



The City of San Diego

Staff Report

DATE ISSUED: 1/17/2019
TO: City Council
FROM: Sustainability Department
SUBJECT: Draft Council Policy on Streetlight Sensor Data Use for Consideration and Adoption

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Council District(s): Citywide

OVERVIEW:

The principal goal of the City in deploying Streetlight Sensors is to better understand the urban environment and to use these insights to provide improved services to San Diego residents and visitors.

This Council Policy would create guidelines for the data generated by the City's streetlight sensors. It includes overarching direction on the proper use, access and dissemination of streetlight sensor data, and outlines a process for disclosure of all access to audio and/or video footage from the sensors.

PROPOSED ACTIONS:

The Mayor recommends that the Council adopt this Council Policy governing the use of data generated by the City's Streetlight Sensors.

DISCUSSION OF ITEM:

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 Outdoor Lighting Upgrade and 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 is occurring in two phases. Phase 1 took place from Fall 2018 to Summer 2019 and included 4,700 light fixtures and 3,200 sensors. Phase 2 will include the remaining 3,900 light fixtures and 1,000 sensors. Phase 2 will commence in Spring 2020 and is scheduled to be complete by the end of the calendar year 2020.

The sensors create a connected digital network that allows the City to better understand the urban environment. The sensors work by using image-processing technology to turn images from sensor cameras into data about the urban environment within the public right-of-way. This software processing

occurs locally on the sensor and the resulting data is sent to the cloud for access by City staff and the public. The camera footage is stored locally on the devices and continually overwritten once the data of interest is sent to the cloud. Sensor location was designed to help the City extract meaningful data, such as traffic data, pedestrian data, parking data, bicycle data and environmental data in a manner that would best represent the cross-section of our core activity areas. Use cases such as parking required more density (more sensors) to get the coverage needed whereas use cases such as traffic optimization required far less density. Technical aspects such as pole voltage and mounting height were also considered 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.

What the sensors do:

The streetlight sensors convert images into anonymized alpha-numeric data about pedestrian, bike, and vehicle movement (counts, direction, and speed), parking activity (collectively referred to as "event data"), and environmental conditions (temperature, pressure, and humidity). Data collected by the streetlight sensors will help City staff provide better services to our residents and increase efficiencies for City operations. For example, data about number of pedestrians or bikes are currently captured either manually or through a simulated model, methods that are either inefficient or less accurate.

What the sensors do not do:

The streetlight sensors do not have audio capability (other than measuring decibel level), facial recognition or license plate reading functionality; the cameras in the streetlight sensors do not pan, tilt or zoom, nor can they view or record private property. All camera footage captured by the streetlight sensors is stored locally on the sensor and continually deleted after five days.

Community Feedback

With both the transfer of this project from the Environmental Services Department to the Sustainability Department and the evolving use cases of the streetlight sensor data, the Sustainability Department wanted to ensure residents understand this new technology deployment. To this end, a series of community meetings were held to 1) explain what the sensors can and cannot do, and 2) to receive feedback from the community on desired applications and concerns surrounding the technology.

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 capabilities, existing usage and future potential use cases for the information collected by the sensors, while gathering community feedback on the project. Community feedback was used to inform the development of the draft policy.

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 with a more extensive summary provided as an attachment to the memo submitted from Cody Hooven, Director, Sustainability Department to City Council on October 14, 2019.

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:

- 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);
- Potential technical capabilities, whether in use currently or not (e.g., shot spotter);
- Process for determining distribution of streetlight sensors across the city; and
- Event data protection and use authorization.

This project is highly technical and has led to several misunderstandings of the technical capabilities of the streetlight sensors. Throughout the community meetings staff attempted to clarify misinformation around streetlight sensor capabilities; however, attendees maintained firm positions on the following concerns:

- Potential to use video footage to proactively profile specific groups within the community, particularly members of faith groups;
- Surveillance capabilities and intent; and
- True technological capabilities (e.g., facial recognition, automated license plate reader, audio surveillance).

Draft Policy

The Sustainability Department and Police Department both have existing policies regulating the use and access of streetlight sensor data. City staff based the draft policy on the existing department policies, as well as feedback from the community workshops, broad stakeholder engagement and a review of best practices from other jurisdictions in California, including the City of Oakland and Santa Clara County.

The policy requires City staff to disclose in advance to City Council any planned and existing use of video or audio footage created by the streetlights, except in clearly defined exigent circumstances or large-scale events. As part of the disclosure process, the Mayor and their designee must submit detailed usage guidelines including information on authorized/prohibited use, staff access to data, data protection, data retention, training and planned oversight specific to that proposed use.

The policy establishes overarching guidance for use of streetlight sensors data including:

- A prohibition on the sale of streetlight sensor data by the City or its partners;
- A prohibition on the transfer of streetlight sensor data by the City's partners without the explicit request by the City to do so;
- A prohibition on equipping the streetlight sensors with Pan-Tilt-Zoom (PTZ) functionality, video magnification, facial recognition technology or software, and/or automatic license-plate readers (ALPR);
- 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 and their designee will work in coordination with the Office of the City Attorney to ensure public access to "event data" is balanced with privacy protections for the City, its residents and visitors.

City Strategic Plan Goal(s)/Objective(s):

Goal #1: Provide high quality public service

Objective #4: Ensure equipment and technology are in place so that employees can achieve high quality public service

Goal #2: Work in partnership with all of our communities to achieve safe and livable neighborhoods.

Objective #1: Protect lives, property and the environment through timely and effective response in all communities.

Objective #2: Reduce and prevent crime
Objective #4: Foster services that improve quality of life

Goal #3: Create and sustain a resilient and economically prosperous City.
Objective #1: Create dynamic neighborhoods that incorporate mobility, connectivity and sustainability.
Objective #4: Prepare and respond to climate change.
Objective #5: Enhance San Diego's global standing.

Fiscal Considerations:

There are no fiscal considerations for this action.

Charter Section 225 Disclosure of Business Interests:

There is no contract associated with this action.

Environmental Impact:

This activity is not a project as defined by the California Environmental Quality Act Section 21065 and State CEQA Guidelines Section 15378(b)(5), as it is an organizational or administrative activity of government that will not result in direct or indirect physical changes in the environment. Therefore, this activity is not subject to CEQA pursuant to CEQA Guidelines Section 15060(c)(3).

Equal Opportunity Contracting Information (if applicable):

There is no contract associated with this action.

Previous Council and/or Committee Actions:

The Council authorized a purchase and service agreement with Current, powered by GE, a subsidiary of General Electric and a Master Lease Agreement with GE Government Finance, Inc at the Dec 6, 2016 City Council meeting. The master lease agreement funded the retrofit of approximately 14,000 City-wide outdoor lighting with more energy efficient technology and sensors.

The Sustainability and Police Departments jointly presented an Information Item on the streetlight sensor project at the June 6, 2019 Public Safety and Livable Neighborhoods (PS&LN) Committee. The Sustainability Department provided an update on the project and the planned community outreach at the June 6th PS&LN Committee meeting with plans to provide a follow-up report after the community outreach concluded. The Sustainability Department sent a memo to City Council on Oct 14, 2019 summarizing the community outreach. The Policy Department provided an update on the use of streetlight sensor video footage to enhance criminal investigations.

Key Stakeholders and Community Outreach Efforts:

Please refer to the *Community Feedback* section above.

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