviews. Additional correspondence with assistant district attorneys (ADAs) via email was used to explain changes observed from a series of interviews conducted in 2018 with members of MCDA's office.

For statistics and numbers relating to RPD's use and flow of BWC videos, as well as the history of adoption, we worked with Lt. Michael Perkowski and Mr. Mian Saladeen within the RPD BWC program.

Body Camera Adoption

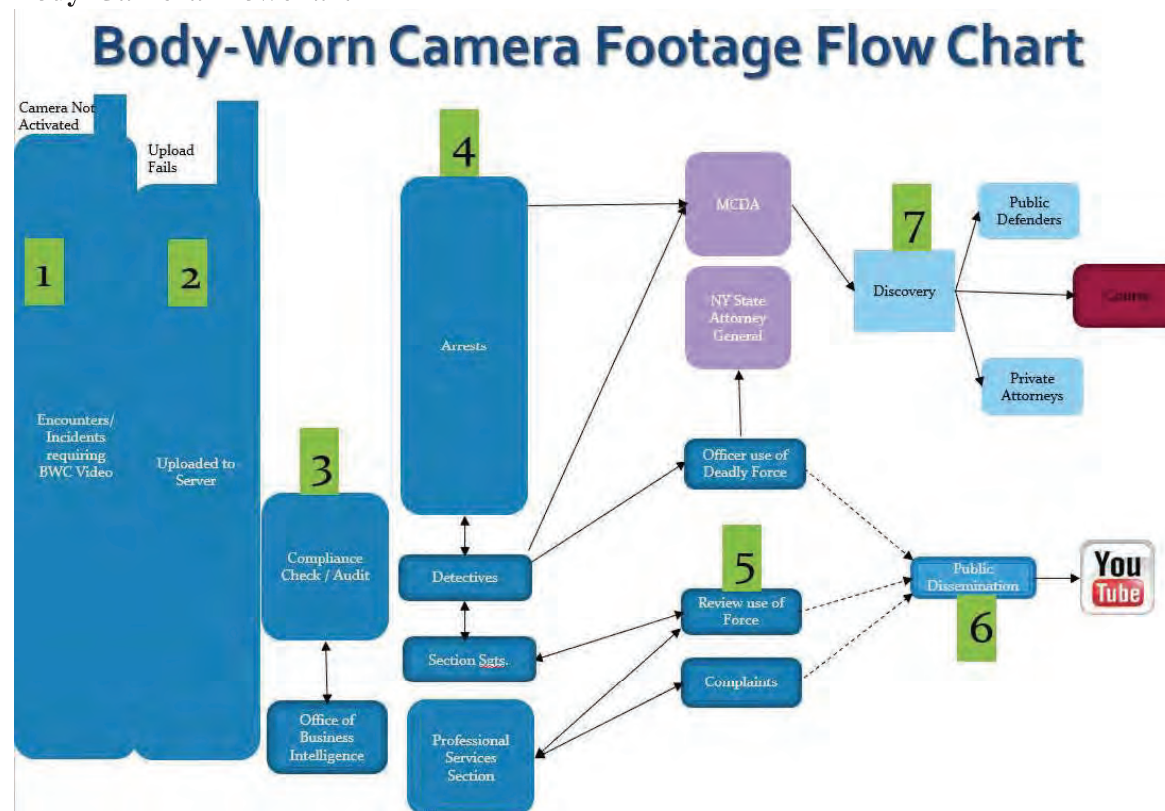
RPD first explored the use, costs, and best practices for BWC adoption in January 2014. This included public input solicited via survey regarding opinions about BWC, which indicated overwhelmingly positive support among city residents. Successful application for federal funding of BWCs yielded a grant of \$600,000 from the FY 2015 Pilot Implementation Program Grants announced in September 2015. The City, Department, and stakeholders commenced with a comprehensive implementation process (LeMahieu et al., 2018). This included establishing standard operating procedures for camera testing and evaluation. An RFP for proposals yielded a successful application from Municipal Emergency Services (MES) Lawmen Supply Co. as camera and software provider for the program. Soon after it was determined that the city would adopt its own server, with several petabytes of storage, rather than opt for a third-party cloud solution. At the time, prior to wider national adoption of BWC platforms, this was evaluated to be a cost-effective approach to managing the BWC video data.

Deployment of cameras started in August of 2016 in the Clinton section and was completed city-wide in March 2017 with approximately 500 cameras deployed. The Department allocated

resources for one Lieutenant and two civilians to staff the BWC program. The civilians include a Technology Application Coordinator and a Digital Media Specialist.

The MES M1G2 camera was replaced in 2018 with the Visiologix M1G3 camera, which included a recording buffer, increased storage, a new mounting clip to avoid cameras falling off, improvements in battery life, resolution, and low-light performance, along with magnetic docking.

Body-Camera Flowchart



The BWC footage flow chart highlights the general pattern of video through RPD internal usage and external stakeholders including the MCDA and public release of footage. Specific numbers of BWC files cannot be established as flowing through the system because the RPD Records Management System is focused on retrieval of videos associated with specific cases and not such a description. A solution that will allow for tracking videos, for example, as produced by each section, is currently under consideration as an upgrade to the overall digital evidence management in RPD and is anticipated to be an overlay on their on-site system. Nevertheless, the diagram tracks how data flows in theory. Through interviews we elaborate on how detectives use the footage from scenes and archival footage to develop leads. Below we also describe the use of BWC footage for adjudication and discuss the MCDA office's changing procedures and technology since the initial adoption by RPD.

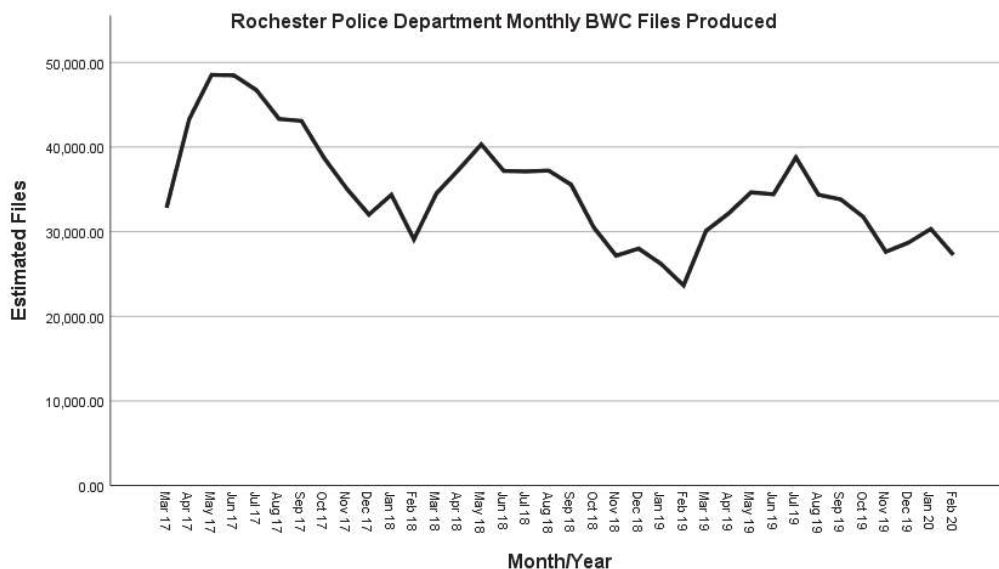
Activation

RPD officers are required to record video consistent with the following language:

“Members assigned a BWC will activate it and record all activities, and contact with persons, in the course of performing or when present at any enforcement activity, or upon direction of a supervisor. ***There are no exceptions to the requirement to record mandatory events.***”

Enforcement activities are defined as arrests, prisoner transports, pursuits, detentions/stops of persons and vehicles, and force. Activation is expected unless threat or danger make it impractical.

Figure 1: Monthly BWC files March 2017-February 2020, RPD



With regard to file storage, in March 2017 the RPD records management system indicated that 479 cameras produced almost 33,000 files and peaked near 49,000 in May 2017 with 474 cameras logged in use. Data obtained just prior to the onset of COVID-19 restrictions, in January and February 2020, indicated more than 500 cameras deployed and 27,000-30,000 monthly files logged in the system.

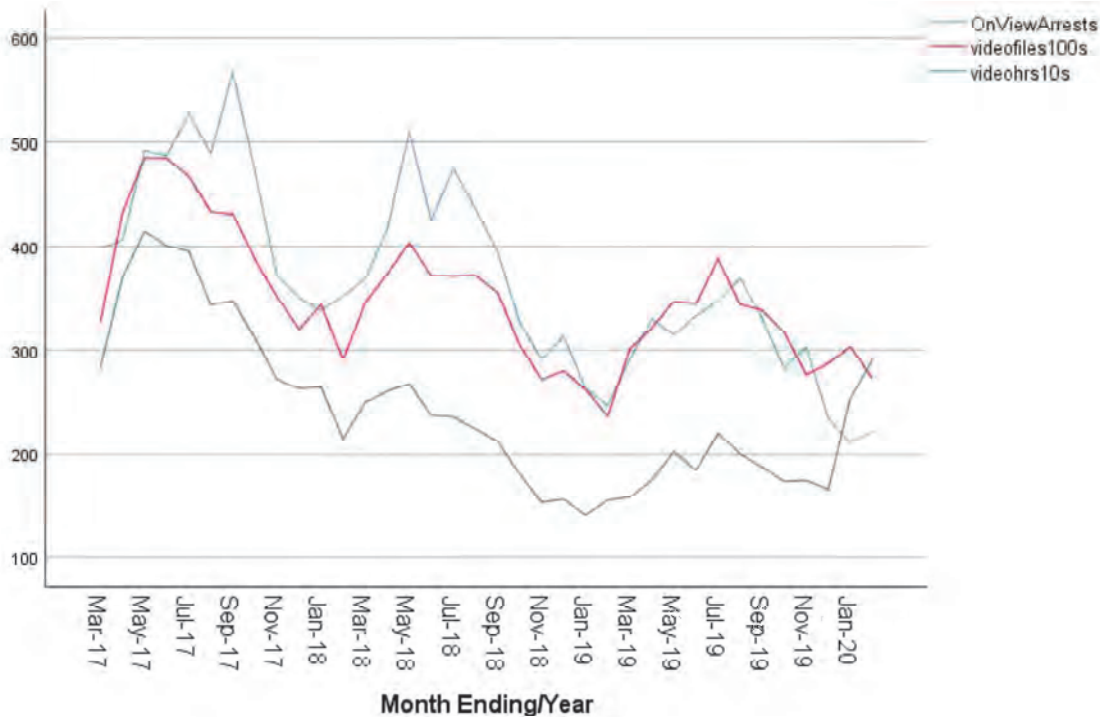
Figure 2: Monthly estimated hours of BWC video March 2017-February 2020, RPD



An overall trend of declining monthly hours of footage is also noted. Hours of video (estimated by the BWC program managers) declined sharply from about 4,000 in May 2017 (the third month after full adoption) to an average of approximately 1800 hours per month for the 12 months of January through December 2019.

Discussion with camera managers suggests that early on officers were “recording everything” and as time passed, they became more judicious in their use of the BWCs. Workload and interactions with citizens are also likely correlated with the BWC footage. This supposition was examined by plotting on view arrests, which are likely to be made by patrol officers, who wear most of the cameras deployed in the department. In Figure 3 we see video files (in the metric of 100s of files per month) and video hours (in the metrics of 10s of hours) plotted with the raw number of on view arrests (blue) per month. The trends track each other over time and yield a correlation with monthly arrests of .87 with video files and .72 with hours of video files per month from the period March 2017 through February 2021. This period is prior to the imposition of COVID-19 restrictions, likely further depressing contact with public.

Figure 3: Monthly On-View Arrests, March 2017-February 2020, RPD



Tagging and Retention: Managing data

The server and records management and retrieval system for RPD is heavily dependent upon categorization and tagging of videos once cameras are activated by officers at an initial scene. Three tags are expected, the crime report (CR) number, the address of the event and the appropriate category to identify the retention value of the video file in the system. Body camera categorical retention is based on 11 primary video categories – including felony offenses and arrests (25 years retention time), uses of force (10 years), stops (5 years), each having substantial retention periods. Most videos typically have 180-day retention periods if they are tagged in general categories. Secondary categories comprise 19 codes that can be applied to videos and include nine permanent retention categories (e.g., police use of deadly force, chief directives, prosecutorial requests), and ten timed retention categories such as Freedom of Information Law (FOIL) requests (two years), civil claims (25 years), and complaints (10 years).

Automated purges of data are related to the unclassified/general tagging; as noted, this initial officer action is important for archival and retrieval purposes. A year-long RPD audit of files in 2018, looking at traffic stops and field interrogations sampled weekly (N=2,383) suggests, at least in those two specific areas, a high degree of compliance and accuracy exist among sampled cases. In 96.4% of cases the camera was determined to have been activated, and in 93.1% of cases correct classification of the event was recorded in the system. A broader set of police activities than traffic and field stops comprises BWC usage and it is unclear if similar levels of compliance and accuracy are shared by other event types in which BWC archival/retention policy is triggered. A recent and ongoing examination of metadata for files indicates that tagging issues across all video is not-trivial, but at a level consistent with those reported above. This process of metadata review is linked prospectively to the anticipated adoption of a new system of

digital evidence management which will include enhanced video storage, organization, reporting and retrieval capabilities.

Camera evidence is available to be viewed by supervisors and ranks above unless, in a rare case, there is a video locked down and restricted. The crime report (CR) number is used to organize and retrieve BWC for detectives in Major Crimes and in sections. Below, the workflow of BWC in Major Crimes and among section detectives is highlighted.

Section supervisors review footage in cases of use of force and if a complaint or the chief's office requests review it is then examined by the Professional Standards Section (PSS). In a 2019 interview with a Lieutenant in PSS, he indicated that the standard for video review and tools for annotation, editing, and enhancement was not well-established and that he was reaching out to other departments in the region to establish procedures and protocols in this area. Video is redacted and posted for critical incidents on a YouTube channel by the City and/or Department, however, that video is unlisted on the site and the unique address is provided, most commonly, to media outlets upon release. In the fall of 2016, RPD officers had an encounter on Hollenbeck/Avenue B and the videos were hosted on the City/Department website, however that is no longer the process for release. Video releases for more recent critical incidents have tended to traverse the path of redaction and release to YouTube. One recent release of video involving the arrest and pepper spraying of a suspect comprised 109 minutes of BWC footage.

Finally, the video for investigations is now accessed and imported into the MCDA's office system. Below we highlight the transformation from original adoption of the cameras in 2017-18 to current practice.

Highlight: RPD Major Crimes Unit Investigations and Section Investigations

A series of phone and video conference discussions with several investigators and detective supervisors in the RPD Major Crimes Unit (MCU) suggests how BWC may yield novel resources for investigations. These interviews were followed up with parallel interviews of a Lieutenant, detective Sergeant, and an investigator from one section to explore whether the MCU experience generalizes to investigations of non-homicides. First, and most clearly, BWC is used as a source of data that the MCU compiles in a digital record to be forwarded to the MCDA's office in homicide cases. The MCU detective Sergeant indicated that BWC footage in most cases is provided as part of the documentation.

Several MCU investigators noted the value of video to establish a timeline of "what happened, when" that is independent of officer accounts and testimony. This was echoed by their colleagues in the sections. One interesting observation made among section investigators was that prior to BWC, tracking down and talking to an officer was time consuming given the volume of cases they handle. The advent of BWC affords the ability to examine officer footage asynchronously and to get a sense of what happened in a way that was not typically possible for section investigators before the adoption of the technology.

The MCU Sergeant noted that the BWC specific footage often makes up only about 10% of the electronic data that might be transmitted in homicide cases that are forwarded for prosecution. In

other words, cellphone, private video, transit system cameras, and public CCTV cameras are often sources of much more footage than BWC in MCU cases compiled for prosecution. This record is sometimes transmitted via portable drive, as fully electronic casefiles can be in the terabyte(s) range and not feasible for easy electronic transfer.

Section investigators said that the assemblage of the case files for the MCDA's office varied by size and amount of video (BWC or otherwise) depending on the case. Considering the range of cases handled in the sections (non-fatal shootings, burglaries, etc.) this variability in video amounts is unsurprising. The larger volume of cases handled likewise consumes time in producing video, of which BWC is only a portion (and often includes interviews, ring camera footage, surveillance) for discovery. The detective Sergeant from the section reported that a typical case would have about five megabytes of compressed/zipped video, but a shooting might have closer to two gigabytes of total video from all sources. The observation was that seriousness is correlated with the amount of video being compiled, but that the video comes from a variety of sources and not just BWC, consistent with counterparts in the MCU.

In terms of case presentation, the BWC provides context, such as the layout of a crime scene, the verbalizations of victims and witnesses and other valuable information for establishing a case. The utility of the footage for this evidentiary purpose was echoed by prosecutors.

The investigative value of BWC, as a source of evidence gathering, assessment, and (dis)confirmation of facts, was also highlighted by investigators. MCU and section investigators identified at least four use cases described and summarized here. First, BWCs memorialize reactions and the state of the scene on first arrival, which can often change by the time investigators arrive due to actions of other first responders such as fire and emergency medical personnel (items get moved, etc.). Further, background conversations of individuals on scene can sometimes yield useful information, even if the police on-scene are not talking directly to them.

The MCU detective Sergeant noted: "...in those initial moments of an investigation the officers themselves are not really aware of what transpired that led up to a homicide so their camera may be capturing people in the crowd, vehicles in the area, certain things being said that they wouldn't recognize as being important to the case but we would." The section detective sergeant also said that since police are often first on scene their camera captures the original state because, "sometimes you walk in and the place is trashed and you're like: Was there a big fight here? Then you realize that it was EMS moving stuff out of the way, so they could get to the victim - so that's helpful in that regard."

Second, factual information from crime scenes can be established as to whether and if it supports or refutes witness or suspect testimony regarding actions or conditions at a particular incident. This then can be used to help elicit further information and to aid in lines of questioning. Third, images of individuals captured on BWC can allow for individual identifiers to be traced back to prior footage. Specifically, someone might have previously been explicitly identified (name, address, etc.) in encounters as victims, complainants, or individuals involved in traffic stops. These positive identifications can be helpful in reinforcing investigative directions or establishing new persons to interview. The section investigators mentioned specifically that

showing video with suspects with distinctive clothing or accessories can aid in the interviewing process.

Information can also be indirect; sometimes the BWC on-scene can be reviewed to track down license plates, again providing possible links to specific individuals. Section investigators specifically noted that looking back at events that occurred in and around an address was sometimes a strategy for developing evidence. That is, if 123 Main Street, was the scene of a current crime, they would, under some circumstances, search the archive for prior events at or near that address in to develop information. Additionally, since section investigators handle a great volume of crime, they tend to find interrelationships between criminal cases, or a series of crimes that can be probed via BWC footage linkages.

Finally, the section sergeant previously had a camera assigned as a street supervisor and retained it as an investigator. Though not a standard piece of equipment among investigators it was reportedly used to take photos at scenes, make photos of documents, and to record situations where the investigators executed warrants. This is not a required use of the BWC but illustrates some ways in which BWC might be extended to such units, though in RPD BWC is not a use stipulated in policy for investigators.

In sum, the larger BWC archive of retained video represents a resource which, though not always accessed, sometimes yields particularly helpful lines of inquiry in developing MCU and section investigations. This is especially true when BWC information is paired with private security, blue light CCTV, and other video sources. In these instances, investigators are able to confirm the identity of offenders via triangulation of these sources. BWC is considered part of every investigation in the MCU and is similarly an important source for serious personal crimes such as non-fatal shootings investigated in the sections.

Highlight: Monroe County District Attorneys adopting new technology

The MCDA is an office of 80 ADAs led by District Attorney Sandra Doorley. In 2018, the MCDA' office participated in a comparative study of BWCs (McCluskey, Smith, Robertson, Uchida & Mosler, 2019). At that time, we found that the office was struggling with the new BWC technology and also concerned about a new state law governing discovery practices. Given an opportunity to follow-up three years later, the office provides an interesting case study to highlight how the management of BWC data can advance substantially over time. In the initial interviews of ADAs in 2018 there was a concern with the cumbersome assembly of BWC footage and concern for the new automatic or open discovery laws that were anticipated and then passed on April 1, 2019, and went into effect in January 2020 (Rodriguez, 2019).

Initially the MCDA extracted the files from RPD's servers and copied them to media (i.e., CD, DVD, Blu-ray disks). This was a slow process of file assembly because of limited availability of technology for large file viewing. This is illustrated by two of the ADAs interviewed in 2018:

ADA 1 2018: "Right now, we have one individual that will extract the footage from the body cams from the police department and then transpose it to a DVD or Blu-ray and then distribute them to that ADA. But like I said, there are a lot of

cases...I'd say any given month were typically taken in four to five hundred misdemeanor cases and then you have all the felony cases as well. So, it's something, it's just a constant workload to get all those transposed to DVD and Blu-ray.”

ADA 2, 2018: “We have to use a Blu-ray disc and then each of us don't have a Blu-ray player. So, we'll have to go loan it out. So, you know I might not be able to watch it that same day. You kind of go walk around or either go loan one out from our computer guy.”

In interviews with the two MCDA digital services coordinators in February 2021 we discussed changes in workflow in the office since the adoption of BWC by RPD. In 2020, they said, the office adopted eProsecutor, a solution which allows for assembling case materials remotely from RPD and seven police agencies with BWC for use from a centrally managed drive. (Two small departments in the county still submit data from disks that get uploaded manually).

The eProsecutor system is part of a suite offered by Journal Technologies to manage automation, workflow, and file storage and retrieval for prosecutors, courts, and court services. The BWC footage element ingested by the MCDA eProsecutor system in 2019 was estimated to amount to about 9 to 10 terabytes of footage associated with about 1,400 felony cases. The system interfaces directly with RPD's server and sweeps in the videos that have been tagged with CR numbers associated with the case. One notable feature of this system is that each of the police agencies has a BWC coordinator that acts as a liaison for MCDA when building a case file.

With respect to discovery, because the data are stored on a virtual drive, access to footage can be granted to the assistant district attorney (ADA), redacted if necessary, and shared with the defense attorney via an electronic link. In cases with particularly large amounts of data (> 1 terabyte) or with particularly large file sizes (> 4 gigabytes) discovery can be achieved by sharing portable drives with defense attorneys.

Informal conversations with ADAs during 2021 indicated that, though they were previously concerned about the burden of BWC footage and the time crunch that new discovery rules would impose, there was a sense of relief and strong support for the eProsecutor solution. This now allowed for the download and review of BWC footage and other video directly to their computers in common *mp4* formats, with easy access and organization of the entire case file.

Limitations and Challenges with Digital Evidence

The primary challenge identified in interviews with RPD and MCDA personnel was the organization, management, retrieval, and sharing of data. At this writing the RPD is working to enhance the data management system to create greater and easier accessibility. Answering questions such as “How many videos are recorded monthly by officer X, or in section X, or by a particular shift?” is currently not easily possible, but with a new interface and digital evidence management system in place it should be feasible.

A prospective project to work on metadata would likely require the incorporation of several RMS systems to link officers, shifts, supervisors to particular camera recordings. The scope of

such a project represents a non-trivial commitment of time and currently RPD is working with a local university to develop a retroactive solution for existing files while organization undergoes the extensive process for identification, adoption, and implementation of a new DEM system.

Interestingly, the MCDA's office illustrates what technological overlays can do for making the management of BWC and digital evidence generally much simpler for the end users. The office moved away from a disc-and-player-approach to a server and adopted the eProsecutor system. This allows for sweeping in video and other evidence in well-organized electronic files and has dramatically reduced chokepoints in workflow. Additionally, with new legal requirements sharing discovery files and the accessing and review of video is much easier and more efficient.

Though we focused here on BWC footage it is clear from both detectives and the technical personnel in the MCDA's office that footage from other sources taken in total, dwarfs the BWC footage that is in case files. This is an interesting consideration in light of the reputation that BWC has for making much more work in the case flow through to adjudication. While BWC adds a sizable percentage to a case, it does not represent the overwhelming amount of video submitted for review in case files in this jurisdiction.

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Chapter 6

Managing Digital Evidence: The South Florida Collaboration

By

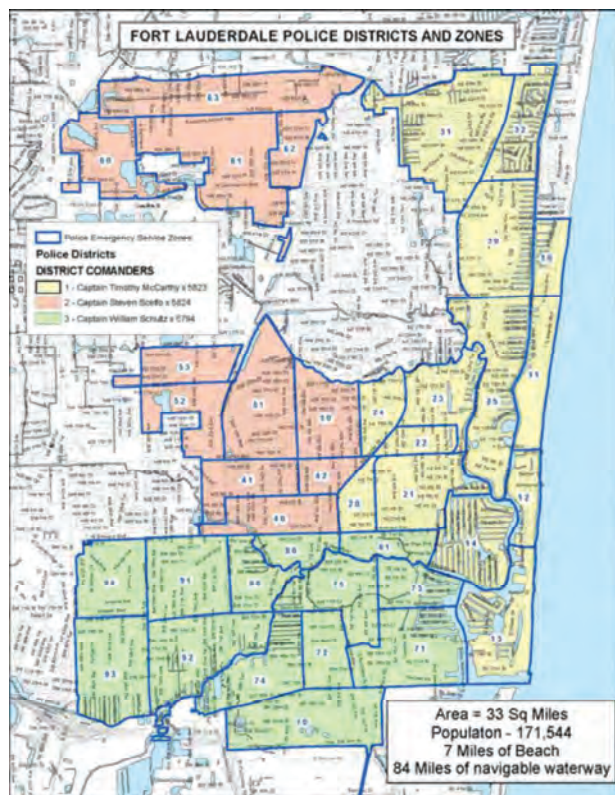
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Introduction

This report examines digital evidence management (DEM) within two agencies in South Florida -- the Fort Lauderdale Police Department (FLPD) and the Office of the State Attorney, 17th Judicial Circuit in Broward County (BSAO). Specifically, we looked at the use of BWC footage, and how video is managed and coordinated within and between these agencies.

In the process of implementing their BWC technology, the police and prosecutor have effectively engaged stakeholders in advanced ways. We highlight two key findings in this report: 1) the successful establishment of the South Florida Regional (turned state-wide) Collaborative BWC Meetings, and 2) their innovative community engagement efforts through the use of Axon Citizen.



Background

Fort Lauderdale Police Department

Fort Lauderdale is the largest and most densely populated city located in Broward County, Florida. It is comprised of around 180,000 residents across 33 square miles. According to the 2019 census about half of the residents are White (46.6%), 32.2% of residents are Black, and 18.5% of residents are Latino (US Census Bureau, 2019). The city had a violent crime rate of 601.8 and a property crime rate of 4,978.1 per 100,000 in 2019. Compared to the U.S. violent crime rate of 366.7, Fort Lauderdale experienced 64% more violence than the rest of the country. Fort Lauderdale's property crime rate was 135% higher than the national average for property crimes (2,109.9 per 100,000) (Federal Bureau of Investigation, 2020).

The Fort Lauderdale Police Department has served this community for over 110 years since its establishment in 1911. Currently, Chief Larry Scirotto oversees the FLPD which is comprised of 535 sworn officers and 74 civilian employees (Fort Lauderdale Police Department, n.d.). The department is divided into three districts: District I covers the northern and eastern sections of the city; District II spans the central and northwest area; and District III encompasses the southern half of the city.

The Operations Bureau is responsible for responding to calls for service. On average, the department responds to 200,000 calls for service per year and makes around 17,000 arrests (Fort Lauderdale Police Department, n.d.). The Department also has an Investigative Bureau made up of three divisions including the Criminal Investigation Division, Special Investigation Division, and Street Crimes Division. The last bureau is the Support Services Bureau which contains the Facilities Division, Records Division, Administrative Support Division, and Budget and Finance Division.

Office of the State Attorney, 17th Judicial Circuit, Broward County

Broward County is the second largest and most densely populated county in Florida. It spans 1,444 square miles and has a population of 1.95 million people (US Census Bureau, 2019). Broward is a racially and ethnically diverse county with 34.8% White, 31.1% Latino, and 30.2% Black residents. According to the Florida Department of Law Enforcement, Broward County had a violent crime rate of 381.9 and the property crime rate was 2,605.5 per 100,000 residents in 2019.

The Office of the State Attorney, 17th Judicial Circuit in Broward County is led by Harold F. Pryor (Broward County State Attorney, n.d.). Elected in November 2020, State Attorney Pryor oversees an office of approximately 525 employees including 213 prosecutors as well as investigators, victim advocates, and support staff. As Broward County is one of the largest counties in the state of Florida, the office coordinates its cases with 16 different municipal law enforcement agencies and the Broward County Sheriff's Office which also has 16 districts including the Courthouse and Airport/Seaport.

Methods

For this report we collected information and data to assess the use of body-worn camera footage. First, we interviewed key personnel related to the body-worn camera administration and coordination within the two agencies. These include the current Body-Worn Camera Administrator at FLPD, the Digital Evidence Unit Supervisor at BSAO, and support staff. Five in-depth interviews were conducted over the course of this project. These meetings were conducted using online technologies, such as Zoom, due to the in-person and travel restrictions caused by the COVID-19 pandemic.

Next, we obtained statistics, baseline information, and reports directly from FLPD and BSAO personnel. This information provides additional context to the amount of digital evidence and data collected and managed by these agencies. Finally, we attended three South Florida Regional

Collaborative BWC Meetings. We documented the purposes, goals, and observations of these meetings and have identified key takeaways which will be discussed later in this report.

Findings

BWC Adoption

Prior to the adoption of BWCs within the agency, there were concerns from city officials over the impacts this technology would have on the city of Fort Lauderdale. In 2016, city officials were apprehensive about issues relating to privacy as well as the costs of utilizing body-worn cameras for the Department (Barszewski, 2016). Ultimately, the FLPD, city officials, and the community understood the importance of this technology and the commitment needed to implement a successful body-worn camera program.

In December 2018, FLPD officially launched its body-worn camera program. Before implementing BWCs department wide, FLPD conducted a year of testing and evaluation of the technology with 35 of its officers (Trischitta, 2018). Members of the FLPD reviewed various vendors and products to ensure they purchased a camera that was suited for their needs. As part of this effort, FLPD solicited feedback from its officers on the cameras to identify any issues or challenges with the technologies. Upon completion of the testing, the FLPD selected to use the body-worn cameras from Axon Enterprise, Inc.

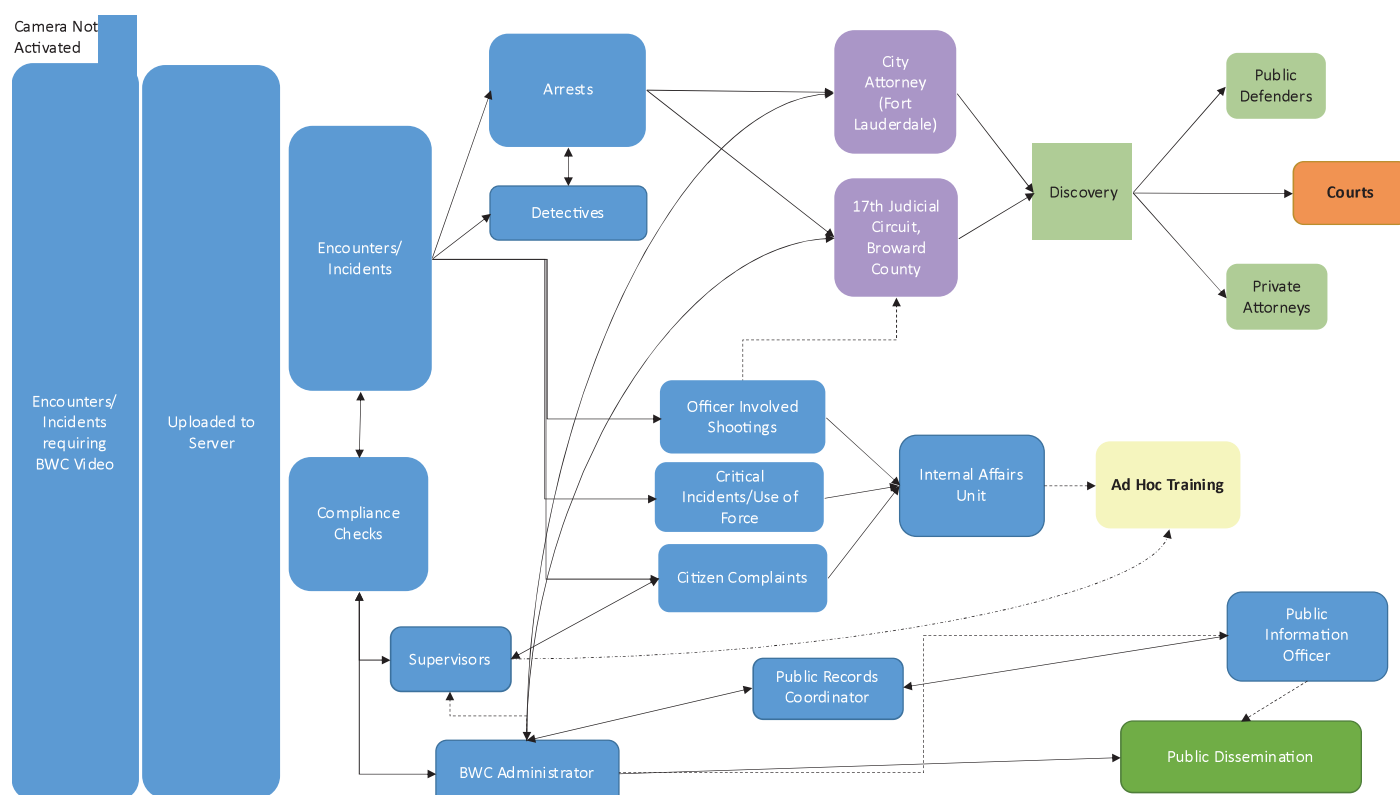
Currently, the FLPD has 535 active users of the *Axon Body 3* cameras. They have approximately 1,100 BWCs, which equates to approximately two cameras per officer. Over the four-year period these cameras were estimated to cost the agency around \$4 million. A \$600,000 grant was also provided by the Department of Justice to help support these costs (Trischitta, 2018).

Within the FLPD Support Services Bureau, Administrative Support Division, there is a small unit, called the Body Camera Unit. It is comprised of a BWC Administrator who is a retired officer, currently working in a non-sworn role, as well as her two non-sworn support staff.

The Flow of BWC Footage

As part of the DEM project, we established flow charts to illustrate how body-worn camera footage flows through the criminal justice system. The flow chart begins by identifying how footage is collected and used within the police department; however, it goes beyond the police department into its impacts of BWC footage on prosecutors' offices and the courts. The chart, shown in Figure 1, describes how this process works specifically for the FLPD and is described in detail below.

Figure 1. FLPD Digital Evidence Management Flow Chart



Activation and Upload

An agency's BWC policy provides the framework and the foundation for how officers will activate, use, manage, and maintain their BWC footage. For FLPD, their first body-worn camera policy was drafted in December 2017. Because the agency has deployed BWCs for several years, changes in policy decisions and practices have occurred over this time. Their official policy has undergone six revisions, with the current policy in existence since October 2020.

FLPD policy states that all sworn staff members below the rank of lieutenant are required to use department-issued BWCs while engaged in field activities. They must have their BWC powered on and in pre-recorded (buffer mode)¹ while on duty, working off-duty details, or while in uniform operating a marked vehicle. Prior to engaging in law enforcement activity with the public, officers are required to activate their BWCs, provided that the activation does not compromise their safety or the safety of others. (See Appendix 3 for the FLPD policy).

According to their policy, once the BWC is activated to record an interaction, the camera remains on until the event has ended. While this seems straightforward, the agency does allow officers discretion in their recording. The policy further indicates that if it becomes necessary to turn off the BWC prior to the conclusion of an event, the officer shall verbally record the reason

¹ Standby Mode (Deactivation): The BWC is powered, but is not recording. The BWC is maintaining a 30 second pre-recorded video buffer, in the event it is activated, the previous 30 seconds of video will be included in the recording without audio.

prior to the deactivation, if it is safe and practical to do so. This deactivation can occur for a variety of reasons. For example, if/when an officer needs to discuss how to handle a specific incident or investigative strategy, possibly with another officer or supervisor. In these instances, the officer is allowed to deactivate the BWC and resume recording upon the completion of that discussion. From the DEM side, this has impacted the way in which data is collected and analyzed since any event could have multiple videos from one officer.

Once the encounter has ended, the officer must deactivate the camera, provide the details of the event, and categorize each video accordingly. Then they must physically dock and upload the video into Evidence.com to be kept within their BWC vendor cloud storage system. Policy prohibits them from utilizing the SYNC cable to upload media from their MDTs or other device. The uploads must be done at least once every shift and prior to the end of the shift if any of the footage has evidentiary value. They can also upload any other evidence collected through the use of Axon Capture through Wi-Fi technology. Officers must also follow the department's Digital Evidence Procedures which provide detailed information on upload practices, definitions, and improper handling or misuse of footage, etc. (See Appendix 3).

As part of the process to associate footage and their corresponding events, the FLPD uses agency case numbers and has 100 different tagging categories.² Each one of these categories is associated with a specific retention length governing the length of time the event will remain stored in their cloud storage system. Retention duration is determined by state laws as well as FLPD policy decisions. These retention lengths range from 90 days to what they refer to as "Until Manually Deleted." A breakdown of these categories is shown in Table 1 below.

Table 1. Retention Time Period for FLPD's BWC Footage Tagging Categories

Retention Time	Total Categories
90 Days	8
1 year	3
3 years	1
4 years	20
5 years	13
8 years	33
13 years	1
Until manually deleted	21
Total:	100

In 2020, the total number of BWC videos collected by FLPD officers was 270,950. To provide additional context to this number, we examined how many videos were recorded in one month's time. For the time period of June 1-June 30, 2020, officers uploaded 20,791 body-worn camera videos. That is an average of approximately 693 videos per day. While these videos include various types of incidents, encounters, and arrests, the exact number of each associated with these videos is difficult to quantify. This discrepancy is because of the number of videos accompanying each incident. In some cases, multiple officers are responding to the same

² For a comprehensive list of these categories, please see Appendix 3.

incidents, and also, multiple recordings occur during a single incident due to FLPD's start/stop activation policy.

By the end of 2020, the department was using 5.027 TB of storage. While this storage number may seem small compared to similarly sized departments, it is important to consider how the length of retention categories significantly impact the amount of storage used by an agency. For example, in FLPD, if a video is tagged as a '10-50 Traffic stop - warning,' then it will only be retained for 90 days within Evidence.com before it is automatically deleted. This illustrates the importance and need for officers to tag the videos correctly as the footage can be purged if not correctly tagged.

As for challenges in uploading the videos to the Evidence.com platform, FLPD did not report any issues. However, they have had 285 self-reported BWC not activated and seven not-reported but subsequently discovered BWC non-activations. These are not issues within the technology or systems but represent some of the challenges that can occur with officer compliance. This issue will be discussed further in the subsequent section.

Further Review: Compliance, Arrests, and Use of Force

FLPD conducts periodic audits of the officers' BWC videos to ensure that officers follow agency policies and procedures in accordance with §943.1718, Florida Statutes. These audits also help to address any system issues and to identify potential training opportunities. For the supervisory reviews conducted in Axon Performance by the lieutenants, the goal of the agency is to maintain a marker level of approximately 80% compliance. For this report, we collected audit information from the month of June 2020. Among the three districts, District I had an average of 62%. District II had an average of 57%. District III had an average of 68%.

One of the challenges that FLPD has encountered with its audit and review process is that they rely on the county dispatch system to deploy their officers to a call. However, if there is a change within the status of the call, it does not get updated within their Axon system. This creates frequent discrepancies between these two different databases. FLPD sought to implement a better strategy for this and has worked directly with their vendor on its development. Through Axon Performance, efforts are underway to address this issue, provide more efficient use of resources, and lessen the time that supervisors spend on reviews.

Daily reviews by the BWC Administrator and her team have also improved the accuracy and management of the footage. These checks are done to ensure that all the videos uploaded into the system have the necessary information including the appropriate tags. When the BWC administrator first began working for the Department in March 2019, the Department had 850 outstanding tagging issues. It took two months of dedicated time and resources for her to reduce the number of outstanding tagging issues to 40, a reduction of 95%.

The BWC administrator and team continue to address tagging issues daily. As part of their review process, they reach out directly to the officers by sending an email to have them address the issues. The officers usually respond quickly; however, if a week passes and it is still not addressed, the BWC administrator will then contact the officer's sergeant for follow-up. This

method has proved to be a success for FLPD and has helped them keep tagging issues to a minimum, allowing for more accurate identification and appropriate retention lengths of their BWC videos. This also improves efficiency in their sharing of evidence to the State Attorney's Office in a timely manner.

While BWC footage has been beneficial in compliance practices for agencies, one of its other primary goals and uses is for evidentiary value. If the video contains footage of an arrest and/or includes information to help build a case, it is flagged within Evidence.com by the officers. It can then be shared from the BWC administrator to the appropriate detectives and/or designated units. Detectives are approved to access the videos, but they must do so for investigation purposes only. They are able to look up by CASE ID in Evidence.com anything that they are currently investigating.

As for footage that involves critical incidents³, the BWC and footage are provided to supervisors for review. According to FLPD policy, in these circumstances department members equipped with a BWC that captured the incident shall notify a supervisor as soon as possible. The lead investigator will coordinate the response and will retrieve the BWC from the officer and process it according to the agency's evidence handling standards. In 2020, FLPD implemented a new policy that *all* use of force incidents captured on BWC must be reviewed by the Department's Internal Affairs. At the time of this report, the exact number of use of force incidents reviewed by Internal Affairs was not available.

In addition to their own review, Internal Affairs also sends certain cases to their Citizens Police Review Board (CPRB) for their review and recommendations. The CPRB was established in 1994 and is comprised of six volunteers from the community and three individuals from FLPD. Since October 2020, the CPRB has received information on and reviewed eight cases that included BWC footage. The BWC administrator is responsible for sharing the BWC footage to the members of the board through an email link. In one particular case, involving the civil unrest and protests of 2020, there were over 500 pieces of associated evidence. This required the BWC administrator to spend 100 hours on review and redaction - just for this one case.

For officer-involved shootings, BWC video footage needed to review the incident is collected from the FLPD officer(s) and any other relevant footage. The review is then conducted by FLPD's Internal Affairs Unit, any investigating agency such as FDLE or the Broward County SAO. From January 1, 2020- July 15, 2020, six officer-involved shootings occurred in which the footage was collected and reviewed.

Community Engagement: Public Release and Axon Citizen

BWC Public Release and Records Requests

In recent years, the public demand to access body-worn camera footage has drastically increased. Like many law enforcement agencies, the FLPD has become inundated with requests for BWC footage. In 2019, the agency had received 776 public records requests which initially required the BWC administrator to burn any information and digital evidence to CDs. In 2020, FLPD

³ FLPD's definition of critical incidents can be found in Appendix 3.

received 943 requests, 505 (54%) of which required the release of digital evidence and BWC footage. And as of October 2021, FLPD received 961 requests, of which 660 (69%), required the release of digital evidence and BWC footage. To address this demand, FLPD developed and implemented an efficient and coordinated process to address public records requests.

At FLPD, the BWC Administrator is responsible for the release of all body-worn camera videos to the public. One of the biggest challenges in managing these requests is the time and resources that are incurred in this process. To ensure that the videos are released in a timely manner is difficult especially when the department also must redact any captured statutory exemptions prior to public release. Most recently, the state of Florida enacted new legislation, Marsy's Law⁴ which is aimed to protect victims' rights, including maintaining the privacy of the individual. Little guidance has been established on how to follow this statute and its impacts, particularly with BWC footage. Agencies are still in the process of identifying best practices to address this statute.

Relying on the guidelines established in their BWC policy, the BWC administrator and team review every video that will be released and then redact all statutorily exempt information. The time that it takes to redact the necessary frames ranges extensively. It can take a couple of hours, or it can take up to several days, even weeks, for a staff member to complete this depending upon the video length, number of videos involved in an incident, and which portions of the video need redaction. Once the process is complete, the video is then shared through an email link to the requestor to access and view the requested footage.

Another important component of this process is that the BWC Administrator works directly with the Public Records Coordinator and Public Information Officer to ensure coordination within the department. Because BWC footage that is released can often be interpreted differently by the public, it is important that the Public Information Officer understands the contents of the released footage, the timing of the release, and is able to address any questions, concerns or issues that may arise from the footage. While FLPD has not proactively released any BWC footage to the public to date, the Chief has the authority to do so when deemed necessary.

As a final part of their FOIA process, FLPD has established another innovative practice in releasing BWC videos. The BWC Administrator created a tagging category, "Public Records Request," for any video footage that is released to the public. This video footage will remain in the server until it is manually deleted, or *indefinitely*. This approach was identified as a way to keep track of what was provided to the public and ensure the integrity of the video footage. Because the agency maintains the original footage and the vendor certified audit trail, FLPD will be able to demonstrate its transparency and accountability to the community.

Axon Citizen

In addition to footage released by FLPD, the agency manages and reviews videos submitted to their agency from members of the community. In 2019, FLPD began using Axon Citizen which has two unique features to engage the public. These two features are called "Citizen Evidence" and "Public Portal." Axon Citizen is made available through their vendor and is a secure, public

⁴ For more information on Marsy's law, please go to <https://www.marsyslawforfl.com/>.

facing portal that allows members of the community to upload footage, photographs, surveillance videos, or any other type of digital media they have collected. This information can be as important as BWC footage as it may provide additional context or evidence to an investigation or event.

Through Citizen Evidence, a member of the community can seamlessly provide information to FLPD about a specific case, crime, or concern of theirs. The link is shared to the individual from the BWC administrator or directly from an officer. The individual then clicks on the link, and from there, he/she can upload any digital media for the police to view. This could include surveillance video from a store clerk in reference to a shoplifting case or an individual's personal video of a fight that he/she witnessed and recorded. According to the BWC administrator, this streamlined process has been "fantastic" and provided efficiencies from the evidence collection and management side.

Since 2019, FLPD sent out 13,500 Citizen Evidence links, and approximately 60% have responses and uploads. One of the challenges noted by FLPD is that the links are only active for 72 hours and cannot be extended. Often times, people do not complete the submission right away and therefore do not seek to reach out for an updated link. Staff from BSAO reported that they are currently working with the vendor to adjust the vendor's default setting on the time limitations for the links.

While Citizen Evidence collects information from the community through personalized emailed links, the Public Portal feature takes a broader approach to capture information. FLPD can establish an open portal when they are seeking assistance and information from the public on a specific event or crime. Similar to Citizen Evidence, the information can be easily uploaded through a link. However, in this feature, the community can access the link from the FLPD's website, social media page, news outlets, or wherever else the Public Information Officer disseminates it. FLPD has used this particular feature twice – once to collect information regarding a homicide and another time to collect information regarding the protests of 2020.

BSAO also touts the use of Axon Citizen, and their sharing processes are done in a similar method. The Office encourages its staff to use this feature in order to obtain additional information for their investigations and cases. To date, the BSAO has shared 689 links to support their cases.

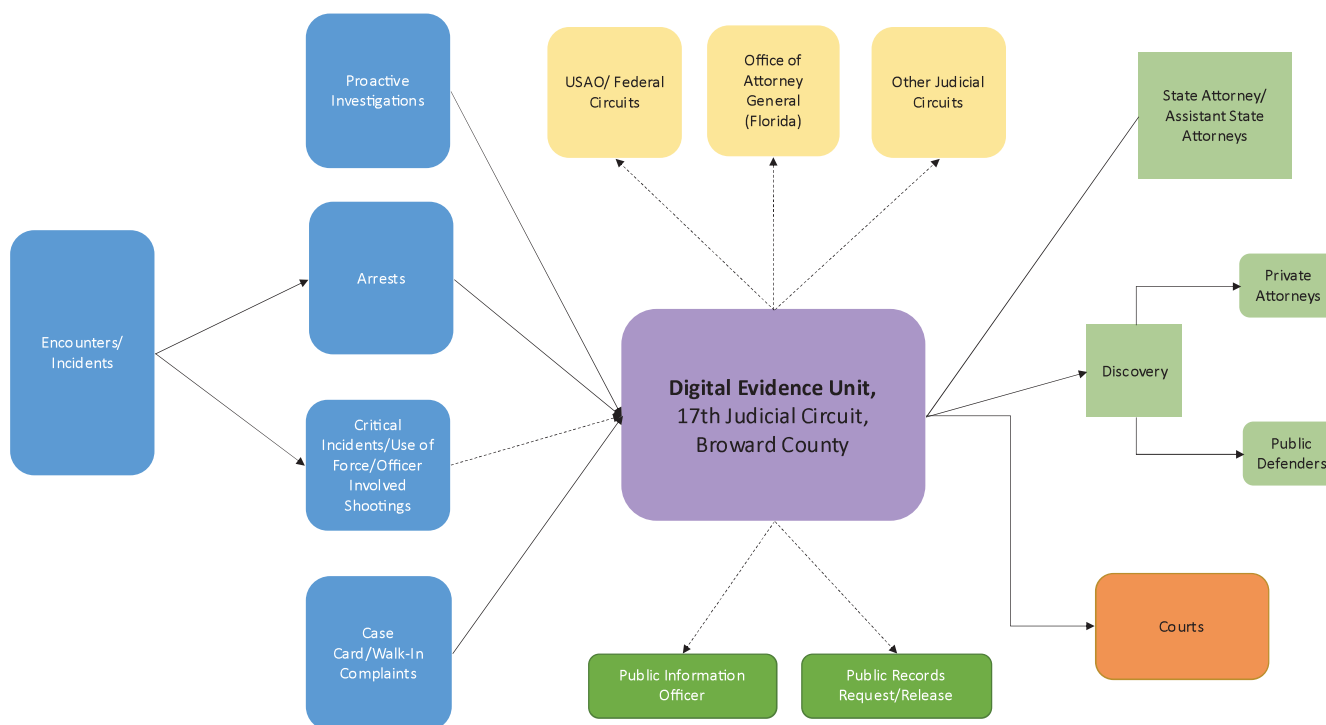
Axon Citizen provides community members a secure, user-friendly way to assist law enforcement without having to speak directly with them or be seen with them. In a culture where fear of talking to law enforcement and "don't snitch" mentalities exist, this feature provides an outlet for community members to help police and prosecutors without the fear of repercussions. Members of the community can trust that FLPD and BSAO will use the information to help and protect their communities. This tool is helping to strengthen and develop relationships among the community and law enforcement in South Florida.

Step 7: Prosecution

As the last step in the FLPD's flow chart, we examined how the agency shares its BWC footage for prosecution with the City Attorney's Office as well as the Office of the State Attorney, 17th Judicial Circuit in Broward County. FLPD shares footage with The City Attorney's Office related to municipal ordinances and select misdemeanors. However, the majority of FLPD cases are sent to the Office of the State Attorney, 17th Judicial Circuit in Broward County (BSAO) for all its felonies and other misdemeanors. Because FLPD is a *partner agency*⁵ with these offices, sharing the files electronically through the Evidence.com platform is an efficient process completed through the BWC Administrator. Once the files are shared, responsibility shifts to the prosecutors' office to determine how the footage will be used in their cases and case filing decisions.

In the previous sections of this report, we focused on the use of BWC footage and DEM within the FLPD. This section focuses on BSAO and how digital evidence is used by their agency. Within the BSAO, there is a Digital Evidence Unit (DEU) which is comprised of a supervisor, two support staff and one IT consultant to manage all digital evidence that enters their office. The BSAO flow chart is shown below in Figure 2.

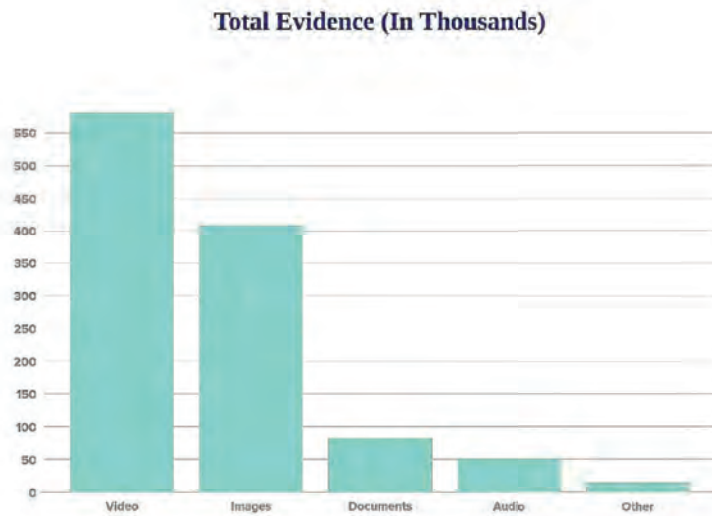
Figure 2. BSAO Digital Evidence Management Flow Chart



⁵ Law enforcement agencies who use the Axon platform can become “partner agencies” within Evidence.com. This means that if both agencies enter into an agreement or “virtual handshake,” they can share and access specific videos between them, allowing for an easy and efficient process.

The types of digital evidence managed by the DEU include body-worn camera footage, 911 calls, in-car videos, audio files, surveillance videos (CCTV, home security, etc.), drone footage, pictures and other types of digital evidence. Figure 3 highlights the amount of digital evidence collected, stored and maintained by the DEU. From January 2016 to September 2021, the office used 282.22 TB of storage, 97% of which was video footage. Housing and storing this information has presented new, unanticipated costs for the Agency.

Figure 3. Total Evidence Used by the BSAO from January 2016 – September 2021



The BSAO also has to ingest BWC footage from each of the law enforcement agencies operating within their jurisdiction. As stated previously, this includes the Broward County Sheriff's Office as well as 16 different municipal law enforcement agencies. While the majority of these agencies use one BWC vendor (Axon), not all of them do. Furthermore, some agencies have changed vendors over the years. This means that the BSAO has

had to adapt to the different BWC vendor platforms and setup policies and procedures to collect this footage across multiple agencies and multiple systems. Although they have been successful at implementing effective DEM strategies, it can be challenging and requires efficient coordination.

Each type of evidence, specifically BWC footage, is routed through the DEU. One of the main challenges they encounter is the integration of the different digital media types listed above, non-standard formatted videos, and accessibility to software. Converting and running the different types of proprietary media requires additional expertise, costs and resources.

For this report, we obtained county-wide information to fully understand the amount of information for which the DEU is responsible. The total number of evidence files is 1,443,850 as of September 30, 2021, and those pieces of evidence are currently associated with a total of 110,735 cases. Most recently, the DEU supervisor noted that they can receive around 700-800 files for just one case.

When asked how many cases that currently involve BWCs, the DEU supervisor noted that probably 95% of the cases have some form of BWC footage associated with them. Table 2 shows the amount of video footage that has accumulated since January 2016.

Table 2. Video Footage Stored by BSAO from January 2016 – September 2021

	Total
Number of Videos	697,000
Hours of Videos	236,764
GB of Videos	394,608

The above information is county-wide. To contextualize the data, we look specifically at the number of videos shared by FLPD. From June 1- June 30, 2020, the BSAO received 29,502 BWC videos countywide, and 7,176 of those videos came from FLPD. This means that nearly a quarter (~24%) of those videos come directly from FLPD. During that same time, there were 1,180 cases initiated county-wide, and 454 cases of those cases were from FLPD. Of all BSAO cases initiated during that month, the FLPD cases comprised approximately 38% of them.

The DEU maintains all this information, but it is shared and accessed by the assistant state attorneys (ASAs) within the Office, divisions, and specialized units. In specific instances, the DEU is responsible for coordinating BWC footage with the USAO/Federal Circuits, Office of the Attorney General (Florida), or other Judicial Circuits for more appropriate case processing. The DEU is tasked with sharing links to the evidence and makes them available for discovery to the public defender, private attorneys, or self-counsel.

Impacts of body-worn camera footage within the BSAO

It is clear that BWC footage has impacted modern day prosecution. Because of the amount and use of BWC footage, the DEU supervisor said that BSAO has experienced a significant increase in plea bargains. Cases with digital evidence are resolved more frequently prior to trial and/or through pretrial diversion programs. This has lessened the personnel time and resources related to these cases. However, the DEU team did note that there has also been an increase in the staff time to review footage and complete the case filings. While there is currently no mechanism to track how much of the video footage is actually viewed by ASAs, the expectation within the office is that they watch all relevant footage for their case.

To keep current with the data and policies, the DEU team also works to identify innovative best practices and create efficiencies within their office operations. The DEU team conducts periodic training with others ASAs and support staff to keep them informed on the newest technology advancements within their systems. They also continue to review issues and address any updates on policies and procedures.

When it comes to trial preparations, the DEU is responsible for sharing the digital evidence to the courts directly. While they have made some advances in the use of virtual platforms due to the COVID-19 pandemic, the courts' systems and capabilities have not caught up with the current technologies. The DEU staff burn copies of CDs and delivery them via courier for videos to be played during trials. As prosecutors' offices and police departments continue to advance their knowledge of DEM systems, the DEU supervisor noted that the courts often have the fewest resources. The courts are not only the end of our flow chart, but it seems they are often the last ones provided the capabilities to implement these DEM systems.

South Florida Regional Collaborative BWC Meetings

To better understand the coordination of DEM in these agencies, we observed three South Florida Regional Collaborative BWC Meetings. One of the main reasons for the efficiencies within the BSAO and FLPD has been the formation and use of regional meetings with neighboring law enforcement agencies. The successful collaboration of digital evidence management that occurs in South Florida has evolved over several years of law enforcement agencies working together to proactively identify and assess the issues related to the implementation and advancement of their body-worn camera programs. When it comes to establishing and running a body-worn camera program, law enforcement agencies have learned that the *'devil is in the details.'* To best address these details, a collaborative and supportive approach is essential.

Beginning in December, 2017, FLPD has led the efforts to connect other law enforcement agencies within South Florida through collaborative discussions on how to best implement and use body-worn cameras within their agencies. At the onset of these meetings, neighboring departments were in various stages of their BWC programs. Some agencies had purchased the cameras and established their BWC programs. Others were in testing and evaluation of cameras or policy development. Some agencies were still considering the feasibility and value of a BWC program within their agency.

By establishing an open exchange of information through these meetings, the South Florida Regional Collaboration was able to address key concerns and issues related to BWCs. They were able to agree upon and adopt regional practices for the evolving state statutes and regulations as well as assess emerging trends within the BWC technologies. These meetings help to share valuable insight on BWCs and more specifically, they provide examples of the experiences, needs and lessons learned from each of these agencies.

In our observations, we noted that what is most valuable in these meetings is that they do not serve as a general discussion on body-worn cameras or digital evidence. These meetings tackle current issues and roadblocks the participating agencies encounter on a daily basis. They raise questions on how peers have successfully and logistically shared footage within their DEU systems. They have inquired about processes on how to best coordinate these videos with federal agencies like the FBI and state agencies, such as FDLE. Discussions have identified bottleneck issues in the county-wide workflow and then instantly initiated a new strategy to prevent it going forward.

Questions on what to do about Marsy's law have been raised. Since all Florida agencies are subject to the same state regulations, they look to each other to learn how to comply with the mandates and implement agreed upon best practices. And given that the prosecutors' offices attend these meetings, there can be an open dialogue on what is expected from both agencies. This helps in assessing regulations and improving practices within the entire criminal justice system.

Furthermore, the agencies provide insight into their experiences with the ever-evolving technologies, including vendors, tools, systems, and platforms and if they are practical, useful

and valuable. They identify the challenges with their technologies and programs and seek guidance from agencies who have overcome these. They ask: What approaches have they used? What resources were needed? These meetings allow agencies unfiltered communications on the different technologies; and therefore, they are more informed on the expectations and realities of the technologies that currently exist. Agencies can then use this knowledge in their discussions with vendors. They can ensure they are obtaining the products and services they need and not simply what the vendor is marketing. All these types of questions, issues, concerns, are not only permitted but encouraged among all participants.

When the COVID-19 global pandemic began, challenges and restrictions to on-site and in-person meetings affected the group. Members of the FLPD and BSAO knew the value of these sessions and decided to not cancel these meetings. They continued these meetings through the use of online meeting platforms. Members of the regional collaboration continued to participate and engage in these information sharing efforts.

Although the use of virtual meetings is not always ideal, one unanticipated benefit was that the group could expand its participant list across the state of Florida. So, it was no longer South Florida law enforcement agencies and prosecutors that were invited and participated, but rather agencies from all over the state of Florida were able to attend, obtain BWC knowledge, and share their experiences. The regional group had grown to a state-wide collaboration.

The goal of this collaborative effort was to establish coordination among the law enforcement agencies seeking to implement and better understand their BWC programs. With FLPD and BSAO leading these efforts, departments across the state have been able to more successfully implement and continuously improve their BWC programs. These meetings have promoted the transfer of knowledge, improved communication efforts and provided an increased and deeper understanding of technology. These agencies have created a model for collaboration which other states and regions should develop to better serve their departments and jurisdictions.

Recommendations

Through our discussions and interviews with the FLPD and BSAO, we have identified several challenges and recommendations to implementing BWC programs and DEM systems.

Recommendation 1: Create a series of trainings on public release of BWC footage

For FLPD, in particular, a significant challenge has been the lack of training specifically related to Florida laws and guidance available for the public release of the BWC footage. Questions like when and what are they required to release? What needs to be redacted and under what circumstances? What are the impacts of new state statutes and legislation? Because this is an evolving area for body-worn camera footage, best practices and standardized policies have yet to be established. The ground rules are unclear for law enforcement agencies. They must balance addressing the public requests and providing agency transparency with protecting statutory exemptions-and the privacy rights of victims. Although we examined these issues specific to Florida, many law enforcement agencies across the country have requested this type of training and technical assistance. We recommend the creation of targeted trainings specific to each state

to best address their concerns about public release. This information is critical to maintaining a successful body-worn camera program that is supported by its community.

The BSAO has also faced similar challenges specific to public release and redaction. Redaction, in particular, for the office has been a challenge because of the technology and resources available to them. Furthermore, the BSAO also has to access and use proprietary software for the multiple types of digital evidence that they receive. Often, the conversion process from these proprietary formats incurs a lot of time and uses significant resources. Unfortunately, this remains a hurdle for their office.

Recommendation 2: Provide assistance to courts to implement video review systems

According to the BSAO, the courts also need support and assistance on managing and using technology related body-worn cameras. The DEU supervisor would like to see more accommodation for the courts and have them integrated more too. He recommends that vendors implement DEM features or a dedicated platform for the Judiciary/Clerks. We recommend working with the BSAO and the courts in Broward County directly on how to gradually implement the technologies and systems, provide trainings, and identify potential opportunities for additional resources.

Recommendation 3: Agencies should consider adopting collaborative efforts regionally, county-wide or state-wide.

FLPD and BSAO noted that the success of their collaboration has been in no small part to the establishment of the regional meetings. They have benefitted from these meetings through knowledge sharing and improved communication efforts which has ultimately led to efficient DEM policies and practices across the criminal justice system. Through the collaboration, the agencies provide support to each other, identify and resolve typical challenges and roadblocks specific to their jurisdictions, and continue to stay current on trends and emerging technology.

The success of a body-worn camera program depends on all of these factors. We recommend that other states and regional law enforcement agencies adopt this innovative practice. Hosting meetings and engaging with other law enforcement agencies does require effort and dedication, but the benefits are immense. We recommend starting small within an agency's county and then expanding once the flow of regular meetings have been established. These collaborative efforts can then be expanded state-wide through the use of online meeting platforms.

Recommendation 4: Conduct additional research on video analytics and metadata

Finally, through this project, we have learned vast amounts of digital evidence and data are continuously being collected, stored, and managed by the FLPD and BSAO. However, we have not done enough investigation into this data, specifically as it pertains to video analytics and through the examination of metadata. This information could ultimately be used to increase agency efficiencies, identify training opportunities, and expand the knowledge and use for BWC footage within law enforcement agencies. We recommend working with FLPD and BSAO agencies to conduct further research and analyses to examine how video analytics and metadata can be used to improve the field for practitioners using body-worn cameras and other types of digital media.

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Chapter 7

Managing Digital Evidence in a Sheriff's Office: The Harris County Experience

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Introduction

This chapter explores the use of digital evidence from body-worn camera footage within the Harris County Sheriff's Department (HCSO) and the Harris County District Attorney's Office (HCDA). Two aspects of BWC footage are emphasized here – the way that HCSO performs BWC compliance checks/audits and how the HCDA office is working on a system for managing the proliferation of digital evidence, especially BWC. Interviews with key personnel and data obtained from agencies are used to trace the path of BWC from citizen encounters and crime scenes to adjudication.

Background: The Harris County Sheriff's Department

Harris County, Texas is the third largest county in the United States by population, ranking behind only Los Angeles County (Los Angeles, CA) and Cook County (Chicago, IL). Its county seat is Houston, the fourth largest city in the nation. Harris County sits on the Gulf of Mexico in the Houston-Galveston Area Council region of southeastern Texas, and it is central to the Houston Metro Area. Harris County neighbors its surrounding counties of Waller, Montgomery, Liberty, Chambers, Galveston, Brazoria, and Fort Bend.

The Harris County Sheriff's Office, founded in 1837, is the largest sheriff's office in Texas and the third largest in the United States. The HCSO has nearly 4,600 employees and 200 reservists serving over 4.1 million residents. HCSO has an authorized sworn strength of 2,254 deputies. Harris County encompasses 1,788 square miles (1,729 land) and includes 41 incorporated municipalities. HCSO has multiple functions, with primary responsibilities for patrol operations (Law Enforcement Command) and the jail system (Criminal Justice Command).

The Law Enforcement Command comprises key operational areas across the Harris County Sheriff's Office, including the five geographic patrol districts (see Figure 1), the Patrol Support Services Bureau, the Criminal Investigations Bureau, the Homeland Security Bureau, the Administrative Services Bureau, and the Professional Development and Standards Bureau.

¹ <https://www.cna.org/centers/ipr/jri/>

There are five districts in Harris County that are organized geographically. Each district has its own station while the jails and homicide departments are centralized. The Criminal Investigations Bureau is grouped by district and each includes a Violent Crime Unit.

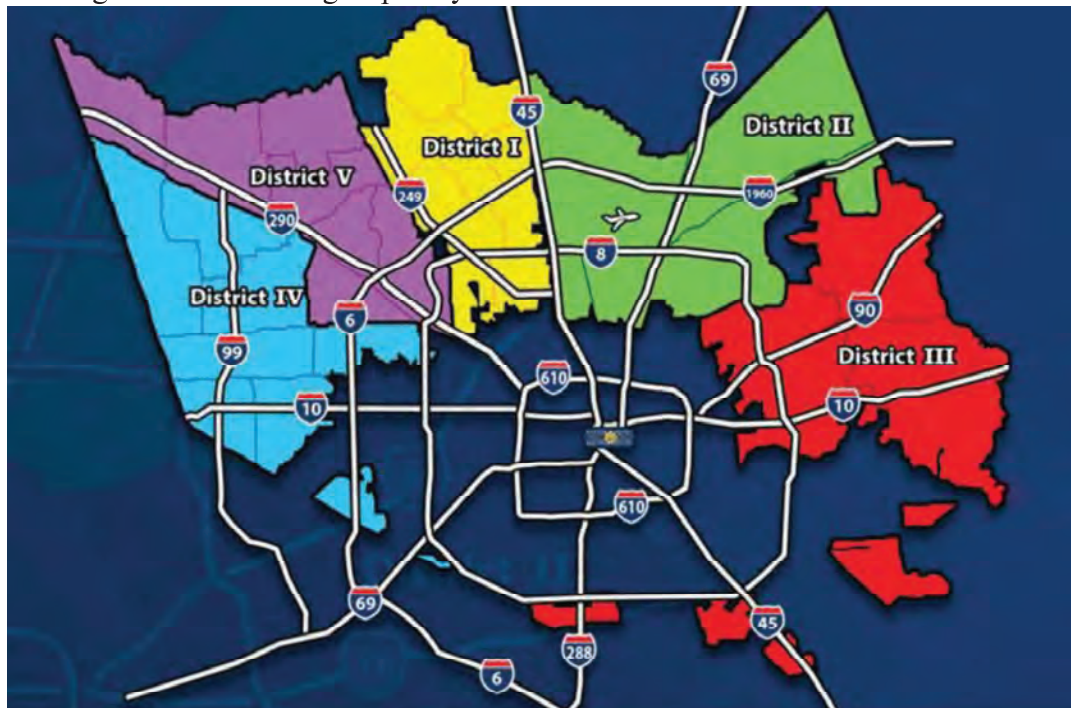


Figure 1. Harris County Patrol Districts

The Criminal Justice Command is the largest command in the Harris County Sheriff's Office with nearly 2,600 employees (deputies and civilians). The Command's primary responsibility is operating the Harris County Jail System. Harris County operates the largest jail in Texas and the third largest jail in the United States. The Command is comprised of four bureaus: Justice Housing 1200, Justice Housing 701, Justice Management, and the Detention Support Services Bureau. Although independent, the bureaus work cooperatively to ensure the care, custody, and control of over 8,700 inmates housed each day.

The HCSO currently utilizes a computer-aided dispatch system and supplies mobile computers in all vehicles. HCSO has been using mobile computers units in their patrol cars since 1997. The Sheriff's Office began using digital records management system in 1989 and updated to the most current standards in 2007 with a new upgraded release in summer of 2018. Both the RMS and the mobile computer program implementations were highly successful. Along with the RMS and mobile computer program, in 2017 the Sheriff's Office implemented the first use of BWCs.

Implementation of BWCs in Harris County

When HCSO began exploring BWCs and storage in 2014, their primary concern was cloud security as it was a relatively new technology for law enforcement. According to command staff, on-premise storage was the only option they felt comfortable implementing. That view has now changed, and the Office is reassessing storage and BWC vendor options. In 2014, the safety and security of storage were the decision drivers for the on-premise solution.

In 2017, the HCSO successfully implemented their BWC system, including all cameras, accessories, docking stations, and other items related to the Panasonic Arbitrator system. This is a secure and robust system that allows agencies to store, manage, and control retention and deletion of customizable data, including digital evidence. Moreover, it has an audit trail report to ensure the integrity of evidence and a reporting mechanism that allows the HCSO to monitor the deputies in the system and the overall usage of the cameras.

In 2018, HCSO received a BJA grant to extend their program from 940 to 2,000 cameras, and they selected Panasonic due to the storage and download options. The technical nature of the deployment has been static. The number of cameras has grown from the pilot of 50 to 100 in 2015/16 prior to the actual deployment of 800 cameras in 2017. They are currently operating 1,570 BWCs with more being deployed as new hires come aboard. (The expansion program is on pause as they reassess storage and BWC vendor options).

Deputies are trained on policy and equipment functions by patrol support services. The HCSO has implemented a BWC policy, institutionalized a training plan, and deployed BWCs throughout the county. The Sheriff's Office has partnered with the Harris County Constable's Office along with the Harris County District Attorney.

HCSO has not made significant changes to the policy since it was first drafted. It was noted that when developing the policy, they met with a board that involved members from the district attorney, sheriff's, and IT; they also used existing policies to develop their BWC policy.

Metrics

Exhibit 1 displays the BWC activity of the HCSO from 2018-2020. On average 10% of their cameras are out of service for repairs. As described above, HCSO has continued to increase its deployment of BWCs each year, with 1,570 BWCs assigned to field deputies in 2020. The number of videos uploaded has increased dramatically over the three-year period, with over 1 million videos uploaded in 2020, resulting in 1.616 petabytes uploaded. The number of videos shared with and requested by the DA's office has steadily grown, including the number of DWI videos provided to the DA's office. Finally, the number of videos requested by the HCSC legal department has remained relatively stable over the three-year period, with 2019 recording the highest number of requests.

Exhibit 1. HCSO BWC Activity, 2018-2020

	2018	2019	2020
BWCs Deployed	800-900	1,200	1,570
Videos Uploaded	138,974	364,513	1,139,419
Shared with DA	12,548	30,695	43,911
Requested by DA	6,999	10,581	11,874
DWI videos shared with DA	2,828	4,652	7,979
Requested by HCSC Legal Dpt.	1,312	1,979	1,485

Activation

Harris County deputies are required to activate their BWCs with any citizen contact, including calls for service, the execution of warrants, and consensual encounters for investigative purposes. Deputies also record all prisoner or passenger transports. The policy, in essence, requires activation for all interactions while in uniform.

Tagging and Categorization

When initially tagging footage, deputies note whether it is a test, an arrest, or an investigation, which is facilitated by a button on the BWC. Once back in the patrol car, they can tag and categorize the case appropriately. HCSO is hoping to automate this process, but the current RMS is not compatible with the vendor's software. All video is transmitted to the district substation first through the server, after which five ingestion servers feed out to the centralized server downtown.

Due to several factors, including the user 'friendliness' of the system, HCSO experiences issues with proper categorization and tagging. There are many uncategorized or incorrect categorizations, but this has slowly improved due to consistent training and reinforcement by command staff. The identification of incorrect categorizations is an internal process that occurs by the Video Team. As an example, over a four-hour period in June 2021, 727 BWC videos were generated, and only 66 were categorized (as of June 15, 2021). Sergeants are tasked with consistently reminding their deputies to tag and categorize their footage accordingly. New technology has improved the tagging review by sending reports to the supervisors to identify untagged video. The department has acknowledged that this was a major challenge.

Compliance Checks

Sergeants review approximately 10-12% of BWC video for compliance checks. Currently, compliance checks are a manual process that command staff initiates on a weekly basis, although HCSO is considering an automated solution. Each week, sergeants are responsible for reviewing 10% of videos from their shift, and the videos are selected at random. The reviewing sergeant creates a spreadsheet with the file name, deputy, shift, and outcome of the audit (in/out of compliance). First time failures are considered a training opportunity; if the infractions are repeated, it becomes a punitive issue.

The training academy is beginning to use BWC videos to highlight examples of best practices on duty, as well as incidents in which improvements can be made. A designated group from training has direct access to BWC videos for training purposes.

Review of BWC Video

Deputies

Deputies only have access to their own BWC video; they cannot review other deputies' videos. There is no requirement to review video for reports.

Detectives/Investigators

Specialized units, including robbery and homicide detectives have access to all pertinent video. This includes all deputy videos, statements, and BWC footage. Detectives do not view all video associated with cases, only when needed.

Use of Force

Use of force investigations are handled by the Office of the Inspector General (OIG) and the chain of command in the administrative branch. OIG has automatic access to the BWC video captured by HCSO, so they do not have to request footage for these incidents.

Complaints

Complaints are likewise handled by the OIG's office. For a complaint to be investigated by OIG, a citizen must file a sworn affidavit at the police station. The complaint will then be assigned to an OIG investigator for follow-up. Harris County does not have a citizen/police accountability board civil review process.

Officer Involved Shootings (OIS)

In Texas, deputies involved in OIS are legally allowed to review all pertinent video prior to giving a statement. In officer involved shootings where a deputy is down or incapable of uploading their BWC video, the camera can be docked at a sub-station, the video downloaded via the normal path, and it can then be reviewed in the backend client.

Legal Department

Sheriff's legal affairs department has their own access to the videos related to administrative and civil matters.

Public Release

HCSO handles public release through their legal compliance department. When they receive a request for video, it follows the same path as the DA's office requests. The recovery team will obtain all videos, annotate, package, and distribute. There are certain situations in which the video is not released; it instead goes to state attorneys' office for finding. The HCSO does not share video with other agencies; video is only provided to the DA's office and through the legal compliance department. HCSO does not handle redactions for cases sent to the DA's office.

Arrests

When an arrest occurs, the DA must approve the charges before they can be filed. Once DAs are assigned specific cases, they must manually request the video from HCSO. HCSO's recovery team then uses a select criteria to identify all video associated with the case: case number,

defendant date of birth, and special personalized number. They will then annotate the video with the case number, export it, package it, and submit it to the DA's office.

One exception to this process is DWI cases; these cases are sent to the DA's office immediately. The arresting officer must categorize the video as "DWI"; the videos are then placed into a special folder as a standardized, more immediate process.

HCSO's Future of BWC Sharing

HCSO is trying to streamline their ability to process requests from the DA's office by automating certain functions. Instead of receiving individualized requests from the DA's office, they will process a list of charged cases in chronological order based on setting date. The video is then automatically provided to the DA. Numerous requests for video on one case can slow the system down because they must process each unique request. In some instances, the DA wants video prior to making a charging decision which mostly involves DWIs.

HCSO has dedicated personnel responsible for sharing video with the DA's office. There are 1.2 petabytes of video on their servers currently, and this number is increasing daily. Their system is set up to delete unnecessary data after 90 days.

Video Analytics AI

HCSO is using a video AI system that can review videos once in mp4 format and is primarily used for indexing. HCSO tested the software using 156 hours of video. The system was to identify an 18 second segment of evidence, which was completed in 4 hours. The video analytics software can identify movement, direction, and color to pinpoint when something of interest occurred.

Harris County District Attorney's Office

The majority of HCSO cases are filed at the county level with the Harris County District Attorney's Office. A small portion of cases are filed with the US Attorney's Office, the Office of the Attorney General, and AUSA's office. HCSO does not file cases at the local level.

HCDA works with 86 agencies, and each have their own systems, though some do not have BWCs. DAs can now access videos electronically for both Houston Police Department (HPD) and HCSO. The DA's office will make a request, and HCSO drops the video into a shared folder. They can copy and store videos in a digital format, but storage space has become an issue. They have requested that smaller agencies use FTP transfers to alleviate some storage problems. Currently, there are many individual video downloads, which can slow down the system.

Defense attorneys have access to videos through an in-house-built system, which affords them their own portal. The DA's office can release video and other evidentiary items through the portal for download. Some defense attorneys still struggle with the electronic sharing of video and data, so HCDA still transfers some video by way of DVD or flash drives. Prior to the creation of individual portals, the DA's office shared links. Since transitioning away from using

links, they have moved to a model of cloud sharing. The HCDA's main video contributor is HPD, and HCDA has access to the videos via cloud share.

One of the greatest challenges faced by HCDA is the lack of integration into the CAD system. There are many videos that do not match agency case numbers, and it is a manual process to associate and tag video to a case. HCDA is considering an automated solution, as it is inaccurate in its current state. Additionally, subsequent or follow-up investigations may not locate all pertinent video. There are some points of contact for the major agencies to assist with resolving mismatched cases, but this does not apply to all agencies.

HCDA does not review all cases or video prior to making a filing decision, but rather makes the decision to accept charges at the time of arrest. Once an arrest occurs, the arresting officer calls the DA's office, explains the circumstances, and the prosecutor will decide whether to accept the charge. At this point, it becomes a criminal case. The HCDA's office has intake DAs, including four or five prosecutors and support staff who work at all times (7/24). They also have probable cause courts and dockets that run 24 hours a day. Because of this process, BWC does not impact charging decisions in a direct file case (patrol, robbery, burglary) with an immediate arrest. There are few exceptions, which include warrants or vertical prosecution cases. Individuals from major offenders or special crimes divisions may watch the video before making a filing decision.

On average, many of the 350 Harris County DDAs spend approximately 2-3 hours watching video per week. The end users handling the cases watch an estimated 2-3 hours of video per day but most likely skip through to the pertinent information.

The HCDA's office regularly uses BWC in court, but there are a significant number of cases that do not have associated BWC. DWI cases benefit the most from BWCs. In some instances, there will be video for homicide cases, but they will usually show still images rather than video. Videos can also be used in court to help impeach a witness.

HCDA's ultimate goal is not to ingest or store BWC video due to the lack of storage space. There are currently no policies on retention, and they have limited data on how many videos are currently stored due to the various platforms used. A snapshot of the data shows they are currently storing:

- 8.4 million electronic files
- 49.8 million pages (1 video = 1 page)
- 2.6 million images/photos
- 3 million documents and
- 500-600K videos (All BWCs from HPD as the other platforms don't permit data information from the agency cloud for the DA)

HCDA hopes to own their case management system and to create portals for sharing video with the various stakeholders with whom they work.

Conclusion

The Harris County Sheriff's Office successfully implemented their body-worn camera program in 2017. Since its inception, the program has grown from 50 cameras to nearly 2,000. HCSO uses BWC footage to conduct weekly audits and assess compliance with department policy. The department relies on compliance checks to inform training and increase positive outcomes for deputies with first time infractions. HCSO also used BWC footage in the training academy to highlight both exceptional behavior and areas for deputies to improve.

As HCSO and other surrounding agencies expand their BWC programs, the sheer volume of footage generated is presenting challenges for the Harris County District Attorney's Office. HCDA is seeking a solution to integrate CAD with their case management system. While the goal is not to ingest and store any video on their servers, HCDA is hoping that the manual tagging and other burdensome aspects of missing data can be resolved through an automated solution.

Chapter 8

Findings, Conclusions, and Recommendations

By

Craig D. Uchida

Introduction

This project began in October 2019 after BJA Program Manager John Markovic expressed a desire to examine the burgeoning data and evidence emerging from body-worn cameras. We engaged in thoughtful discussions over the next few months and began selecting agencies for inclusion in the project in December. In January 2020, we created interview protocols, data collection instruments, and the flow chart described in Chapter 1. For uniformity across sites, each research group from our respective organizations (JSS, ASU, and CNA) used the same interview questions, tried to collect the same type of data, and used the flow chart as closely as possible.

Ultimately, we sought answers to the following questions:

- 1) What are the key challenges facing law enforcement organizations and prosecutors' offices regarding managing digital evidence obtained from body-worn cameras?
- 2) To what extent and in what ways do technologies assist with review, redaction, compliance monitoring, and other concerns?
- 3) What are the typical volume and flow of BWC footage from the point of collection, to tagging, and to use by persons inside and outside the police department?

Taking a case study approach, we examined the process for managing BWC footage in seven agencies: Two large police departments (Phoenix, AZ and Los Angeles, CA); two mid-size police agencies (Glendale, AZ and Rochester, NY); a Sheriff's Office (Harris County, TX), and a collaborative effort in South Florida (Broward County State Attorney's Office and Fort Lauderdale Police Department).

Each jurisdiction provided data about the outputs of their BWCs, including numbers of cameras, videos, and footage shared with prosecutor offices. When the COVID-19 pandemic struck in March 2020, we could not make visits to police agencies or prosecutor offices as we had planned, but like the rest of the country, we adapted and used Zoom or other platforms for interviews, discussions, and webinars.

Findings

This section describes the findings across sites and then provides a summary of individual findings for each jurisdiction

General findings

Overall, we found that police agencies and prosecutor offices follow similar processes for using body-worn camera footage internally. That is, like many agencies across the country, all of the departments do the following:

- ✓ Deploy BWCs to officers/deputies who activate cameras based on their policies;
- ✓ Upload footage to a server (cloud-based or on-premise computer);
- ✓ Review the footage for multiple reasons -- compliance purposes, when a critical event occurs, and before the public release of the footage;
- ✓ Distribute footage to prosecutor offices as part of a case; and
- ✓ Retain and/or purge footage based on their administrative policies.

Three major findings stand out from our study.

First, we found that the use of body-worn camera footage (and other digital evidence) is interconnected throughout the entire criminal justice system. That is, footage is a unique piece of evidence that is used for internal purposes within a policing agency and for specific evidentiary purposes for prosecutors, public defenders, and the courts. Footage is passed on from police to prosecutor to defense attorneys to the courts, much like other evidence. Like DNA, ballistics, and other forensic evidence, using footage requires specific technology (hardware and software), personnel with technical skills, administrative procedures (chain of custody), and resources (funding) for meeting its full potential.

Second, BWCs and their footage require more resources than criminal justice agencies initially realized. Within policing agencies, specialized BWC units have been formed to manage the technology itself and the footage that emanates from the cameras. Police and sheriff offices must keep up with maintenance, upgrades of cameras, software needs, and the fast-paced evolution of technology to manage BWCs. In the rest of the criminal justice system, agencies are not equipped (literally and figuratively) to manage the digital evidence onslaught. The prosecutor offices in our study are aware of the problems and have taken steps to increase their management capacity and apply resources for those needs. Yet, they continue to be strapped for funding, people, and technology. The courts and public defenders are further behind in managing digital evidence as they do not have the people, technology, funding, or training and expertise.

Third, while the release of video footage to the public is an important component of transparency and accountability, many agencies have different rules, policies, and state laws that govern that release. In addition, agencies receive numerous individual requests for footage, but it remains a technological and resource struggle for those agencies to respond appropriately. That is, there is no ‘easy’ way to quickly find footage, redact faces or personal identifiable information (PII), and provide ‘clean’ footage to individuals or organizations.

Specific findings from the sites

Los Angeles Police Department (LAPD). Over 7,000 cameras are used in the LAPD. A special unit comprised of a sergeant and five officers assist with implementation, training, and other issues that arise. Video Compliance Units in the four patrol bureaus randomly select footage of officer encounters where a written incident report is available. These units determine whether

officers are following BWC policy. Lieutenants and Sergeants review footage routinely in use of force incidents, pursuits, arrests, and complaints.

LAPD policy requires that video footage for critical events be released to the public within 45 days of the event. Since April 2018, about 140 critical events have occurred and those videos have been released in the form of a “Critical Incident Community Briefing,” a 20-35 minute video of the event.

Arrests with BWC footage and other case material are available to the Los Angeles County District Attorney’s Office (LADA) via the cloud. The LADA works with 18-20 law enforcement agencies in the county that annually submit approximately 15,000 cases and 230,000 pieces of evidence of all varieties.

Phoenix Police Department (PPD). In 2013, the PPD was the first agency in the United States to be sponsored by the Bureau of Justice Assistance (BJA) to pilot test BWCs under the Smart Policing Initiative. Since that time, over 2,500 BWCs have been deployed to patrol and numerous specialty details.

A special BWC unit staffed with 16 employees is responsible for managing and disseminating digital evidence associated with BWCs, revising policy, developing training curriculum, and providing training to officers. Most BWC digital evidence storage space (85.5%) is dedicated to incidents involving order maintenance, violent crime, traffic-related incidents, property crime, and service activities.

In 2020, PPD forwarded BWC digital evidence to the City of Phoenix Prosecutors Office for 11,600 cases and the Maricopa County Prosecutors Office for 4,276 cases. This was a substantial increase from the 1,000 cases that were forwarded in 2015. Major concerns for PPD and Maricopa County are the need for additional resources to review footage and for public defenders and the courts where resources are limited.

Glendale Police Department (GPD). Three hundred GPD officers wear cameras. The research team estimates that those officers recorded more than 187,000 videos per year.

Two unique features of GPD are its BWC policy and compliance process. With its policy, the Department stresses continuous camera activation, comprehensive auditing, and use of force reviews. The GPD’s compliance process emphasizes monthly audits by supervisors, comparisons of videos to each officer’s calls, and inspections to ensure that videos are appropriately tagged. As a result, Glendale has an exceptionally high activation compliance rate (over 95%).

Since the program’s inception, there has been a transition to new cameras, incorporation of smartphones in the BWC data gathering process, changes to the video tagging protocols and tagging categories, and several modifications to the BWC policy. For example, new redaction technology allowed the Department to protect the identities of undercover officers by blurring out images in footage before its public release. As a result, officers no longer had to temporarily deactivate the BWC when interacting with undercover officers.

Rochester Police Department (RPD). In 2015 RPD began implementing BWCs. With about 725 sworn officers, RPD has deployed about 500 cameras to its patrol officers and special units.

Two features are highlighted here -- how RPD uses footage for investigations and how the Monroe County District Attorney (MCDA) office has adopted a new system for managing the proliferation of digital evidence. For investigators, video footage is valuable because it helps establish a timeline of “what happened, when” independent of officer accounts and testimony. In addition, footage serves as a source of evidence gathering, assessment, and (dis)confirmation of facts. For the MCDA, a new platform solution allows for assembling case materials remotely from RPD and seven police agencies with BWC for use from a centrally managed drive. This has increased the efficiency of assistant DAs and allows them to manage automation, workflow, and file storage and retrieval for courts and court services.

South Florida Collaboration: Fort Lauderdale Police Department (FLPD) and Broward County State Attorney (BCSAO). FLPD assigns two cameras to each officer; thus the Department has 1,100 cameras for its 535 officers. A BWC administrator and assistants are responsible for many activities, including compliance in tagging, responding to public requests for footage, redaction, and ensuring that the Department follows the retention policy. The BCSAO has a Digital Evidence Unit devoted to managing BWC footage and other evidence from 16 law enforcement agencies.

At the beginning of its BWC program, FLPD worked with the BCSAO to determine how footage would be shared and how to effectively engage other agencies. Two key findings are highlighted in this chapter: 1) the successful establishment of the South Florida Regional (turned state-wide) Collaborative BWC Meetings, and 2) their innovative community engagement efforts through the use of Axon Citizen.

Harris County Sheriff's Office (HCSO). As the largest sheriff's office in Texas and the third-largest in the U.S., the HCSO has 2,254 deputies. The Office has deployed over 1,500 BWCs to its patrol deputies. In 2020, it uploaded over 1.1 million videos to its servers and shared nearly 44,000 videos with its district attorney. Sergeants review approximately 10-12% of BWC video each week to ensure compliance with its policies. The Department relies on compliance checks to inform training and increase positive outcomes for deputies with first-time infractions.

The Harris County District Attorney's Office (HCDA) works with 86 policing agencies, of which HCSO and the Houston Police Department are the largest. HCSO shares its video electronically with the DA upon request. Still, the sheer volume of footage generated is presenting challenges for the DA's Office. HCDA is seeking a solution to integrate CAD with its case management system.

Recommendations

Based on the case studies of the seven jurisdictions, we make the following recommendations:

1. As part of a law enforcement agency's BWC program, it should create and follow a detailed administrative policy for deploying, activating, reviewing, and releasing footage

from BWCs. We found that policy is the basic foundation for implementation of the cameras and that it assists with ensuring compliance, collection of information, and dissemination of that information. The policies in Glendale, Los Angeles, and Phoenix are useful models for other agencies.

2. Law enforcement and criminal justice agencies should plan for the expansion of digital evidence. The use of BWC footage as digital evidence will increase because of its importance within policing agencies and prosecutor offices, defense attorneys, and the courts. Agencies should develop strategies for this growth and consider their long-term needs regarding personnel, technology, and funding.
3. Within the criminal justice system, digital evidence will become increasingly important and costly. Research on the needs of prosecutors, public defenders, and the courts should be undertaken. Particular attention should be paid to the technological and staff support needed to manage the volume of evidence that will be coming their way.
4. When using body-worn cameras, law enforcement agencies should ensure that officers and deputies accurately tag and categorize the recorded incidents on their cameras.
5. The importance of BWC footage to the public cannot be overstated. Policing agencies should dedicate appropriate resources to respond to public requests for BWC footage.
6. The public demand for the release of BWC footage will continue. Agencies should be trained on their state and local laws, rules, and regulations that govern the release of footage.
7. Agencies should consider adopting collaborative efforts regionally, county-wide or state-wide. The regional approach undertaken by Broward County and the state prosecutors in Florida could serve as a model for collaboration.
8. The current study looked at two large agencies, two mid-size agencies, one sheriff's office, and a collaborative approach. More studies should be undertaken, particularly with small, rural, and tribal agencies and the criminal justice systems involved with those agencies.
9. More research should be conducted on video analytics. Law enforcement and criminal justice system agencies need to know what is available among vendors and what types of software are most applicable to their needs.
10. Data from BWC platforms include a variety of useful information. They include the types of calls that police respond to, GPS-based locations, length of time at the scene (and on video), officers who were involved, whether an arrest was made, and other information pertinent to police activity. These metadata are an untapped resource that could assist agencies, researchers, and policymakers. Researchers and analysts should examine and analyze these data and provide reports showing agencies how the data could be used in day-to-day operations, training, and administrative purposes.

11. Importantly, researchers and police should determine how to standardize the data from BWC footage. That is, in order to make appropriate comparisons between and among agencies -- i.e., the numbers of videos, storage space, and other basic information -- standards should be set for those comparisons.
12. BWC footage is just one type of digital data that is burgeoning in law enforcement agencies across the country. Digital data in the form of audio/visual recordings from other devices are also being generated by police in large volumes.¹ While this report focused on BWC footage, those other types of digital data are being accessed, managed, and in some cases integrated with BWC digital footage. Coordination and cross-platform integration of digital evidence is a rapidly growing field that needs to be better understood, leveraged, and managed.

¹ These other forms of data include, but are not limited to, dashboard cameras, CCTV, fixed station cameras, business security camera videos shared with the police, residential security videos shared with the police, digital camera footage from other government agencies (e.g., schools and public transportation sites), citizen cell phone video footage and license plate reader (LPR) footage.