



Addressing Crime through Innovative Technology

St. Louis County (Missouri) Police Department Camera Systems Unit

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COPS
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CNA

Cover photo: Courtesy St. Louis County (Missouri) Police Department

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Introduction

The St. Louis County (Missouri) Police Department (SLCPD) employs nearly 900 commissioned officers and 300 professional staff and serves more than half of St. Louis County's one million residents. Its jurisdiction includes all unincorporated areas of St. Louis County as well as 13 municipalities on a contract basis. The SLCPD is divided into eight precincts: (1) North County, (2) Central County, (3) Affton-Southwest, (4) South County, (5) City of Fenton, (6) City of Wildwood, (7) West County, and (8) City of Jennings. In 2021, the SLCPD reported 1,580 violent crime incidents to the FBI's Uniform Crime Report (UCR).¹

Consistent with national trends related to increased use of cameras in routine police operations, the SLCPD is using a system of body-worn cameras (BWC) and dashboard-mounted cameras to streamline many of its processes. To manage the SLCPD's technical administrative needs for cameras of all types, the SLCPD created a Camera Systems Unit (CSU) in 2019. The CSU started as a two-person team that handled the research and implementation of the SLCPD's camera systems. Since then, it has added part-time employees to assist in the redaction and categorization of footage. The CSU handles all digital evidence management, including sunshine requests (requests for information under Missouri laws on sharing information with the public) and requests to transfer data to external criminal justice actors, such as prosecutors and defense attorneys. The unit also helps physically maintain the equipment and has proactively worked with the vendors to tailor their products to the department.

In October 2022, members of the CNA research team conducted a two-day site visit with the CSU to see how the camera systems are being used across the department. During the site visit, the CNA team met with members of the CSU team, a representative of the Media Relations Unit, four members of the Bureau of Professional Standards, three patrol officers from two precincts, two supervisors, three members of the Tactical Operations Unit, a Highway Safety Traffic Officer, and the SLCPD chief of police. Conversations with the SLCPD employees touched on topics related to the daily use of BWCs, how their work has changed since the implementation of BWCs, and what they have found the most and least useful about the multitude of camera devices they have access to. Though the people interviewed had different roles, the team found commonalities in their perceptions of the ease of use and usefulness of the cameras. CNA had several follow-up conversations with the CSU team to ensure the information reported here is accurate.

1. FBI (Federal Bureau of Investigation), "Crime Data Explorer," accessed October 16, 2023, <https://cde.ucr.cjis.gov/LATEST/webapp/#/pages/explorer/crime/crime-trend>.

The Camera System and Platform

In prior experiences with dash camera and BWC systems, the SLCPD faced durability issues and negative staff perceptions of surveillance. As a result, the SLCPD sought to reinvigorate the way it incorporated camera systems into its daily operations. The department purchased BWCs and in-car cameras in 2019 as an investment in an easy-to-operate system that could demonstrate the full potential of cameras to officers. For instance, the camera system has features that can increase officer safety and enhance officers' record-keeping abilities. In-car cameras collect audio and video from inside the car and outside and feed them to the same viewing platform that the BWCs use. The BWC at the heart of this system is embedded in a cell phone worn in an inside pocket of a custom-designed uniform shirt. The internal pocket is placed at center chest and ensures that the phone's camera lens faces outward and does not dislocate during normal maneuvering. Users can also easily remove the phone to view footage or add notes to their videos if they are away from their other devices. All recorded footage and metadata collected on the BWC is automatically transferred to the officer's patrol vehicle via the system's wi-fi network. In case of wi-fi failure, the BWC also has the capability to upload recordings directly to the cloud via cellular connection. To minimize missing footage, the BWC has a pre-record feature that passively collects footage in 30-second increments so that data from before activation is still captured. Any footage prior to that 30-second increment is automatically deleted as part of the passive record process.

The phone is connected to a magnetic clip that holds it in place inside the shirt, and the clip can also enable automatic sensors and triggers when connected to the phone. For example, the BWC will automatically start recording (if it is not already) when the officer removes their firearm from its holster. The camera also includes the BodyWorn Down feature, which alerts nearby BWC wearers, the dispatch center, and CSU if it detects the phone is horizontal for one minute while in active duty mode. Administrators receiving such an alert from the BodyWorn Down feature can pinpoint the exact location of the wearer through person-level tracking through the phone's GPS-enabled SIM card.



Photo courtesy St. Louis County (Missouri) Police Department

BWC, mount, and remote.

When one SLCPD officer experienced a medical emergency while on duty, the BodyWorn Down feature alerted CSU administrators that the officer was not upright. The administrator livestreamed the footage from the camera, confirmed that an emergency was taking place, and dispatched help. The person-level tracking feature enabled the emergency service providers to go directly to the officer, who had left the original call location when the medical issue began. Responders were able to receive accurate GPS coordinates to the officer's exact location, saving valuable minutes in response time.

To store footage from the system BWC and in-car cameras, the SLCPD uses AVailWeb, a platform that consolidates video playback, fleet management and analytics, and communications into one portal. Officers can access AVailWeb through a phone, tablet, or computer for mobility and concurrent use. The platform easily integrates data from third-party sources, allowing the SLCPD to access footage from satellites, highway cameras, license plate readers (LPR), drones, and security cameras. Officers and command staff can then access data from this camera "ecosystem" via a central hub and use it for person-level tracking and communication.

The AVailWeb platform allows users to see who has accessed their videos, creating an automatic chain of custody for evidentiary videos. CSU administrators can limit access by role and also limit how the data are shared with downstream actors, keeping the data secure. For instance, St. Louis County prosecutors can access videos through the EyeWitness log-in portal from Utility Inc., which allows the prosecutor's office to retrieve evidentiary footage from the SLCPD's system while limiting access to unrelated footage captured by the camera system. This portal has improved the data transfer process by eliminating the costly, time consuming, and less secure method of physically transporting data via a USB or CD.

In previous camera system iterations, the SLCPD's native servers lacked the bandwidth to store the footage; as a result, the SLCPD implemented cloud storage as the most technically and financially feasible option. For the current camera system, users can access the footage stored in the cloud through a web-based application programming interface (API), which is accessible from mobile devices and computers via the AVailWeb platform. The SLCPD owns the cloud storage and will retain ownership of the footage should it ever end its hosting contract with Utility Inc.

In implementing the camera system, the SLCPD was determined to craft its policies to be responsive to officer and supervisor concerns regarding excessive monitoring. For instance, the CSU worked with the police officers' union to ensure that the livestream function would not be used to monitor officers' actions in the field arbitrarily. The camera system policy therefore restricts live streaming to dispatch supervisors and the camera system administrators. When a livestream begins, the built-in text-to-voice feature in the BWC alerts the wearer. The union agreed that this approach protects officers' privacy while not limiting the usefulness of the cameras. In addition, supervisors were concerned about how much time they would spend reviewing video data, since more than 1,500 videos are captured per day. The policy therefore ensures that supervisors will review randomly selected footage only during a new hire's one-year probationary period. Otherwise, the BWC policy dictates that supervisors will watch footage for report clarification, when a complaint is filed against an officer, or when a use of force incident occurs. By working with internal stakeholders early in the policy development process, the SLCPD built trust in the camera system and helped make officers more comfortable with the system as a whole.

For the go-live process, the SLCPD introduced the camera systems all at once rather than rolling them out in phases. In late 2019, the SLCPD installed a tablet and two cameras in every patrol car without turning them on. After installation, officers then went through a five-hour training covering the technical use of the BWCs, the in-car units, the AVailWeb platform, and the policy for their use. When officers left the training, their individually assigned cameras were switched to operable, allowing the officers to familiarize themselves with the equipment. During the period between the training and the official go-live date (January 2020), officers faced no repercussions for lack of use or for improper use. This grace period allowed the SLCPD to identify and resolve any use issues prior to the go-live date. The SLCPD also assigned equipment to individual officers, rather than having them share equipment across shifts, to create a sense of individual responsibility for the care of the product and to ensure officers were comfortable with their assigned cameras.



Photo courtesy St. Louis County (Missouri) Police Department

Mobile command center.

In April 2021, the SLCPD and police from the Des Peres (Missouri) Police Department, which has signed an MOU with the SLCPD and uses the same AVailWeb system, responded to an active shooter situation at a shopping mall. The responders used the system's messaging and person-level tracking feature to set up area containment and coordinate a multiagency response. Using person-level tracking, SLCPD officers arriving on the scene could see where officers from the Des Peres Police Department were located and vice versa. The direct intra-agency communication about which entrances of the shopping complex to cover sped up the response and ensured coverage was more thorough. Afterward, the SLCPD used the BWC footage and communication data to generate an after-action report.

In addition, as part of the implementation process, the SLCPD entered into a memorandum of understanding (MOU) with local partner agencies. Though not all agencies in St. Louis County have purchased the same system, the MOU allows the SLCPD to share some of its data across the agencies that have, enabling coordinated responses and resources when jurisdictions overlap. For instance, officers can use the map view to assist in field coordination across the entire St. Louis metropolitan area. Officers can also communicate with their external partners through AVailWeb—a function not available through their prior software. In addition, CSU has taken on a leadership role among other local law enforcement in the metropolitan area and provides other agencies with technical support; shares equipment; and acts as an advisor on aspects of policy, training, and implementation.



Photo courtesy St. Louis County (Missouri) Police Department

In-car cameras and computers.

Outcomes

The camera system has significantly affected the way many SLCPD units operate. SLCPD members described how the implementation of the cameras has changed the way they work, including making their job duties easier, providing greater investigative capacities, enhancing evidentiary value, allowing for more accurate reporting, reducing time testifying (e.g., when footage can be played in court instead), and increasing safeguards against unfounded complaints. To highlight these and other outcomes, this report discusses three groups in the SLCPD who have experienced distinctive benefits from the camera systems: field officers, Internal Affairs, and the Public Information Office (PIO).

Field officers

Field officers, including patrol, the Tactical Operations Unit, and the Highway Unit, use the camera system as a tool for officer safety and record keeping. Officers the team spoke with commented on how announcing the presence of their BWCs helped de-escalate situations or prevent them from escalating further. In other instances, the BWCs have allowed officers to disengage completely from situations that could have led to uses of force. For instance, an officer described a suspect fleeing a traffic stop in a vehicle. Rather than pursue, the officer allowed the suspect to flee and used a still frame from his BWC to issue an alert for other officers. Based on the alert, officers identified and re-engaged the suspect later the same day. The still frame from the BWC footage aided in identification during the second encounter, because the suspect looked different from the driver's license photo the SLCPD had on file.

In addition, officers described using the cameras for officer safety purposes. For example, if multiple suspects are detained in the back seat of a patrol vehicle, officers can monitor the suspects through the in-car camera. The camera captures audio and video of the rear of the vehicle that can be livestreamed to the officer's tablet, giving officers increased situational awareness as well as greater mobility. Since the initial site visit, LPRs have been added to nearly 100 patrol cars, which integrate into the camera system and allow officers to have that information on their in-car computers and tablets as well.

Similarly, the Tactical Operations Unit uses the BWCs to supplement its highly specialized equipment, allowing command staff to access the livestreamed footage from the field for increased situational awareness and better coordination of the tactical response. For instance, BWCs have been attached to the front of armored vehicles with a magnetic holster, to poles for viewing around corners, and to the BearCat explosive ordnance disposal (EOD) tactical robot. The CSU has two trucks that can carry equipment for a mobile command center and can be deployed in tactical situations, allowing site leaders to pull up multiple camera sources at once to inform decisions. This access to real-time footage reduces miscommunication when relaying information between the Tactical Operations Unit and command.



Photos courtesy St. Louis County (Missouri) Police Department

BearCat EOD with BWC attached with bike handlebar phone mount.

SLCPD officers also informed researchers that they use the footage from their cameras to supplement their report writing. Officers can review their own footage to ensure their report is more accurate than their recollection alone would be. For instance, the recording provides the officers with exact times of events. Officers who were present at the same event can also share footage with one another when writing reports, allowing them to view an event from a range of physical perspectives. Other patrol officers also discussed how they use the cameras when acting as the first responders to nonactive crime scenes. Upon arrival, they use their BWCs to capture what they see, providing initial documentation and evidence preservation prior to the Crime Scene Unit arriving to process the scene. As they record the scene, the officers can vocally narrate what they are doing as a way of taking notes for their end-of-shift reports.

Finally, four SLCPD precincts and two divisions at the headquarters office building have been outfitted with interview rooms tied into the camera system, and the SLCPD plans to install smart interview rooms in all precincts in the future. Cameras are installed in the hallways and interview rooms, and a simple switch on the wall turns on a light to alert people when the cameras are activated. Similar to BWCs, these cameras have a 30-second prerecord and can automatically upload footage to the cloud for immediate playback. With this system of BWCs, in-car cameras, and wall-mounted cameras, the SLCPD can capture footage of the moment an officer arrives on a scene, the arrest, the walk from the vehicle to the interview room, the interview itself, and the arrestee walking back to a detainment cell. The footage can then be tagged and grouped into one case file for easy retrieval.

Bureau of Professional Standards

The camera system has also changed how the Bureau of Professional Standards (BPS), which houses the SLCPD's Internal Affairs unit, conducts administrative investigations. BPS handles all internal and external complaints and policy violations. Prior to the implementation of the camera system, BPS relied on after-the-fact recollections, which often turned into hearsay accusations among the involved parties. Since the camera system's go-live date in 2020, BPS has found it can process misconduct reports more easily and expeditiously given the easy accessibility of recorded evidence. For instance, when an allegation is first raised, BPS investigators can immediately review the related footage and, if justified by the evidence, address the allegation without having to conduct multiple time-consuming interviews to collect statements. For other cases (particularly use of force incidents), BPS investigators can investigate the event from all available camera angles if multiple officers were on scene.

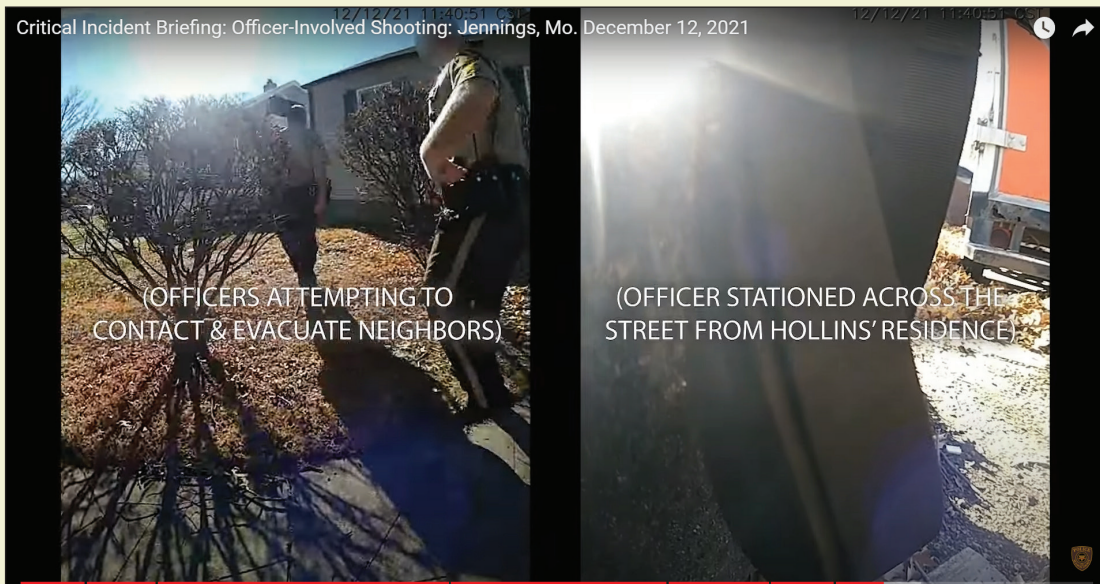
BPS has also constructed its own smart interview room (similar to the smart interview rooms for criminal suspects discussed in the "Field officers" section) to integrate their investigations into the AVailWeb platform. Interviews conducted as part of Internal Affairs investigations are recorded and saved using the same technology that captures the patrol officers' BWC footage. Incident footage can be grouped with interview footage into one case for easy retrieval. The need to review the BWC and interview footage has increased the time spent on each case, but the BPS employees interviewed felt more confident in the thoroughness of their investigations as a result. Rather than drawing conclusions from testimonies alone, BPS investigators can pull unbiased evidence into the cases from the footage.

Media and public affairs

Finally, the SLCPD's PIO uses the camera system to increase community outreach by highlighting officer "hero moments" and by providing an avenue for community transparency after critical incidents. For instance, when informed of a particularly positive interaction by a community member or supervisor, the PIO can immediately access BWC footage from the interaction and release it to the broader community, including media partners. In the event of a critical incident, the PIO can create an open line of communication with public stakeholders by providing releasable video evidence prior to the completion of the internal investigation. The SLCPD has released two critical incident briefings since the go-live in 2020, and in both cases, the PIO publicly shared footage from BWC and dash cameras taken during the incident, allowing the footage to stand alone for the viewers to judge. In the long term, the PIO would like these critical incident briefings to be expected by the media, reinforcing the SLCPD's transparency. To achieve that goal, the PIO has increased their staff, allowing them to handle the additional video editing tasks prior to releasing footage to the community.



Screenshot from a critical incident briefing showing officer's movement from a street-level perspective



Screenshot from a critical incident briefing showing officer's movement from the BWC perspective

Source: St. Louis County Police Department, "Critical Incident Briefing: Officer-Involved Shooting: Jennings, Mo. December 12, 2021," YouTube, March 8, 2022, <https://www.youtube.com/watch?v=q6jhylcumG0>.

Conclusion

Moving forward

Although the SLCPD has provided overall support for the expansion of its camera systems, the CSU has at times struggled to keep up with the demands for service, which is a credit to the program's use rate. The program has also been notable for its ingenuity—specifically in the way that SLCPD employees have adapted the equipment to better suit the department's needs. For instance, CSU created the smart interview rooms by wiring a computer designed for the in-car camera system through the walls. In addition, one officer used his personal resources and experience with 3D printing to create custom attachments for the BWC accessories, allowing officers to wear a camera remote on their wrist, their belt, or the front of their uniform. These employees saw areas in which the camera system could be improved and created solutions.



3D printed clip with camera remote.



Photos courtesy St. Louis County (Missouri) Police Department

The SLCPD is planning to continue investing in and expanding the camera system, with the already witnessed benefits supporting this decision. It is currently equipping new roles, including detectives and school resource officers, with BWCs and planning to install the smart interview rooms in two new construction precincts. Utility Inc. (under the new name Polaris) is updating its platform, which will include auto-transcription features, offer improved facial recognition for auto-redaction, and integrate state Criminal Justice Information Services Division policies into its record keeping protocols. In the future, the SLCPD would like to better integrate its dispatch and record management software with the camera systems data. Ultimately, the camera system has become integral to the way the SLCPD operates, and the SLCPD will continue to push the bounds of how cameras can assist in policing.

Key takeaways

1. The presence of BWCs during a police-civilian interaction can alleviate tensions and aid de-escalation.
2. Individually assigning equipment to officers encourages responsibility for and familiarity with the devices.
3. Engaging internal and external stakeholders early in the process of adopting BWCs and other recording devices makes the implementation smoother, increases the use of the devices, and makes officers more comfortable with the system as a whole.
4. Digital storage for footage is more secure and transfers data in less time than analog methods. The benefits of thoroughness and security outweigh the labor costs associated with adopting a camera system.

About CNA

CNA is a not-for-profit organization based in Arlington, Virginia. The organization pioneered the field of operations research and analysis 70 years ago and today applies its efforts to a broad range of national security, defense, and public interest issues, including education, homeland security, public health, and criminal justice. CNA applies a multi-disciplinary, field-based approach to helping decision-makers develop sound policies, make better-informed decisions, and lead more effectively. CNA is one of the technical assistance providers for the U.S. Department of Justice's Office of Community Oriented Policing Services' Collaborative Reform Initiative for Technical Assistance.

For more information, visit CNA online at <https://www.cna.org>.

About the COPS Office

The **Office of Community Oriented Policing Services (COPS Office)** is the component of the U.S. Department of Justice responsible for advancing the practice of community policing by the nation's state, local, territorial, and tribal law enforcement agencies through information and grant resources.

Community policing begins with a commitment to building trust and mutual respect between police and communities. It supports public safety by encouraging all stakeholders to work together to address our nation's crime challenges. When police and communities collaborate, they more effectively address underlying issues, change negative behavioral patterns, and allocate resources.

Rather than simply responding to crime, community policing focuses on preventing it through strategic problem-solving approaches based on collaboration. The COPS Office awards grants to hire community policing officers and support the development and testing of innovative policing strategies. COPS Office funding also provides training and technical assistance to community members and local government leaders, as well as all levels of law enforcement.

Since 1994, the COPS Office has been appropriated more than \$20 billion to add community policing officers to the nation's streets, enhance crime fighting technology, support crime prevention initiatives, and provide training and technical assistance to help advance community policing. Other achievements include the following:

- To date, the COPS Office has funded the hiring of approximately 138,000 additional officers by more than 13,000 of the nation's 18,000 law enforcement agencies in both small and large jurisdictions.
- More than 800,000 law enforcement personnel, community members, and government leaders have been trained through COPS Office-funded training organizations and the COPS Training Portal.
- More than 1,000 agencies have received customized advice and peer-led technical assistance through the COPS Office Collaborative Reform Initiative Technical Assistance Center.
- To date, the COPS Office has distributed more than nine million topic-specific publications, training curricula, white papers, and resource CDs and flash drives.

The COPS Office also sponsors conferences, roundtables, and other forums focused on issues critical to law enforcement. COPS Office information resources, covering a wide range of community policing topics such as school and campus safety, violent crime, and officer safety and wellness, can be downloaded via the COPS Office's home page, <https://cops.usdoj.gov>.

In this series, CNA studies the use of emerging technologies by law enforcement agencies. The St. Louis County (Missouri) Police Department uses body-worn and dashboard-mounted cameras, data from which is managed and analyzed by the department's Camera Services Unit created in 2019. This case study examines the use and utility of both types of cameras and the operations of the CSU.



COPS

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