

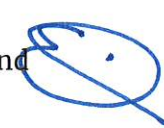


THE CITY OF SAN DIEGO

MEMORANDUM

DATE: January 2, 2020

TO: Honorable Council President Georgette Gómez and Members of the City Council

FROM: Cody Hooven, Director, Sustainability Department
via Erik Caldwell, Deputy Chief Operating Officer, Smart and Sustainable Communities 

SUBJECT: Draft Council Policy on Streetlight Sensor Data Use

OVERVIEW:

This memorandum shall introduce a draft council policy for consideration and adoption on the use of data generated by the City's streetlight sensors.

Background

On December 13, 2016, City Council approved an agreement with General Electric (GE) to upgrade City lighting infrastructure with intelligent streetlights from GE. The City's outdoor lighting inventory includes approximately 68,000 fixtures, comprised of streetlights, parking lot lighting and park lighting. The 2016 Outdoor Lighting Upgrade and Smart Sensor Installation Project involves two elements: the retrofit of approximately 8,600 inefficient lighting fixtures to adaptively controlled light-emitting diode (LED) fixtures, and the installation of 4,200 sensors. The project was initiated as an energy efficiency project to save energy and costs associated with the City's outdoor streetlights and to collect mobility and environmental data in our urban environment.

Sensors

The sensors are designed to create a connected digital network that allows the City to better understand the urban environment. Sensor location was designed to help the City extract meaningful data, such as traffic data, pedestrian data, parking data, bicycle data and environmental data that could support City planning and services. Use cases such as parking required more density (more sensors) to achieve the coverage needed whereas use cases such as traffic optimization required less density. Technical aspects such as pole voltage and mounting height were also considered in location planning. These technical factors were considered during installation which in some cases led to moving sensors to nearby poles. These sensors can provide data for approximately 5% of the city's public right-of-way areas which is helping the city in this first step to having a real-time understanding of our urban environment such as traffic congestion, parking utilization, etc.

Types of sensor data:

The sensors use image-processing technology to turn video camera footage and images from sensor cameras into anonymized alpha-numeric data. This alpha-numeric data, also known as “event data,” measures pedestrian, bike, and vehicle movement (counts, direction, and speed), parking activity and environmental conditions (temperature, pressure, and humidity). Image-processing occurs locally on the sensor and the resulting event data are sent to the cloud for access by City staff and the public. Video footage is temporarily stored on the sensors for this data processing purpose, not in the custody of GE or any third-party vendor. Video footage is continually overwritten after five days; overwritten footage is permanently erased. Specific segments of video footage are downloaded and stored prior to being overwritten by the City only if required as part of a criminal investigation. Storage of all of the video footage continually generated by the sensors as a standard practice is cost prohibitive and has no value for City operations.

What the sensors do:

Event data will help City staff provide better services to our residents and increase efficiencies for City operations. In the future, for example, this event data could be used when developing community plan updates. Currently, information about the number of pedestrians or bikes in a corridor is captured either manually or through a simulated model, methods that are either inefficient or less accurate than the sensors.

What the sensors don't do:

The sensors do not have audio capability to record voices or conversations; the only audio capability is measuring decibel levels to hear loud sounds. The video cameras in the sensors are not capable of performing facial recognition or automated license plate reading functionality, nor do they pan, tilt or zoom. During the video camera commissioning process, each video camera is hard-coded to block viewing or recording of private property. All video footage captured by the sensors is stored on the device and continually deleted after five days. Sensor video footage is not continuously real-time monitored by City staff or our private sector partners. The only time sensor video footage is viewed is when the Police Department has requested video as part of a criminal investigation.

How we share data:

Event data (anonymized alpha-numeric data) is currently made publicly available via the City's Sustainability website using an application programming interface (API) key. The City is developing a public dashboard with basic descriptive analytics of event data to share initial insights. The prototype can be found here: <https://sandiego.xaqt.com/>. The vast majority of video is overwritten on the hardware itself and is not accessed or stored by the City. The limited amount of video data accessed by the City is only accessed by the Police Department for investigative purposes and is stored following protocols for digital evidence. Aside from investigations after a crime has been committed, City staff do not view, access, or store any video data.

Update

From March to September 2019 we held 12 community meetings, including at least one meeting in each Council District. Staff from the City's Sustainability Department and Police Department co-presented an overview of lighting and sensor system capabilities, existing usage and future potential use cases for the information collected by the sensors, while gathering community feedback on the project.

Community Feedback

Community feedback focused on 1) supported technology uses and problems that could be solved, and 2) concerns from the community about the project. Feedback is summarized briefly below and a more extensive summary was provided to City Council via the attached memo

Supported Use Cases

With an understanding of the system capabilities provided by the City, meeting attendees expressed support for several applications for the streetlight sensor technology, focusing on specific problems to be addressed in their community and/or council district. Applications generally supported by attendees included, but were not limited to:

- Pedestrian safety consistent with Vision Zero goals, including tracking vehicle speeds;
- Parking utilization and location services; and
- Parking enforcement.

Community Concerns

Several questions and concerns were expressed by meeting attendees. The common concerns about the project included, but were not limited to:

- Potential technical capabilities, whether in use currently or not (e.g., shot spotter);
- Event data protection and use authorization;
- Oversight and use of the video footage, specifically authorization to access video footage, equal access in criminal investigations and sharing of video footage with entities external to the City (e.g., multi-agency law enforcement joint task forces); and
- Process for determining distribution of sensors across the city.

Draft Council Policy

The community concerns centered around several themes: technical capabilities, privacy, transparency, and oversight. This feedback was valuable and we are proposing the attached draft Council policy designed to address those concerns.

The Sustainability Department and Police Department both have existing directives regulating the use and access of sensor data. The Sustainability Department based the draft policy being proposed to Council on these existing department regulations, feedback from the community workshops, and a review of best practices from other jurisdictions throughout the country.

The draft Council policy requires all City staff to disclose to City Council existing or intended use of video or audio footage created by the sensors. As part of the disclosure process, the Mayor will disclose detailed guidance including information on authorized/prohibited use, staff access to data, data protection, data retention, training and planned oversight specific to that proposed use. Additionally, the draft policy authorizes the Mayor to provide access to video or audio footage to the San Diego Police Department for the purpose of conducting criminal investigations.

The policy clarifies or establishes overarching guidance for use of streetlight sensor data including:

- A prohibition on the sale of sensor data by the City or its partners;

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- A prohibition on the transfer of sensor data by the City's partners without the explicit request by the City to do so;
- A prohibition on equipping the sensors with Pan-Tilt-Zoom (PTZ) functionality, video magnification, facial recognition or facial surveillance technology or software, and/or automatic license plate readers;
- A prohibition of public access to use of any video footage or audio created by the streetlight sensors; and
- Creation of an oversight mechanism which requires regular reporting to City Council on the uses of the data.

The policy identifies that the event data (anonymous, alpha numeric data such as the number of bikes or vehicles passing by streetlight sensor at a specific point in time) will be treated as a public data set and made publicly available in accordance with the City's Open Data Policy. The Mayor will work in coordination with the City Attorney to ensure public access to event data is balanced with privacy protections for the City, its residents and visitors.

Next Steps

The Sustainability Department intends to bring the attached draft Council policy to the January meeting of Public Safety and Livable Neighborhoods (PS&LN) Committee for approval. Additionally, the Sustainability Department is currently renegotiating contract terms of the original attached contract with GE to clarify several items that will help mitigate the community concerns especially around technical capabilities and privacy. We intend to amend or add contract items related to equipment warranty, indemnification, intellectual property, data ownership, contract terms for data services and pricing and definitions of the types of data collected by the sensors. The Sustainability Department expects to bring a proposed contract amendment for approval to the February meeting of the Public Safety and Livable Neighborhoods Committee and subsequently to City Council.

Please reach out to me at CHooven@sandiego.gov (619) 236-6563 or Colin Santulli at csantulli@sandiego.gov (619) 236-6307 if you have any questions pertaining to this update and process.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Cody Hooven', with a long horizontal flourish extending to the right.

Cody Hooven
Director, Sustainability Department

- Attachments: 1. Council Memo on Smart Streetlight Community Outreach
2. Draft Council Streetlight Sensor Data Use Policy
3. GE Current Master Lease Agreement

cc: Aimee Faucett, Chief of Staff, Office of the Mayor
Kris Michell, Chief Operating Officer
Ronald H. Villa, Assistant Chief Operating Officer
David Nisleit, Chief of Police
Rolando Charvel, Chief Financial Officer
Alia Khouri, Deputy Chief Operating Officer
Johnnie Perkins, Deputy Chief Operating Officer
Jeff Sturak, Deputy Chief Operating Officer, Internal Operations
Almis Udrys, Deputy Chief of Staff, Office of the Mayor
Jessica Lawrence, Director of Finance Policy & Council Affairs, Office of the Mayor
Craig Gustafson, Interim Director, Communications Department
Jeffrey Jordon, Captain, Police Department

