



## STUDY SESSION MEMORANDUM

**TO:** Mayor and Members of City Council

**FROM:** Jonathan Koehn, Interim Climate Initiatives Director  
 Natalie Stiffler, Interim Transportation and Mobility Director  
 Michael Gardner-Sweeney, Transportation Operations Engineer  
 Carolyn Elam, Sustainability Senior Manager  
 Lex Telischak, Electrical Senior Engineer

**DATE:** July 28, 2022

**SUBJECT:** Study Session for July 28, 2022  
 Xcel Energy Streetlight Acquisition and LED Conversion

### 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/GHG reduction, cost savings, reduced maintenance, better visual acuity, and ability to remotely monitor and control. Starting in 2020, staff undertook a study to identify a path forward. Based on this study, staff is recommending moving forward with city acquisition and conversion. Projected annual operating/maintenance savings of \$1.1M provides a return on investment within 9 years. A summary of the acquisition option is provided in the table below.

<b>Xcel Energy Streetlight System Acquisition and LED Conversion</b>	
Streetlights Acquired	4,540
<b>Acquisition</b>	
Acquisition	\$3.6M
LED Conversion (smart controls) Cost	\$3.4M
<b>Total</b>	<b>\$7.0M</b>
<b>20-year Project Savings</b>	
20-year Project Savings	\$13.6M
Return on Investment	9 years
Annual Operating/Maintenance Savings	\$1.1M
Annual Electricity Consumption Reduction (kWh)	2.3M
Annual Green House Gas Reduction (metric tons)	1,057

Based on council’s feedback, staff would bring the final decision for the acquisition and LED conversion back to council as part of the 2023 budget approval process.

## **QUESTIONS FOR COUNCIL**

1. Does City Council agree with the staff recommendation to acquire the Xcel Energy streetlighting system?
2. Does City Council have any feedback on the staff recommended approach to the LED conversion?

## **BACKGROUND**

The city's streetlighting system is a hybrid of city and Xcel Energy owned and operated fixtures. Of the approximate 5,100 streetlights, the majority (approximately 4,500) are owned by Xcel Energy. The remaining 600 are city owned and operated. See attachments A and B, maps of the two systems respectively. The current Xcel Energy streetlight system is primarily high-pressure sodium (HPS) luminaires, which are a less desirable technology due to their energy requirements and lighting capabilities. Additionally, the Xcel Energy system has no remote monitoring or control capability and requires an individual to call in an outage for Xcel Energy to know that maintenance is required. In contrast, the city-owned streetlights are almost exclusively LED fixtures that incorporate "smart" technology to provide remote status reporting and control. Remote control is used to dim fixtures in the late evening/early morning to reduce energy consumption and environmental impacts.

For many years the city has been interested in converting the Xcel Energy streetlight system to LED luminaires for energy savings/GHG reduction, cost savings, reduced maintenance, better visual acuity, and ability to remotely monitor and control. The city has been constrained in effecting this change due to the existing regulatory structure that governs Xcel Energy's offerings and the limited technology solutions that Xcel Energy has available. Following the community vote to enter into a new franchise agreement with Xcel Energy, the city and Xcel Energy launched a project to explore solutions to achieving these goals. A formal project, staffed by city and Xcel Energy staff, was launched beginning in November 2020 to explore options that included:

- LED conversion through Xcel Energy's existing program with and without up-front investment from the city
- Developing an alternative program offering and rate design in coordination with Xcel Energy and other communities that could be presented to the Public Utility Commission (PUC)
- Acquisition of the streetlighting system by the city and subsequent retrofit

Based on the project team's analysis, the joint recommendation was that acquisition was the preferred pathway to proceed. -Following this recommendation, the project team proceeded by contracting an inventory and separation study, conducted by Pike Engineering. -That study forms the basis of the acquisition cost.

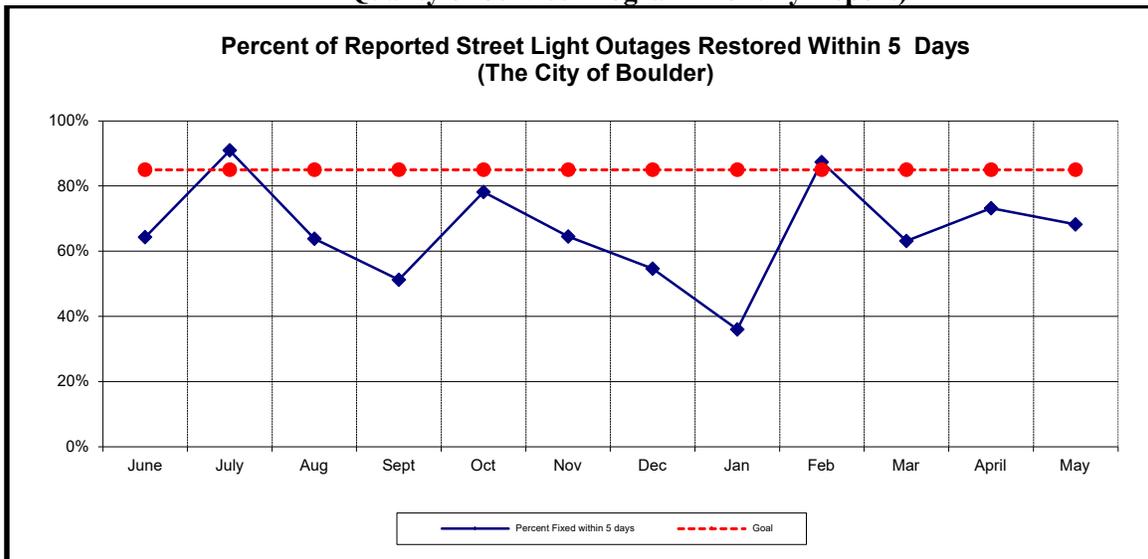
In parallel, city staff contracted with RealTerm Energy, a global leader in streetlighting systems who has extensive experience working with municipalities on streetlight acquisition, conversion and operation, to support staff in both independent analysis and

developing a full financial model to inform the acquisition decision. -Staff also conducted benchmarking interviews with peer Colorado communities.

**ANALYSIS**

**System Condition** – While cost and efficiency are key parameters for the cost/benefit analysis, first and foremost, the streetlighting system is intended to serve the critical safety and security needs of the community. To effectively do this, it must be reliable and resilient. While Xcel Energy night crews will periodically identify areas of outage, the primary method of outage identification is for individuals within the community to observe the outage and then report it. Many may not know that they need to report the outage or even how to go about reporting the outage. This leaves many outages unidentified, and segments of the community disproportionately impacted by outages. When an outage does get reported, Xcel Energy’s target is to repair 85% of outages within 5 days, however, their actual performance has historically been well below that target. Figure 1 below shows repair performance for streetlights within Boulder for the most recent 12-month period as self-reported by Xcel Energy. In many cases, where the 5-day or less target is not met, the repair times are on the order of weeks and even months. As a benchmark, from the May 2022 report, 44 outages were recorded; of those, 30 were repaired within 5 days, 8 repairs were completed within 6-25 days, and 6 had remained unrepaired for 20-45 days. The city recently received reimbursement of monthly charges from Xcel Energy for a light that had gone unrepaired for more than a year. -While staff continue to seek avenues to address the current deficiencies in performance on repairs, even if Xcel Energy were to consistently meet their target, this still would not address the issue of the many lights that go unreported.

**Figure 1 – Xcel Energy Streetlight Repair Performance (Source: Xcel Energy Quality of Service Program Monthly Report)**



In addition to safety and reliability, another area of concern is light pollution. Currently, the streetlights are exempt from the city’s Dark Skies requirements; they remain a leading source of light pollution within the city boundaries. Within the current Xcel Energy LED

streetlight offering there is not a product that would meet the dark sky standards. Shading and other strategies that could be used to reduce fugitive light emissions would be an added cost to the city were the city to pursue an LED retrofit through Xcel Energy.

**Cost/Benefit Analysis** - The financial analysis considered two potential paths to LED conversion:

- Continuing with Xcel Energy ownership, or
- City acquisition.

Under either conversion model cost reduction associated with the energy savings from LED conversion is the funding mechanism for conversion. The city currently spends approximately \$1.4M annually on Xcel Energy streetlight operation and maintenance. On average, costs have been increasing at a rate of 9% annually. For the cost analysis, staff assumed a more conservative escalation rate of 3%.

Conversion to LED's will result in an approximate 70% annual reduction in energy use. The associated reduction in operating cost provides the financial resources to fund the conversion over time.

The potential paths were evaluated based on cost, GHG reduction, available replacement fixture options, maintenance, smart control technology, and customer service.

Conversion to LED luminaires will significantly reduce related Greenhouse Gas emissions:

- Current Annual Energy Consumption (kWh) = 3.2M
- Projected LED Annual Energy Consumption (kWh) = 0.9M
- Annual Savings (kWh) = 2.3M
- Estimated Annual GHG Reduction (metric tons) = 1,057

**Continued Xcel Energy Ownership** – The Colorado PUC has approved an Xcel Energy LED conversion tariff where municipalities can pay a higher monthly rate in lieu of being charged up front for the cost of conversion. While the tariff provides a path to conversion, the ongoing operating cost savings is only a small fraction of the actual energy savings. While the tariff provides a conversion path that does not require up-fronting the cost of converting the luminaires, the city would be obligated to remain on this rate going forward. The net result is that the city would not realize long-term ongoing cost savings despite the substantial reduction in energy consumption. The LED Street Light Service Rate (Schedule SL) includes paying a fixed non-metered rate per fixture, all non-routine maintenance charges, and any associated costs if the fixture is removed in the future. Replacement LED luminaires are limited to standard Xcel Energy fixtures (photometrics, wattage, and color temperature (3,000 K)). Xcel's LED conversion options are also limited in availability. During the 2021 analysis the city was told that only approximately 60% of the current fixtures would be eligible for upgrade to LED, where the others would either be subject to modifications at the city's expense or await future availability.

From an emissions perspective, the two options are somewhat similar, though it is anticipated that having Xcel Energy continue to own and operate their lights will result in less reduction due to the lack of dimming capabilities. From a maintenance perspective the current response-based maintenance would continue due to the lack of smart controls. Current poor customer service levels would continue.

**City acquisition** –Several Colorado municipalities including Golden, Englewood and Greenwood Village have acquired, or are in the process of acquiring, their streetlight systems from Xcel Energy. The process involves negotiating the acquisition price, separating the streetlights from the Xcel Energy electric grid, upgrading to LED fixtures, and taking over the ongoing maintenance of the system. The city contracted with RealTerm Energy, a national leader in streetlight acquisition, conversion, and operation, to evaluate acquisition and conversion options. Based on their analysis, and validated through staff’s benchmarking with peer communities, acquisition would lead to substantial cost savings and operational improvements for the city. The projected cost of acquisition, LED conversion, and smart controls is \$7.0M.

Conversion to LED luminaires will reduce energy use by 70%. In addition, conversion from the Street Light Service Rate (Schedule SL) to the Energy-only Street Light Service Rate (Schedule ESL) will reduce our energy expenses by 85%. Coupled with the anticipated reduction in non-routine maintenance costs it is anticipated annual operations/maintenance costs will be reduced 80%. Return on investment is estimated to be 9 years. 20-year project savings is estimated to be \$13.6M.

### **Funding/Financing Options**

The significant potential operation and maintenance cost savings from acquisition and LED conversion provides the funding to pay for the cost of acquisition, conversion and financing. There are a range of public and private sector options to finance the project.

#### **Financing Options**

1. Self-Financing
2. Tax Exempt Lease-Purchase structures (also known as Municipal Leases or TELPs)
3. Smart Infrastructure As A Service (SiAAS)
4. Energy Performance Contract (EPC)
5. Public Private Partnerships (PPPs)

For the three private-sector financing schemes a portion of the savings is directed to a third party to pay back the principal and interest. The primary advantage of the third-party financing schemes is no upfront capital is required. The tradeoff is the high effective cost of acquisition and the fact that operational savings are not realized by the city for a period of time.

For cost effectiveness and the benefit of more immediately being able to reinvest some or all of the cost savings in other community priorities, such as roadway and bridge repairs,

staff anticipate that the Community, Culture, Resilience and Safety (CCRS) Tax will be the proposed source of funding identified in the 2023 budget proposal.<sup>1</sup>

A summary of the advantages and disadvantages of the different financing options is provided in attachment C.

## **NEXT STEPS**

Based on City Council feedback staff will finalize next steps in the process including:

- Formalizing the 2023 budget request to include acquisition and LED conversion,
- Planning for and implementing LED conversion demonstration pilots,
- Establishing streetlighting standards/practices,
- Formalizing the LED conversion and system improvement implementation plan.

LED Conversion Pilot – A significant next step, if the decision to acquire is made, will be to pilot the conversion in several locations/areas, so community members will have the opportunity to review and provide feedback on the different fixture options. LED light characteristics including color temperature, wattage, and photometric light distribution have been raised as concerns with LED conversions in other communities. The pilot will be an opportunity for the community to view the options in different environments (neighborhoods, major streets, etc.). Based on community feedback, as well as input from the Transportation and Environmental Advisory Boards, staff would refine the recommended implementation.

Standards/Practices – As currently conceived initial conversion is being planned as maintaining the existing count and location of lights and replacing the fixture with a similarly effective wattage LED luminaire. Across the city streetlighting coverage has differed by neighborhood depending on the standards in place at the time of development. In general, major transportation corridors have continuous corridor-style lighting. Most neighborhoods have intersection-only lighting. Some neighborhoods such as Dakota Ridge, Holiday, 4-mile, and Wonderland Hill are not lit. Areas that were developed initially in the county and then annexed to the city such as North Boulder are similarly not lit. Going forward, again through community and Board engagement, staff would develop streetlighting standards/practices that would be applied consistently for new development and retrofitting existing neighborhoods.

Financing Options – Financing is required to upfront conversion expenses. A number of different financing tools are available for the conversion including city self-financing. Over time the conversion cost is paid back by the operating expense savings. Timing and pace of the conversion are factors that influence financing requirements. City staff has identified a range of different financing options. Final recommendations will be brought forward through the city's annual budget process.

---

<sup>1</sup> Streetlight acquisition was one of the potential projects identified in the CCRS ballot initiative and supported by the community.

Implementation – It is anticipated that the city would contract for services to implement the conversion and initial ongoing maintenance service with the intent that long-term steady-state operations would be primarily managed through in-house labor consistent with current practices. Contracting the conversion and initial maintenance period will allow staff to better understand cost and work requirements. It will also facilitate better management of warranty and repairs as the city works to build internal capacity. Staff have developed a provisional budget for this model, which is included as attachment D.

Transportation Advisory Board (TAB)/Environmental Advisory Board (EAB) Role – If the decision to acquire is made, a significant element moving forward will be to engage the community about the proposed changes – LED retrofit, system improvement and standards. Next steps identified above will include conversion pilots and streetlight standards/practices development. Engaging the public in these steps will be key to successful implementation. Staff is planning on the TAB and EAB to help engage the community in shaping the preferred approach. The pilots and development of streetlight standards/practices will be an excellent opportunity for residents to see the options in the field and to discuss the tradeoffs and provide feedback.

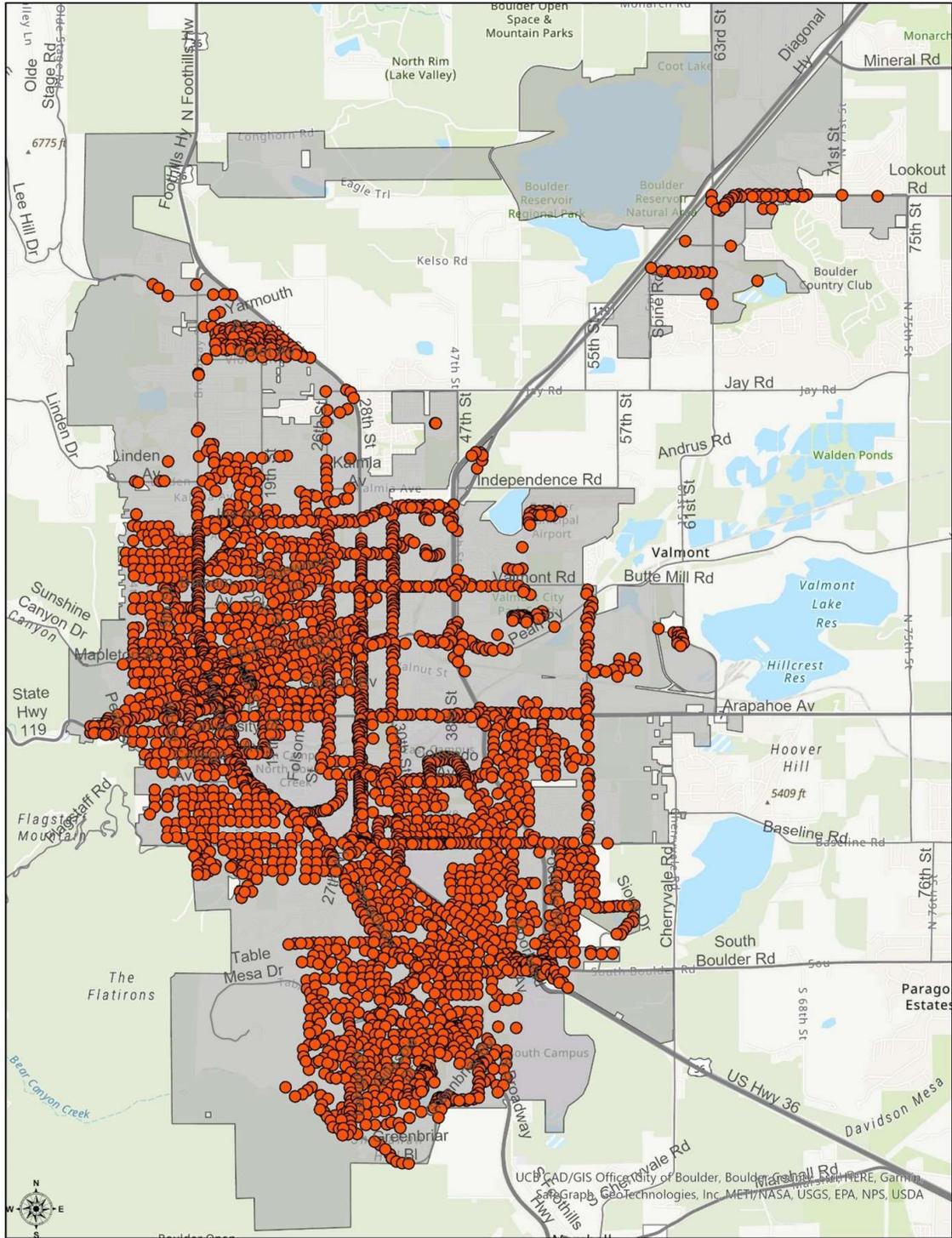
## **ATTACHMENTS**

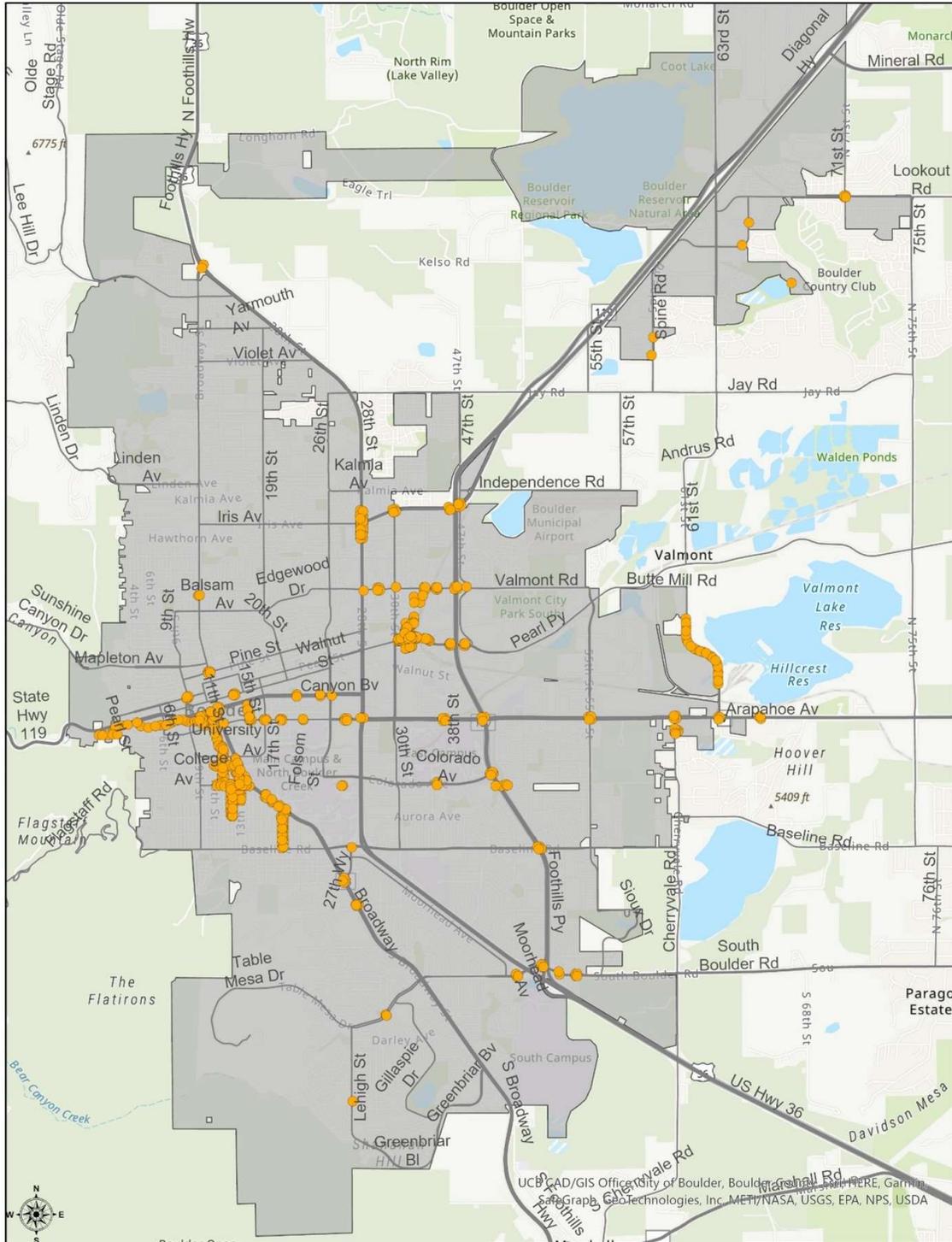
A - Xcel Energy Streetlight System

B - City of Boulder Streetlight System

C - Xcel Energy Streetlight Acquisition and Conversion Financing Options

D - Xcel Energy Streetlight System Acquisition 15-Year Budget





Attachment B - City-owned Streetlight System Map 1

<b>Xcel Energy Streetlight Acquisition and Conversion Financing Options</b>		
<b>Financing Options Description</b>	<b>Key Advantages</b>	<b>Key Disadvantages</b>
<p><b>Self-financing</b></p> <p>The City of Boulder provides its own funds either on hand or borrowed through public finance vehicle such as a bond to cover the entire project cost.</p>	<ul style="list-style-type: none"> <li>• City receives a full turn-key program to manage the entire project, including a GIS audit, lighting design, IGA, procurement, installation, and final commissioning.</li> <li>• Easy to administer, no need for third-party involvement.</li> <li>• If city reserve (cash) funds are employed in the project, there is no additional debt.</li> <li>• If the city elects to finance the project from a bond, this is likely the option with the lowest financing costs.</li> <li>• 100% of the savings to the city upon project completion.</li> </ul>	<ul style="list-style-type: none"> <li>• Requires upfront, available capital to fund the project.</li> <li>• The city must evaluate other uses for the funds by examining the Opportunity Cost of committing the funds to the project.</li> <li>• If financed through a bond, the project cost will show up as additional debt on the city's balance sheet, which could impact the city's borrowing capacity, its credit rating, or both.</li> </ul>
<p><b>Tax Exempt Lease Purchase (TELP)</b></p> <p>Also known as a Municipal Lease. TELP financing is effectively a lease, rather than a loan. The city temporarily transfers ownership of the funded assets to the lender, who receives lease payments of principal and interest for the specified term until the project costs have been repaid.</p> <p><b>Indicative Rates:</b>                      5 yrs: 1.617%                      7 yrs: 1.747%                      10 yrs: 1.925%                      15 yrs: 2.195%</p>	<ul style="list-style-type: none"> <li>• No up-front capital required by city and No debt shows up on the city's balance sheet so borrowing capacity is not affected.</li> <li>• All project costs can be included in the TELP financing.</li> <li>• Can be repaid solely from the energy and maintenance savings.</li> <li>• The term of the lease is flexible, ranges from 5 to 15 years.</li> <li>• TELP structure is used extensively in all 50 states.</li> <li>• TELP financing is considerably faster, cheaper, and easier to administer than a bond.</li> <li>• Provides effective solutions during revenue shortfalls and other unexpected situations.</li> </ul>	<ul style="list-style-type: none"> <li>• TELP agreement does not include a maintenance program, as TELP funds must be used within three (3) years from the funding date.</li> <li>• A separate maintenance agreement and costs will be necessary to maintain the new luminaires with a maintenance service provider.</li> <li>• Complete savings will not be fully achieved until the TELP term is completed.</li> </ul>
<p><b>Smart Infrastructure as a Service (SiAAS)</b></p> <p>SiAAS is a 10-year service offering, combining a completely upgraded lighting system with a variety of smart city sensors and services selected by the city and includes a comprehensive maintenance package.</p> <p><b>Indicative Rates:</b>                      Same as TELP option.</p>	<ul style="list-style-type: none"> <li>• Requires no upfront capital by city.</li> <li>• Reduces operating costs by up to 30% in the first year.</li> <li>• Consolidates multiple initiatives into one project.</li> <li>• Helps meet sustainability objectives.</li> <li>• Ease of including smart city devices within the project.</li> <li>• Makes use of competitive TELP financing rates.</li> </ul>	<ul style="list-style-type: none"> <li>• Not all cities need smart devices at the present time.</li> <li>• Additional time and involvement needed by the city to select the smart city devices and their locations.</li> <li>• Overall savings are less than a typical TELP as the funds are partially re-allocated to smart city devices which slightly reduces the positive cash flow of the project.</li> </ul>

*Attachment C - Xcel Energy Streetlight Acquisition and Conversion Financing Options*

<b>Xcel Energy Streetlight Acquisition and Conversion Financing Options</b>		
<b>Financing Options Description</b>	<b>Key Advantages</b>	<b>Key Disadvantages</b>
<p><b>Energy Performance Contracts (EPC)</b></p> <p>An ESCO (Energy Services Company) funds the entire upgrade and operates the lighting network, guaranteeing performance and a minimum energy consumption savings. It is generally repaid over a 10-year term.</p> <p><b>Indicative Rates:</b> 10 yrs: 4.45% (updated as of March 23, 2022)</p>	<ul style="list-style-type: none"> <li>• An ESCO finances 100% of the up-front capital investment by the city with an agreement to provide a fixed repayment structure, based on the calculated energy and maintenance savings.</li> <li>• Incorporates a maintenance program.</li> <li>• Ensures that at contract completion, the city retains the full value of the energy and maintenance savings.</li> <li>• With an EPC, the city can immediately take advantage of energy-efficient LED technology without having to add stress to its ratepayer base or borrow project funds. This frees up municipal resources that can then be assigned to other uses deemed important by the city.</li> </ul>	<ul style="list-style-type: none"> <li>• EPC will have higher interest rates compared to TELP.</li> <li>• Certain costs are required to administer the financing and accounting during the term of the EPC.</li> <li>• Reduced savings (if any) are achieved by the city during the EPC, as savings are shared (or completely paid to the ESCO) to pay for the project cost and is dependent on the savings opportunity of the project and the duration of the EPC.</li> </ul>
<p><b>Public Private Partnerships (PPP)</b></p> <p>A long-term concession is granted to the concessioner (contractor) who provides the complete construction and operation of the streetlighting assets over a fixed term (usually coinciding with the useful life of the equipment, or approx. 20 years).</p>	<ul style="list-style-type: none"> <li>• Under a PPP, the private sector partner raises the required financing, does the construction, and operates the asset during the term of the concession.</li> <li>• Can present a flexible opportunity to include various capital projects under the PPP investment.</li> <li>• Project risks are shared with the contractor.</li> </ul>	<ul style="list-style-type: none"> <li>• Typically for very large investments (excess of \$30M) and based around assets with long useful life (20-35 years).</li> <li>• Because the PPP contractor is responsible for all costs to maintain the system over a long (20 year) period, there is a high degree of risk and potential exposure to unknown or unforeseen costs.</li> <li>• City may cede the entire responsibility for the lighting system to the PPP contractor, the eventual pricing and terms may lead to a much more expensive project.</li> </ul>

*Attachment C - Xcel Energy Streetlight Acquisition and Conversion Financing Options*

Attachment D - Xcel Energy Streetlight Acquisition 15-year Budget

Xcel Energy Streetlight System Acquisition 15-Year Budget

Item	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Totals	Averages
Utility Charges (Fixed)	\$ 867,233	\$ 184,292	\$ 55,217	\$ 56,874	\$ 58,580	\$ 60,337	\$ 62,147	\$ 64,012	\$ 65,932	\$ 67,910	\$ 69,947	\$ 72,046	\$ 74,207	\$ 76,433	\$ 78,726	\$ 81,088	\$ 1,994,981	\$ 124,686
Distribution & Delivery Charges (Variable)	\$ 142,767	\$ 142,767	\$ 41,607	\$ 42,855	\$ 44,141	\$ 45,465	\$ 46,829	\$ 48,234	\$ 49,681	\$ 51,171	\$ 52,707	\$ 54,288	\$ 55,916	\$ 57,594	\$ 59,322	\$ 61,101	\$ 996,445	\$ 62,278
Annual Maintenance Cost	\$ 360,000	\$ 179,290	\$ 182,876	\$ 186,533	\$ 190,264	\$ 194,069	\$ 197,951	\$ 201,910	\$ 205,948	\$ 210,067	\$ 214,268	\$ 218,554	\$ 222,925	\$ 227,383	\$ 231,931	\$ 236,569	\$ 3,460,537	\$ 216,284
City Labor	\$ 20,000	\$ 20,000	\$ 20,600	\$ 21,218	\$ 21,855	\$ 117,053	\$ 120,565	\$ 124,181	\$ 127,907	\$ 131,744	\$ 135,696	\$ 139,767	\$ 143,960	\$ 148,279	\$ 152,728	\$ 157,309	\$ 1,602,862	\$ 100,179
Bucket Truck (purchase/replacement)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 135,061	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 181,511	\$ 316,572	\$ 19,786
System Acquisition/LED Retrofit	\$ -	\$ 6,983,037	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,983,037	\$ 436,440
Capital Improvement (Aged Pole Replacement)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 525,000	\$ -	\$ -	\$ -	\$ -	\$ 550,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,075,000	\$ 67,188
Capital Improvement (Seperation from Xcel Distribution Poles)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,160,678	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,160,678	\$ 135,042
Capital Improvement (Final System Seperation)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,544,911	\$ 3,544,911	\$ 221,557
<b>Subtotal</b>	\$ 1,390,000	\$ 7,509,386	\$ 300,300	\$ 307,480	\$ 314,839	\$ 1,076,985	\$ 427,491	\$ 438,337	\$ 2,610,146	\$ 460,892	\$ 1,022,618	\$ 484,654	\$ 497,008	\$ 509,689	\$ 522,706	\$ 4,262,490	\$ 22,135,022	\$ 1,383,439
Contingency	\$ -	\$ 750,939	\$ 30,030	\$ 30,748	\$ 31,484	\$ 107,699	\$ 42,749	\$ 43,834	\$ 261,015	\$ 46,089	\$ 102,262	\$ 48,465	\$ 49,701	\$ 50,969	\$ 52,271	\$ 426,249	\$ 2,074,502	\$ 129,656
<b>Total</b>	\$ 1,390,000	\$ 8,260,325	\$ 330,330	\$ 338,228	\$ 346,323	\$ 1,184,684	\$ 470,241	\$ 482,170	\$ 2,871,160	\$ 506,981	\$ 1,124,880	\$ 533,120	\$ 546,709	\$ 560,658	\$ 574,977	\$ 4,688,739	\$ 24,209,524	\$ 1,513,095
Savings from Xcel-Owned Subtotal		\$ (6,832,225)	\$ 1,136,941	\$ 1,169,316	\$ 1,202,627	\$ 406,837	\$ 1,165,052	\$ 1,198,127	\$ (1,144,590)	\$ 1,267,168	\$ 698,192	\$ 1,340,256	\$ 1,378,392	\$ 1,417,630	\$ 1,458,003	\$ (2,599,520)	\$ 3,262,206	\$ 217,480
Cumulative Savings from Xcel Subtotal		\$ (6,832,225)	\$ (5,695,283)	\$ (4,525,968)	\$ (3,323,341)	\$ (2,916,504)	\$ (1,751,452)	\$ (553,325)	\$ (1,697,915)	\$ (430,747)	\$ 267,445	\$ 1,607,701	\$ 2,986,093	\$ 4,403,723	\$ 5,861,726	\$ 3,262,206		
Savings from Xcel-Owned Total		\$ (6,913,815)	\$ 1,283,668	\$ 1,320,070	\$ 1,357,522	\$ 565,990	\$ 1,328,581	\$ 1,366,156	\$ (971,933)	\$ 1,444,583	\$ 880,499	\$ 1,527,594	\$ 1,570,902	\$ 1,615,459	\$ 1,661,301	\$ (2,390,598)	\$ 5,645,979	\$ 376,399
Cumulative Savings		\$ (6,913,815)	\$ (5,630,146)	\$ (4,310,076)	\$ (2,952,555)	\$ (2,386,565)	\$ (1,057,984)	\$ 308,172	\$ (663,760)	\$ 780,823	\$ 1,661,322	\$ 3,188,915	\$ 4,759,817	\$ 6,375,276	\$ 8,036,577	\$ 5,645,979		
<b>Levelized Annual Cost:</b>																		\$ 1,055,766

Escalation Assumptions	
Tariff Rate	3%
Distribution and Delivery	3%
Maintenance	2%
Labor	3%
Construction	5%
Material / Equipment	3%
Contingency	10%