INFORMATION ITEM
MEMORANDUM

To: Mayor and Members of Council

From: Natalie Stiffler, Transportation and Mobility Director
Jonathan Koehn, Climate Initiatives Director
Lex Telischak, Electrical Engineer Senior
Merry Martin, Senior Project Manager
Devin Joslin, Civil Engineering Senior Manager
Carolyn Elam, Sustainability Senior Manager
Emily Sandoval, Climate Engagement Project Manager

Date: August 17, 2023

Subject: Update Xcel Energy Streetlight Acquisition and LED Conversion

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EXECUTIVE SUMMARY

The city's streetlighting system is a hybrid of city- and Xcel Energy-owned and operated fixtures. For many years, the city has been interested in converting the Xcel Energy streetlight system to LED luminaires for energy savings, greenhouse gas reduction, cost savings, reduced maintenance, better visual acuity and the ability to remotely monitor and control streetlights. Starting in 2020, staff undertook a study to identify a path forward. This study formed the basis for a staff recommendation to acquire approximately 4,500 streetlights currently owned and operated by Xcel Energy. Staff's recommendation was discussed with City Council at its July 28, 2022, Study Session. As a result, City Council directed staff to move forward with city acquisition and conversion of the existing Xcel Energy streetlight system.

Staff is currently making progress on this effort and anticipates some key milestones in the months ahead. This Information Packet (IP) is to provide council with updates on 1) progress towards the acquisition of the Xcel Energy streetlights, 2) planned community engagement to inform the LED conversion of the streetlights and 3) resourcing for the separation, conversion and maintenance of the streetlighting system.

FISCAL IMPACT

As previously approved by Council as part of the 2023 budget approval process, acquisition, separation and conversion of the Xcel Energy streetlights will be funded from the CCRS (Community, Culture, Resilience and Safety Tax) tax fund. Approximately $3.4 million was allocated from the CCRS for the purchase costs. Approximately $3.8 million remains allocated from the CCRS for separation and conversion to LED streetlights. Ongoing operational and maintenance costs, including the 2024 budget request from Transportation & Mobility for one FTE to provide direct support for asset management, will be covered from the existing Transportation and Mobility budget.

COMMUNITY SUSTAINABILITY ASSESSMENTS AND IMPACTS

- Economic: High-performing and reliable streetlights will be efficient, dimmable and allow for greater cost control. Given the cost savings associated with city ownership, reduced energy costs and other efficiencies, the city estimates it can save taxpayers more than $500k per year in operational and maintenance costs. Cost efficiencies will also be gained by consolidating the city streetlighting assets under a single ownership model.
- Environmental: Since LEDs are much more efficient than their high-pressure sodium (HPS) counterparts, the city estimates that by converting all city streetlights, it can reduce greenhouse gas emissions associated with the electricity use of streetlights by about 1,000 metric tons of carbon annually. Remote control operation can be used to dim fixtures in the evening/early morning to further reduce energy consumption, reduce environmental impacts, and improve Dark Skies compliance. As can be observed with all lighting systems, such as the one currently being acquired, it will have to be managed in such a way to maximize its efficiency and to minimize its negative impacts on the environment and community.
- Social: Better quality lighting with improved visual acuity and smart, self-reporting outages will provide for the safety and comfort needs of all community members. Over the long term, the city will be better able to address inequities in service. Staff will meet with Community Connectors in residence to assess the potential racial equity impacts of the conversion, with a focus on ensuring that historically excluded communities have a say in Boulder's future streetlight system.

BACKGROUND

There are three phases of this project that are now actively under way: legal acquisition and purchase from Xcel Energy, community engagement to inform the technology selection(s) for LED conversion, and contracting for the separation, conversion and maintenance support.

Please see the study session memo from July 28, 2022 for more background information, including staff's analysis of the existing system condition, cost/benefit analysis of system acquisition and maps of the Xcel and City Streetlight system.

ACQUISITION

At its July 28, 2022 Study Session, City Council unanimously supported the acquisition of Xcel Energy's streetlights. Since that time, city staff have been working with Xcel Energy to negotiate the sale, purchase, and transition of the streetlighting system. These efforts focused on resolving a number of key issues:

- Discrepancies in lighting counts and assets to be purchased
- Assignment of easements
- Establishing agreements between the city and third parties for existing attachments involving streetlights
- Ensuring clarity around roles, responsibilities, process, and expectations for system separation

The project remains on track and within budget. The city and Xcel Energy are nearing a successful completion of negotiations and expect that an application will be made to the Colorado Public Utilities Commission (CPUC) to approve the acquisition of the streetlight system before the end of Q3 2023, with the potential for the acquisition to be completed in Q4 2023 or Q1 2024. Separation and conversion work would be expected to begin in early 2024.

Negotiations have been successful in resolving all major issues. Once the city and Xcel Energy agree on the full set of terms and finalize the documents, Xcel Energy will prepare and submit an application to the Colorado Public Utilities Commission, who holds the final authority for approving the sale. This process has typically taken less than 120 days, but this timeline could be extended depending on any intervention in the proceeding by other parties.[1]

Tentative key 2023 milestones for acquisition are below:

Q3: Complete purchase and sale agreement negotiations with Xcel Energy and submit Agreement to the Public Utilities Commission (CPUC)

Q4: PUC decision on acquisition

Q4: If approved, acquisition funds transferred to Xcel Energy

COMMUNITY ENGAGEMENT/PILOT

Following acquisition of the streetlights, it is the city's intent to begin converting them to LEDs over an approximate two-year period in concert with separation work. This is important, not just for emissions and cost savings, but also to improve the overall reliability and performance of the system. Staff have been working with our expert consultants, Realterm Energy, to narrow down the wide array of LED options to a subset that would be best suited based on current system design and city lighting conditions. The next step will be to solicit feedback from the community with particular emphasis on the main issue of community concern, which is color temperature.

Two pilots have been designed, one for major roadways (to simulate options along roadways with corridor lighting) and the other for residential areas. Both pilots will launch towards the end

[1] The municipalities of Golden and Greenwood Village are the only two municipalities to acquire the non-metered Xcel Energy streetlight system in their jurisdictions. In both cases, the CPUC process concluded in approximately 120 days or less.

of August and include community engagement, as described in more detail below. Based on community feedback, staff will refine the recommended implementation to select a fixture color temperature for both application types.

Major Roadways

- 28th Street South of Iris Ave/Diagonal Hwy
- Higher traffic area
- 10 lights with 4 different color temps

Residential Roadways

- Spruce Pool
- Lower Traffic Area
- 4 lights with 2 different color temps

Figure 1: An aerial view of the Iris and 28th St. intersection. The LED pilot lights will be installed south of this intersection, indicated by the yellow circles.

Figure 2: An aerial view of Spruce Pool. The LED pilot lights will be installed on the deck of the pool, indicated by the green circles, and are visible from the surrounding sidewalk.

Engagement Strategy

Every Boulder resident, business and visitor interacts with streetlights. Recognizing their important role as community infrastructure, the city has planned appropriately scaled community engagement to ensure that Boulder's light selection reflects community desires.

While there are many streetlight-related issues upon which the city could engage (i.e., where streetlights are located, how lighting affects different road users, advancing toward the city's dark skies goals, etc.), the purpose of engagement at this time is confined to the decision at hand: what color temperature streetlights does the community prefer in residential and roadway settings?

To obtain this feedback, the city is planning a three-pronged engagement approach.

1. In-person pilot

   Described above, there will be two in-person demonstrations of potential streetlight color temperatures. The city will demonstrate residential-area streetlights at the Spruce Pool and roadway streetlights along 28th St. south of the Iris and 28th St. intersection. Visitors to the demonstration sites will be able to participate in an online survey to identify their preference, provide written feedback and share demographic information. The online questionnaire will be open for six weeks and will be available in English and Spanish. Signs will direct visitors to the online survey (Figure 3).

Similar BeHeardBoulder and in-person questionnaires typically receive between 100 and 1,000 responses during a six-week window. The city hopes to reach at least 250 community members total as a part of this engagement, and an additional 100 through surveys at city events.

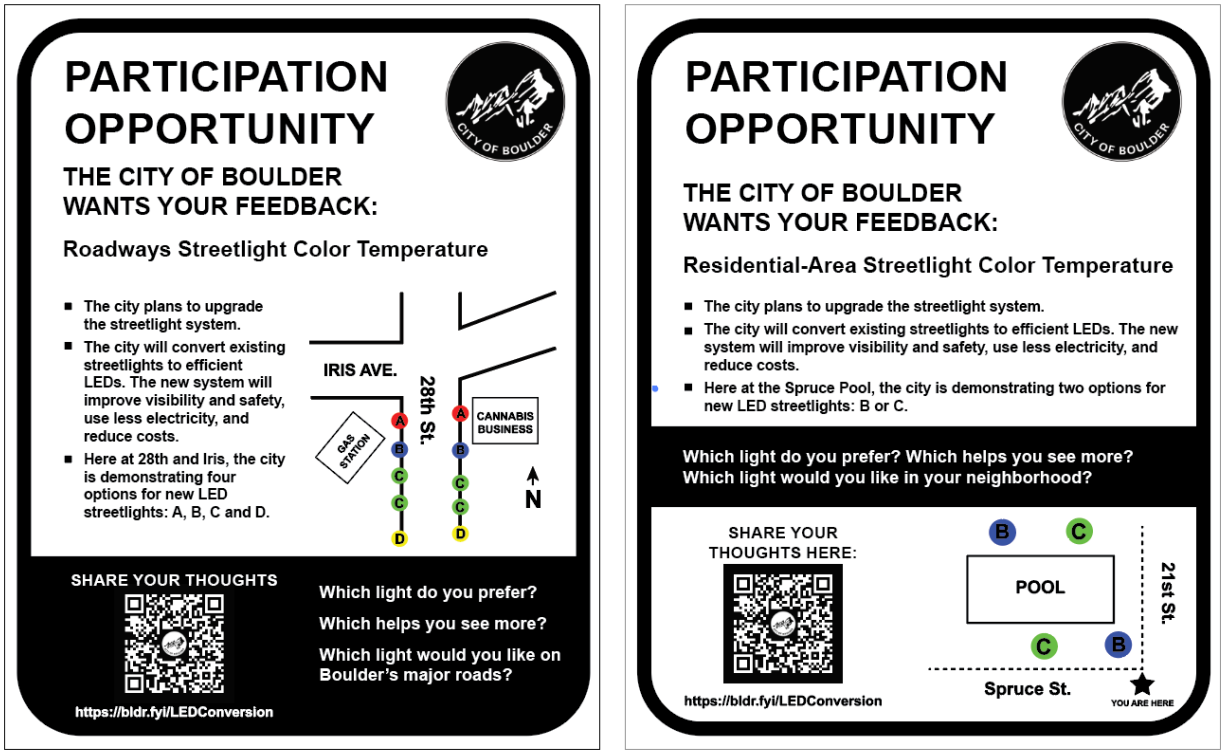

Figure 33: Signage for the in-person streetlight pilots will be available in English and Spanish.

2. General Questionnaire

   Recognizing that not everyone will have a chance to visit the demonstration sites, the city will also offer a general questionnaire. The questionnaire will have images of different

streetlight color temperatures. Participants will be able to indicate their preference, share written feedback and provide demographic information. This survey will be available on Be Heard Boulder and on paper at appropriate city events, such as What's Up Boulder. The city will collect responses for six weeks. The questionnaire will be available in English and Spanish.

3. Community Connectors

The city also plans to attend an upcoming Community Connectors in Residence meeting to obtain feedback on the color temperature and gain insights into other ways to engage historically excluded communities.

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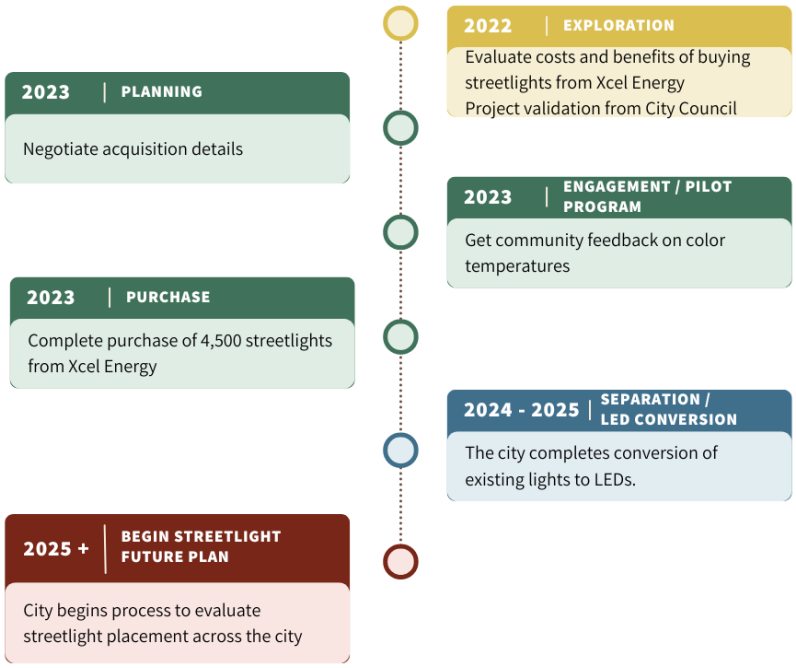
Engagement Promotion

The city will use many of its communications tools to promote the streetlight pilot and questionnaires, including a press release, website promotion, social media posts, email newsletters and on-site signage.

NEXT STEPS

Project Timeline:



RESOURCING FOR POST-ACQUISITION

Following acquisition of the system, the city will be required to install temporary points of separation (typically accomplished by the installation of a fuse at the base of a pole or string of lights at the most reasonable point) based on the separation plan negotiated between the city and Xcel Energy. This will be done in conjunction with the LED conversion. The city will be hiring a contractor to perform this work through a competitive bid process. Staff expect to release the Request for Bids in Q4. The contract will also include support for warranty repair, and ongoing maintenance. As previously discussed with council, staff will be conducting a cost-benefit analysis for in-house resourcing of long-term maintenance and repair and would bring recommendations regarding this back to council at a future date as part of the annual budgeting process.

Staff will advise council once the CPUC approves the acquisition of the streetlight system and if there are any deviations from the original budget.

Please direct any questions or concerns to Merry Martin: MartinM@bouldercolorado.gov.

Please feel free to spread the word about this exciting engagement opportunity to help provide feedback to shape the city's streetlighting future.