



CITY COUNCIL STAFF REPORT



July 26, 2022

ITEM TITLE

Agreement: Approve a Research Use Agreement with the Regents of the University of California
Authorizing the Installation of Lighting Technology at SDG&E Park

Report Number: 22-0198

Location: SDG&E Park, 1450 Hilltop Drive

Department: Economic Development

Environmental Notice: The Project qualifies for a Categorical Exemption pursuant to the California Environmental Quality Act State Guidelines Section 15301 Class 1 (Existing Facilities), Section 15302 Class 2 (Replacement or Reconstruction), and Section 15303 class 3 (New Construction or Conversion of Small Structures).

Recommended Action

Adopt a resolution approving the Research Use Agreement with the Regents of the University of California authorizing the installation of lighting technology at SDG&E Park.

SUMMARY

Exterior lighting generally operates from early evening through early morning, a period of little to no renewable energy generation, which means this lighting is primarily powered by carbon-dense fossil fuels. Fossil fuel use is a significant contributor to greenhouse gas emissions, poor air quality, water pollution, and land degradation. In addition, low-quality exterior lighting characterized by poor color, inappropriate light distribution, and inadequate light levels and has also been linked to increased crime rates and reduced physical activity within the surrounding community. Many cities struggle with maintenance challenges for aging exterior light fixtures. The California Energy Commission funded the California Lighting Technology Center at the University of California - Davis to address these issues. The City of Chula Vista was included as a partner and a planned demonstration site for new lighting technology at SDG&E Park which has been identified to receive up to 40 new grid-connected luminaires with solar power and battery storage, at no cost to the City.

ENVIRONMENTAL REVIEW

The Director of Development Services has reviewed the proposed project for compliance with the California Environmental Quality Act (CEQA) and has determined that the project qualifies for a Categorical Exemption pursuant to State CEQA Guidelines Section 15301 Class 1 (Existing Facilities), Section 15302 Class 2 (Replacement or Reconstruction), and Section 15303 class 3 (New Construction or Conversion of Small Structures) because the proposed actions would not result in a significant effect on the environment, create a cumulative impact, damage a scenic highway, or cause a substantial adverse change in the significance of a historical resource. Thus, no further environmental review is required.

BOARD/COMMISSION/COMMITTEE RECOMMENDATION

Not applicable.

DISCUSSION

Exterior lighting generally operates from early evening through early morning, a period of little to no renewable energy generation, which means this lighting is primarily powered by carbon-dense fossil fuels. Fossil fuel use is a significant contributor to greenhouse gas emissions (GHG), poor air quality, water pollution, and land degradation. In addition, low-quality exterior lighting characterized by poor color, inappropriate light distribution, and inadequate light levels has also been linked to increased crime rates and reduced physical activity within the surrounding community. For many California cities, antiquated electrical infrastructure combined with aging fixtures and sources has created insurmountable maintenance challenges resulting in inoperable luminaires that further exacerbate already poor exterior lighting conditions. Combine these conditions with Public Safety Power Shutoffs (PSPS), which are increasingly common, and you have a carbon-intensive system that disproportionately impacts disadvantaged and low-income communities already suffering from an unsafe exterior environment with substandard lighting.

To address these issues, the California Energy Commission (CEC) funded California Lighting Technology Center (CLTC) at University of California – Davis (UC Davis) to develop and demonstrate renewable energy and advanced lighting (REAL) systems equipped with many of the advanced features absent from today's commercial exterior lighting systems. These features include hybrid power (solar and grid-tied); battery energy storage (BES); control systems equipped with two-way communication between the grid/utility and the lighting network for real-time updates (i.e., time-of-use, PSPS, etc.); best-in-class energy-efficiency; predictive and adaptive occupancy-based dimming; and use of circadian-appropriate lighting spectrum. REAL systems will be designed specifically to have hybrid power, smart controllers for best battery charging time, light and health, reduced carbon emissions, reliability, and community safety.

Importantly, this project re-invents lighting design practices specifically for low-income and disadvantaged communities by engaging residents and business owners directly in a series of local community studies and technology demonstrations. Only by pursuing this inclusive, community-focused relighting strategy can the true potential of energy-efficient, demand-flexible, exterior lighting for improved safety and health be realized. CLTC will collaborate with its industry partners and committed demonstration communities, including the City of Chula Vista, to ensure REAL systems meet community technical and cost effectiveness needs, including:

- Reduced energy use of up to 80% compared to each community's baseline
- Stored solar electricity in an integrated battery that can power the luminaires at night
- Integrated adaptive, networked controls to enable grid flexibility capabilities that maximize the use of low-or-no carbon electricity sources
- Occupancy and schedule-based dimming
- Interconnection with utility to participate in net energy metering or similar utility programs, where available
- Safety and security, glare reduction, enhanced visibility and safety for drivers and pedestrians
- Potential for deployment of REAL systems in other communities after the project concludes.

Specifically, this project will provide much-needed outdoor lighting to SDG&E Park and will allow members of the community to participate in the research process. A planned demonstration site for new lighting technology at SDG&E Park has been identified to receive up to 40 new grid-connected luminaires with solar power and battery storage, at no cost to the City. As the lights will be powered by stored solar electricity, the City should realize utility savings and resiliency in the event of a power outage. This project is near Loma Verde Recreation Center and will be a complement to the reconstruction work taking place at that location.

The City's Office of Sustainability will coordinate with CLTC on this project, in conjunction with Public Works and the Community Services Departments.

Energy and environmental condition monitoring equipment will be installed on the existing light poles to determine the baseline lighting operation and electric load, as well as be used to monitor the new REAL system after retrofit is completed. Data collected from the monitoring equipment will be securely stored using the ezeio mkII Cloud Software service. Real-time access to data is restricted to CLTC staff via a secure login and password and data will be available upon request to project partners. Data analysis will be performed to understand the system performance with respect to potential energy savings, peak demand reduction, grid flexibility potential, and economic analysis.

LED luminaires, solar panels and/or batteries, and lighting control systems will be installed, monitored, evaluated, and maintained by CLTC until March of 2025 at CLTC's sole cost. Data collection by CLTC will take place at regular intervals and upon completion of the grant period, the lighting units will remain in place and become property of the City of Chula Vista. Data collection will end, and monitoring equipment will be removed by March of 2025, but LED luminaires, solar panels and/or batteries and lighting control systems will remain installed. After this period maintenance of the lighting system will become the responsibility of the City. In addition, CLTC has identified SBCS as a local Community Based Organization and will work with them on a series of outreach events to survey the local community over the course of this project. Community members will be engaged in the process by providing input on the plans and having evening guided tours before and after installation of the new lighting technology.

Through this action, staff is recommending that the City Council approve a Research Use Agreement with The Regents of the University of California to authorize the installation of lighting technology at SDG&E Park.

DECISION-MAKER CONFLICT

Staff has reviewed the property holdings of the City Councilmembers and has found no property holdings within 1,000 feet of the boundaries of the property which is the subject of this action. Consequently, this item does not present a disqualifying real property-related financial conflict of interest under California Code of

Regulations Title 2, section 18702.2(a)(7) or (8), for purposes of the Political Reform Act (Cal. Gov't Code §87100, et seq.). Staff is not independently aware, and has not been informed by any City Council member, of any other fact that may constitute a basis for a decision-maker conflict of interest in this matter.

CURRENT-YEAR FISCAL IMPACT

There is no fiscal impact to the General Fund as a result of this action as these units are being installed at no-cost to the City.

ONGOING FISCAL IMPACT

It is expected that the City will realize a decrease in energy costs for lighting at this park, which will result in savings to the General Fund.

ATTACHMENTS

1. Research Use Agreement

Staff Contact: Eric Crockett, Deputy City Manager or Coleen Wisniewski, Environmental Sustainability Manager