STUDY SESSION
BOULDER CITY COUNCIL

6-7:30 PM  Library Master Plan Update
7:30-9 PM  Climate Commitment

City Council documents, including meeting agendas, study session agendas, meeting action summaries and information packets can be accessed at www.bouldercolorado.gov/city-council.

This meeting can be viewed at www.bouldercolorado.gov/city-council. Meetings are aired live on Municipal Channel 8 and the city's website and are re-cablecast at 6 p.m. Wednesdays and 11 a.m. Fridays in the two weeks following a regular council meeting.

Boulder 8 TV (Comcast channels 8 and 880) is now providing closed captioning for all live meetings that are aired on the channels. The closed captioning service operates in the same manner as similar services offered by broadcast channels, allowing viewers to turn the closed captioning on or off with the television remote control. Closed captioning also is available on the live HD stream on BoulderChannel8.com. To activate the captioning service for the live stream, the "CC" button (which is located at the bottom of the video player) will be illuminated and available whenever the channel is providing captioning services.

The council chambers is equipped with a T-Coil assisted listening loop and portable assisted listening devices. Individuals with hearing or speech loss may contact us using Relay Colorado at 711 or 1-800-659-3656.

Anyone requiring special packet preparation such as Braille, large print, or tape recorded versions may contact the City Clerk's Office at 303-441-4222, 8 a.m. - 5 p.m. Monday through Friday. Please request special packet preparation no later than 48 hours prior to the meeting.

If you need Spanish interpretation or other language-related assistance for this meeting, please call (303) 441-1905 at least three business days prior to the meeting. Si usted necesita interpretacion o cualquier otra ayuda con relacion al idioma para esta junta, por favor comuniquese al (303) 441-1905.
por lo menos 3 negocios días antes de la junta.

Send electronic presentations to email address: CityClerkStaff@bouldercolorado.gov no later than 2 p.m. the day of the meeting.
AGENDA TITLE
6-7:30 PM  Library Master Plan Update

PRIMARY STAFF CONTACT
Jennifer Phares, 303-441-4394

REQUESTED ACTION OR MOTION LANGUAGE
6-7:30 p.m.  Library Master Plan Update

ATTACHMENTS:
  Description
  □  Library Master Plan Update
STUDY SESSION MEMORANDUM

TO: Mayor and Members of City Council

FROM: David Farnan, Library and Arts Director
       Jennifer Phares, Deputy Library Director
       Devin Billingsley, Senior Budget Analyst

DATE: Tuesday, November 28, 2017

SUBJECT: Boulder Public Library Master Plan project update

EXECUTIVE SUMMARY
The purpose of the study session is to update City Council on the status of the Boulder Public Library (BPL) Master Plan and to present options for funding the goals and ensure long-term financial sustainability of the library system. Staff will provide the following information for council’s consideration:

- Brief overview of what the library is and does.
- Major accomplishments since the 2007 Boulder Public Library Master Plan.
- Highlights from input received from community.
- Brief overview of significant projects planned for the next five years and estimated ongoing costs associated with each.
- Outline of options for funding these projects and ensuring financial sustainability for years to come.

It is assumed the Council, Library Commission and staff all agree that the community deserves a great library system. To achieve this, a financial sustainability model for the BPL should be explored. If there is a desire to expand programs and services to meet community expectations as well as to address operating needs, then enhanced funding options need to be explored. Staff seeks direction from council to investigate library funding and governance structure options. A summary of the options is presented at the end of this memo and will be included in the Library Master Plan update. During the study session, the staff and Library Commission would like to discuss the following four questions with council.
QUESTIONS FOR COUNCIL
1. Does council have questions about the role of the library in the 21st century?
2. Does council have questions about the community input related to expanding programs, services, and new facilities?
3. Does council have questions about the options for funding and governance structure of the library system outlined in this memo?
4. Does council have any direction for library staff to pursue additional analysis of and planning for the funding and governance options to be presented in the upcoming, updated BPL master plan tentatively scheduled to be presented for adoption in March 2018?

MASTER PLAN PROJECT UPDATE
BPL’s master plan update began in 2016 with research about community needs and issues identification. This research entailed reviewing city wide master plans from multiple departments and review of community reports such as the Trends Report from the Community Foundation, the Boulder Valley Comprehensive Plan, and the Community Perception Assessment. This research and subsequent interviews with local leaders in business, education, human services and city government provided a framework for developing questions and surveys for gathering the community’s input.

Independent consultants were hired to conduct and analyze the results of an online community survey, conduct focus groups, interviews, and benchmark Boulder against comparable libraries in the state of Colorado and nationally. Eighteen of 100 invited community leaders participated in a Master Plan Community Thought Leaders dialogue to talk about how the library may contribute to making Boulder the kind of community its residents desire. More than 350 community members participated in a two-day project kick-off event, The Library Lab in which participants were asked to share their ideas for the future of BPL. The community survey was completed by 1,752 respondents. Eight focus groups were conducted with 86 participants.

During September and October 2017, BPL hosted four open house meetings and attended the citywide “What’s Up Boulder” open house to check in with the community about the draft master plan goals. More than 180 community members participated in these events.

The library commissioners have provided staff with critical support and direction throughout the project at monthly meetings, during Library Commission’s annual retreat, and several study sessions by reviewing the information collected from the research, giving input on the design of the community survey and engagement activities, assisting the staff and consultants to host several of the events, and giving input on the development of the draft master plan goals and the options to ensure financial sustainability for the library system.
OVERVIEW

What BPL is
Libraries in the 21st century are no longer simply depositories of books and information. They are community gathering places, vital components in a region's knowledge economy, a resource for families, and a great social equalizer providing free and open access to resources for everyone in the community. BPL plays critical roles in helping children learn to read and assisting adults in acquiring new skills, earn high school diplomas, and find jobs. BPL supports immigrants by offering free classes and resources so they can learn to speak, read, and write English, and apply for U.S. citizenship. BPL also provides patrons with access to and training on basic and sophisticated, high-end technology to which they may otherwise not have access. In an emerging freelance economy, libraries are re-asserting their position as the original co-working space and BPL is no different, serving many professionals in this way. Perhaps as much as anything, BPL is a welcoming public space that is free and open to everyone.

With nearly one million visitors in 2016, BPL is one of the busiest public locations in the city of Boulder. Through partnerships with the Boulder Small Business Development Center, Boulder Housing Partners, Intercambio Uniting Communities, The Latino Chamber, the Boulder County Farmers’ Markets, University of Colorado’s ATLAS Institute, and CU Science Discovery, and several start-up entrepreneurs and small (and not so small) businesses, BPL is a critical public anchor for the community in business, sustainability, and cultural development. The community makerspace, BLDG 61, is a model for libraries internationally and functions as a de facto incubator for innovators, entrepreneurs, and inventors with multiple patent applications and several businesses launching from the space in the less than two years it has been in operation.

What BPL does
Libraries are still about books. They are BPL’s brand, but they are not its sole business. BPL had slightly more than 1.5 million circulations of materials last year. That equates to nearly 15 books and movies for every man, woman, and child in Boulder. More than 40% of those were circulations of children’s books. Providing patrons with library materials is a substantial portion of BPL’s operations. Purchasing, processing and physically moving books to and from patron's homes and back to the shelves at the library accounts for 60 to 70% of BPL’s ongoing operating costs from material costs to the cost of staff doing the work. In addition to circulation of physical materials, BPL has seen nearly 160% growth in patrons’ use of e-books, and streaming music and movies over the last four years.

While it seemed like a possibility a few short years ago, that the size of libraries would start to be reduced in response to patrons shifting their use to e-books, the explosive growth in popularity and use of e-books and streaming services has not correlated with a decline in demand for print resources. Some patrons find it more convenient to read multiple mediums. BPL’s circulation of physical materials, e-books, and streaming music

and movies is higher than it has ever been. The transition of some patrons from using print materials to exclusively using e-books and streaming services has allowed the library to reallocate some of the space that was once devoted to housing print collections to create more space for individuals and groups to use the library. Similarly, the number of visitors to Boulder’s libraries continues to grow.

Last year, BPL worked with its consortium partners and other local municipal libraries to create a non-profit Flatirons Library Consortium (FLC). Consortium operations, formerly managed by BPL staff, were outsourced and the FLC opened its membership to more municipal libraries. The FLC has more than doubled its membership, making available twice as many books and materials to BPL patrons with no increase in direct cost. Further, expanding the FLC strengthened its member libraries’ ability to negotiate contracts with book and database vendors as a group, allowing all libraries to purchase more materials at reduced cost.

Over the past three years, attendance at BPL’s children and family literacy-based programs like storytime, 1000 Books Before Kindergarten, book-rich environments, and summer reading have grown by nearly 100%. In addition, STEAM (Science, Technology, Engineering, Art, Math) programs, which did not exist three years ago, now bring in 12,000 to 15,000 participants annually. Participants range in age from 4 to 94, and are learning new skills and experimenting with everything from technology to textiles to bioengineering and wood craft, together. With more than 100,000 patrons attending programs in 2016, BPL’s program attendance is one of the highest in Colorado, and rivals much larger library systems.

The community makerspace, BLDG 61, launched almost two years ago, attracting thousands of participants and winning multiple awards. BLDG 61 programs have been sustained by a series of community grants. BLDG 61 is a high-tech shop with laser cutters and 3D printers, as well as a full-scale, advanced woodworking shop, and has become a platform for local entrepreneurs to test their ideas with an audience.

Two notable, grant-funded BLDG 61 programs are: the Tree Debris to Opportunity (TreeOpp) program, funded by the John S. and James L Knight Foundation’s Cities Challenge Grant; and the Build, Learn, Design, Grow Apprenticeship, funded by the Jacques Littlefield Foundation. The TreeOpp program provided the opportunity for persons currently experiencing homelessness to learn advanced woodworking techniques from BLDG 61 creative technologist staff. Participants in the 12-week program used wood harvested from city Ash trees that were infested with Emerald Ash Borer. Participants sold the tables, cutting boards and decorations they created at the Boulder County Winter Market, with the revenues being used to continue support for the program. The Build, Learn, Design, Grow Apprenticeship provided an apprenticeship opportunity to 36 teen students in BLDG 61. Each student was given a stipend and a budget to develop an idea for a product or amenity that could be used in business or benefit the community. BLDG 61 also hosted several well-attended, low-tech textile and engineering workshops from spinning wool to learning about the physics of fidget spinners.
BPL continues to be the go-to place for many visitors and community members who do not have access to computers and high-speed internet at home. BPL provides patrons with free high-speed wireless internet access, public computers, and advanced productivity software.

Put simply, the growth and success experienced by BPL during the past four years has been remarkable! Since 2014, BPL increased the hours open to the public by 11%, opened a new “corner” library in north Boulder, and expanded program and event offerings resulting in a 100% increase in overall program attendance. The number of new borrowers grew by 20%. Visits to the libraries have grown 8%. E-book use grew by 160%. In 2016, due in part to this growth and to innovative partnerships and creative programs, BPL was honored as 2016 Colorado Library of the Year by the Colorado Association of Libraries.

BPL staff accomplished all of this with minor changes to the budget and a 2% reduction in full-time equivalent (FTEs) staff positions.

Four years ago, along with the renovation of the Main Library, approximately $1 million was invested in new, automated materials sorting systems. The systems were designed to more efficiently process returned materials and reduce the number of physical touches to materials by staff. Materials sorting systems were installed at the Main Library, and at the George Reynolds and Meadows branch libraries. BPL also invested in patron self-service stations to check out materials and pay late fees. These investments enabled the library to restructure and reallocate staff to provide more individual and personal customer service, open the BLDG 61 Makerspace, and to create a new workgroup that focuses on programs, events, and outreach to the community.

It is worth noting that much of BPL’s success with new programs and the dramatic increase in attendance over the past three years is attributable to a significant degree to an increase in investment from the Boulder Library Foundation (BLF). The BLF is a 501(c)(3) nonprofit organization led by a volunteer board of directors and supported by individual donors and community partners in Boulder. In the past four years, the BLF contributed approximately $1.2 million to BPL to increase program offerings. The foundation’s investment was vital in launching STEAM programs, the Jaipur Literature Festival, sensory concerts for families with children on the autism spectrum, the continuation of free films and concerts, as well as all the upfront costs to build and equip the BLDG 61 Makerspace. BLF’s generosity and leadership has been vital in introducing a whole new generation of people to the library. BPL has used the funds from the BLF to leverage another $300,000 in grants and community support.

The foundation of the public library in America has always been about the principles of free and open access to information and literacy in all its forms, and the protection of First Amendment rights for everyone. From learning to read, to learning English, to learning advanced computer coding and programming, to becoming eligible to apply for U.S. citizenship, to obtaining a high school diploma or advanced degree, the library is an informal learning platform that respects the rights of the learner above all else. BPL is a
bridge for the community, providing the space for self-directed, life-long learning experiences and tools for hands-on collaboration with librarians, public partners, volunteer tutors, and creative technologists to learn, explore and enrich its members’ lives.

BPL Future

Libraries in general, and BPL in particular, are experiencing an historic resurgence as community gathering places. BPL is the busiest library of its size on a per-capita basis in Colorado. But BPL is not just a busy place, like all public libraries, it is a core service in a democratic society.

Civil society performs a number of critical functions; it provides a buffer between the individual and the power of the state and the market, it creates social capital, and it develops democratic values and habits. By design and tradition, the public library is the essential civil society institution. Through the provision of space, information, access to tools, and inspiration, it enables all the others.

Don E. Eberly. The Meaning, Origins and Applications of Civil Society

BPL is a trusted and inclusive place of learning and innovation, a place for the community to come together, for its members to talk to and learn from each other about the issues of the past, present and future. If BPL is going to continue to fulfill its potential as being an engine of social and economic mobility, a platform for civic education and dialogue, and to create hands-on, collaborative learning environments which address the needs of 21st century learners, then far greater financial and institutional support will be required in the years ahead.

The library master plan will outline the community’s vision and goals for BPL and guide investment priorities for reinvesting and renewing library services to build a robust community library system for the next 10 years. The updated Boulder Public Library Master Plan will include goals to accomplish the following:

- New buildings and designs to meet current and future needs.
- Increased staff to expand library hours so all locations are open on a consistent schedule at least 66 hours per week.
- Further development of creative partnerships with both non- and for-profit companies that are mission-driven, and with missions consistent with BPL to continually expand the library’s program offerings.
- Development of workshare and incubator spaces by expanding on the concept of the BLDG 61 Makerspace in other appropriate library facilities.
- Increased marketing and promotion of library services to convey the value of the community’s investment.
- Building further upon successful collaborations like the Flatirons Library Consortium to expand library offerings to the community.
- Expansion of programs and services through outreach to underserved community members.
• Engage other city and civic agencies to partner with BPL to deliver services and reach a broader representation of the community by extending BPL’s facilities as neutral spaces for civic dialogue and discussion.
• Invest in the renovation of BPL’s north building to expand the rental of the Canyon Theater at affordable rates to support the cultural life of Boulder and address the community’s need for a mid-sized theater space.

These are some of the things the community asked of its library. But as important, or perhaps more importantly, the staff and Library Commission ask that council not only consider all the community goals and aspirations, but to also consider the options for funding these goals and to manage the ongoing financial sustainability of BPL going forward.

ACCOMPLISHMENTS SINCE THE 2007 MASTER PLAN
During the past 10 years, the library has accomplished most of the goals and objectives in the 2007 Library Master Plan. Some of the most notable accomplishments include:

• **Restoring library hours to provide greater access to information and community resources.** In April 2015, the library opened the George Reynolds Branch Library and the Meadows Branch Library one additional day per week (for seven days per week operation) with no budget impact. This was accomplished by staff restructuring, and adjusting the schedule for operating hours at the Main Library. These changes allowed the library to expand its offerings of morning children’s storytimes.
• **Security of facilities.** In 2007, BPL’s budget was increased to hire a contract security officer at the Main Library for 35 hours per week. The hours were expanded to have one security officer on-duty all hours the Main Library was open to the public in 2010.
• **Leading edge center for information technology.** While not likely what library staff and the Library Commission envisioned when this goal was written more than 10 years ago, opening the BLDG 61 Makerspace at the Main Library has certainly fulfilled the intention of the goal for the library to provide a leading-edge space, state-of-the-art technology, outreach and training for patrons.
• **Library Facilities Renovation.** In 2009, the library completed a facilities sustainability study, which outlined capital needs to renovate and introduce greater efficiency for maintaining city-owned library facilities. The Boulder community approved a capital improvement bond ballot issue in 2011 that funded $2.5 of $4.5 million in renovations of the Main Library. The renovations were completed in April 2014, and included the creation of a new family-friendly children’s area, a teen space, welcoming and open spaces that support a greater feeling of safety in the facility, more and comfortable public seating, a café on the library bridge, and more public meeting spaces. During 2015 and 2016, both the George Reynolds and Meadows branch libraries received modest renovations, reconfiguring staff space to improve efficiency of processing library materials and to create more welcoming, patron-friendly spaces.
• Automated materials handling, materials security, and self-service equipment. From 2014 through 2016, new equipment was installed at the Main Library and the Meadows and George Reynolds branch libraries to facilitate automated check-in and sorting of library materials, patron self-service for checking out materials and paying late fees, and to support inventory management and security of library materials. The introduction of these technologies allowed staff to focus on more direct, customer-focused service and improved patron access to library materials.

• Flexible service points. In conjunction with the Main Library renovation, all library staff members collaborated to create a customer service philosophy for the library that models the city’s vision of “Service Excellence for an Inspired Future.” From that philosophy statement, the front-line staff developed a model for mobile service that was introduced when the renovation of the Main Library was complete. Mobile service makes library staff more accessible to patrons by bringing them out from behind the service desks to assist patrons wherever they need it in the library. The change has been a win-win for patrons and staff alike. Patrons receive a warm welcome when they enter the libraries and more individual and personal service, and staff have found more satisfaction with their work because they are able to make direct, meaningful connections with patrons.

While steps were taken to address both, two key goals from the 2007 Library Master Plan were not fully realized: building a full-service north Boulder branch library and expanding outreach. It is clear from patron use of the NoBo Corner Library, the community’s response to the library’s outreach efforts focused on early literacy, and from the results of the current master plan project community survey, that these are still considered priorities by the community and therefore still worth accomplishing.

KEY ISSUES IDENTIFIED
BPL spent the past several months conducting an extensive community engagement process for the master plan project. Several individual and stakeholder group interviews, focus groups, and community feedback workshops were conducted. The community survey received thousands of responses with detailed comments about what patrons value about the library. Staff also read several recent city department master plans and the Boulder Valley Comprehensive Plan - especially as it detailed projections of future growth and character of neighborhoods to identify community priorities and needs collected during those projects. Staff used the reports from the library’s patron database Gale’s Analytics On Demand demographics analysis tool to analyze current and potential future service areas by demographics such as population, households with children, and economic and ethnic diversity. Staff also analyzed the locations of all current BPL cardholders and the average length and time of vehicle trips to reach the nearest library location. Several key community priorities and trends became apparent that staff and the Library Commission would like to share with council now, before completion of the updated Boulder Public Library Master Plan.
New facilities
Most of the growth in Boulder over the last 30 years and the projected growth in the future is primarily east and north of downtown Boulder. While there is a consistent homogeneity of the demographics throughout Boulder, the areas east and north show a statistically significant percentage of households with children, more economic diversity and a significantly higher percentage of households that speak a language other than English at home (Attachment A). The residents of north Boulder and Gunbarrel expressed enthusiasm to expand or open library facilities and services in those areas during the focus groups and check-in meetings with the community on the draft Master Plan goals. The survey also requested that respondents rank in importance a series of ongoing and future projects. Gunbarrel and north Boulder residents placed a high priority on opening or expanding services. Similarly, during all of the Master Plan community engagement activities and meetings, many north Boulder residents requested that the NoBo Corner Library be upgraded to a larger, full-service branch library. A full-service north Boulder Library has been a goal for the library since the 2007 Boulder Public Library Master Plan, and was originally envisioned as a top priority of the North Boulder Subcommunity Plan in 1988.

Gunbarrel neighbors want more conveniently located and easier access to library services. Most community members shared that their drive from Gunbarrel to any of the current library locations is time consuming and inconvenient. Many patrons also wish to minimize their carbon footprint. Some shared that they drive to surrounding cities to visit libraries and couple their trips to those libraries to run errands and shop. There is support and interest in Gunbarrel getting any type of library services. But many of the residents who came to the feedback sessions said they would welcome a corner library like what currently exists in north Boulder.

Expanding programs and services
The community places a high priority on access to library materials. Numerous requests for more books, more e-books, and more availability of streaming and downloadable resources were made via survey responses and during the community engagement activities and meetings. There was also significant interest expressed in expanding the BLDG 61 Makerspace, incorporating a makerspace in the future full-service North Boulder Branch Library, and expanding maker programs to the other branch libraries. Lastly, some in the community strongly advocated for expanding the capacity of the Canyon Theater in the north building of the Main Library to provide an affordable performance space for local groups.

Safety concerns
Through the survey and during the community check-in meetings, some patrons expressed that they do not consistently feel safe when they visit the Main Library. These patrons often cited discomfort with sharing space with other members of the community that they perceive as homeless or transient, or witnessing other patrons exhibiting

behavior or accessing electronic information that they find objectionable. The staff and Library Commission acknowledge that there are several opportunities to address these concerns including:

- providing educational information about the public library as a place where all are welcome if they observe the rules of conduct.
- evaluating the configuration and management of public spaces in the library where people typically gather and implementing improvements that effectively support the equitable use of space, and
- improving the security officer presence and their skills with consistent enforcement and de-escalation.

**Sustainability**

The capital and ongoing operating funding support necessary to fulfill the community’s vision for the library system is not insubstantial. While firm estimates have not yet been obtained, fair preliminary estimates for new buildings, more programs and services for the underserved, and improved security of library facilities will require an increase somewhere between $1.5 to $2 million annually in ongoing operating funding, and require approximately $6 to $12 million in one-time capital funding. This includes $5 million to build a full-service North Boulder Branch Library which will be funded by the Capital Improvement Tax approved by the voters in Nov. 7, 2017. All measures of BPL’s business have grown significantly over the past four years: increased visitors, increased program attendance, increased materials circulation, and increased new cardholders. It has been accomplished with fewer staff and minimal new budget dollars. As a result, the libraries are operating with some deficiencies. Opening the George Reynolds and Meadows Branch libraries an additional day per week without more staff is one significant example. Staff for BLDG 61 and a programs, events, and outreach work group was done through a reallocation of current positions from other divisions in the library.

At present, BPL has over 132,731 total cardholders. The City of Boulder population is approximately 108,000. Staff’s analysis shows that while most households in Boulder have BPL cardholders, nearly 40,000 of those cardholders live outside the Boulder city limits, indicating that BPL is a regional hub. Many of these are assumed to be commuters, university students, and patrons living in unincorporated Boulder County and neighboring cities. Increasing funding for BPL as described above to address ongoing operating budget shortfalls and to meet the goals identified by the community is a moderate request, that would put its funding at an average level per user when compared to other Colorado public libraries. Maintaining high quality library services and meeting the current demands of the community necessitates investigating new funding options that will ensure sustainability.

**FUNDING SOURCES FOR OPERATING BUDGET AND CAPITAL NEEDS**

BPL is currently supported through a combination of a 0.33 mill dedicated property tax and City of Boulder Sales and Use tax. In 2018, it is expected that property taxes will generate approximately $1.24 million to fund library operations. Sales and use tax will generate approximately $6.94 million for library operations.
Boulder Library Foundation

Additionally, BPL also receives annual grant support for programs and events from the Boulder Library Foundation (BLF). The BLF is in its 43rd year of supporting the Boulder Public Library, a testament to the hard work and dedication of the 13-member volunteer board and many community members who believe in the value of their public library. Over the past four years, the BLF has contributed nearly $1.2 million in funds to support library programs and events. The BLF has committed to awarding the library up to $250,000 in grant funding each year for the next three years, and shaped its fundraising and investment strategies around meeting that goal.

General Fund and Library Fund

The Library Fund is a restricted fund that serves as a depository of BPL’s 0.33 mill dedicated property tax, grant revenues, and gifts and contributions intended solely for library use. Revenues generated in the Library Fund support approximately 16% of BPL’s $8.26 million in operating expenditures, with the General Fund directly covering the remaining 84%. The Library Fund’s estimated year-end 2017 balance is approximately $350,000. Most of this balance is comprised of donor-restricted gifts and contributions.

The Library Fund described above was established in 2016 following a voter approved charter change. Prior to the charter change, BPL’s operating budget was funded from a previous version of the Library Fund. This fund, while called out separately in name, existed within the General Fund and allowed for the commingling of restricted and unrestricted revenue sources, i.e. dedicated property taxes mixed with sales and use tax transferred in from the General Fund. When the new Library Fund was established, the balance that had accumulated over the years in the old Library Fund was set aside within the General Fund to be used for future library needs. This reserved balance is $2.05 million.

Development Excise Taxes and Impact Fees

In the 1980s, the city began collecting Development Excise Taxes (DETs) from new residential development to be used for “library facilities that are attributable to growth.” Excise taxes are one-time revenues used to fund capital costs attributable to new development and require voter approval. In 2009, the city shifted from DETs to Impact Fees for BPL. Impact Fees are also one-time revenues from residential development used to fund system improvements needed to accommodate growth or development. However, these fees do not require voter approval and are instead based on a nexus study that assesses the reasonable impact of proposed development on existing capital facilities. The last study was conducted in 2015 and set fees “at a level no greater than necessary to defray such impacts directly related to proposed development” relative to BPL’s current capital stock and level of service. As such, impact fees may not be imposed to remedy any existing deficiency.

The balance of DET and Impact Fees collected for the library reside in the city’s Capital Development Fund and are available to apply to capital improvements, including
collection materials expansion, that are attributable to new growth. The community’s request for new library facilities in north Boulder and Gunbarrel would address growth-related needs and therefore would be eligible for at least partial funding from DET and Impact Fee revenue. BPL’s current balance of DETs is $1.52 million and its balance of Impact Fees is $989,000.

**Blystad-Laesar House proceeds**
The library has $368,000 in proceeds from the sale of the Blystadt-Laeser House at 1117 Pine St. sitting in a restricted account within the General Fund. The house was purchased in late 1986 to supplement the archival storage needs of the Carnegie Branch Library. After the purchase, the house was determined to be inadequate for its intended use, and when it was sold in 2002, the intention was to use sale proceeds to fund other archival storage options such as digitization.

**Facilities, Renovation, and Replacement Fund**
BPL makes annual contributions, when feasible, to the Facilities, Renovation and Replacement Fund (FR&R) based upon a combination of Public Works-Support Service’s facility capital renovation and replacement projections, as well as savings for future renovation projects envisioned by library staff. These contributions have been used in the past to fund projects such as window replacement, floodproofing, roof repairs, branch library renovations, etc. BPL’s current balance in the FR&R Fund is $373,000.

To meet the needs and priorities identified by the community and to address community growth BPL will either need increased ongoing support from the city’s General Fund or to pursue another form of governance and funding.

**OPTIONS FOR FINANCIAL SUSTAINABILITY**
The 2007 Library Master Plan recommended that the library consider restructuring its governance and funding model to secure a higher level and more stable funding through a regional model. A summary of the cities and counties where current BPL cardholders reside is in Attachment B. The fact that one third of BPL cardholders reside outside of Boulder city limits makes this an important consideration for council.

While there are several options for library governance and/or funding besides municipal governance and funding, forming a library district or a regional library authority are the two options that are feasible for BPL.

The Colorado Library Law “Quick Guide” Comparison of Library Districts and a Regional Library Authority is in Attachment C.

Library districts are the most common form of governance and funding for libraries in Colorado. A map of Colorado library jurisdictions is Attachment D. While Colorado Library Law defines the regional library authority as an option for library governance and funding, there are none in Colorado.
**Library District**
A library district is a local entity other than a county, municipality, township or school district that is authorized by state law to establish and operate a public library as defined by the National Center for Education Statistics. It has sufficient administrative and fiscal autonomy to qualify as a separate government entity. While special districts such as fire and water and sewer districts are grouped together and governed by title 32 under Colorado law, libraries are a distinct form of district and governed in Colorado by title 24. Fiscal autonomy of libraries requires support from local taxation dedicated to library purposes (e.g., a library tax). The residents within the boundaries of the district must produce a majority vote in favor of being included in the district, and must approve any new or increased library taxes within the district boundaries.

If a library district is formed to include the city limits, the city council would appoint a library district board. If a library district’s boundaries would include areas outside of the city limits, city council would likely also need to appoint at least one at-large member to a governing board. This board would then function independently of the city government, with primary responsibilities of hiring a library director, approving expenditures and overseeing all district strategy and accountability for operational efficiencies. The district would assume responsibilities for all administrative functions (human resources, finance, facilities management, insurance, employee benefits and retirement, etc.) or choose to contract with the city or other entities to provide these services. All library employees would become employees of the district.

The City Council and Library Commission would consult the Boulder Valley Comprehensive Plan and work with Boulder County commissioners to identify district boundaries which would include areas of unincorporated Boulder County that do not have adjacent areas with other entities providing municipal or district library services.

**Regional Library Authority**
A regional library authority is an entity created by an agreement between two or more governmental units. These can be cities, counties, special districts and/or school districts. This option requires voter approval to establish a combination of property and sales tax to fund library operational and capital costs. The government entities involved would either appoint a board of directors, or selected members of the City Council might serve on the board of a regional library authority. Though Colorado State legislation authorizing the formation of a regional library authority has existed for several years (CRS 24-90-110, et. seq.) there are no such entities in Colorado now.

Regional library authority boundaries may include the Boulder city limits and some other entity. Aside from Boulder Valley School District, there are few special districts within Boulder County that would be appropriate with which to combine. The Gunbarrel General Improvement District is one. This combination would include many BPL users with property outside the city limits but it would by no means be comprehensive.
ANALYSIS
At its most elementary level, the analysis of the options described above comes down to two simple questions:

- Can the City of Boulder operate the library and meet master plan goals with the current financial structure/resources?
- Should BPL users with property outside the city limits be asked to contribute to library funding on a more equitable basis?

Nearly 1,800 library patrons and community members responded to the recent community survey\(^4\). Seventy-two percent (72%) of respondents indicated they would “support” or “strongly support” increasing their taxes to pay for library services. This is something that needs further investigation.

Most public libraries measure funding and count metrics on a per capita basis. In comparison to other public libraries in Colorado, BPL ranks in the upper third for per capita funding (Attachment E). However, looking at a library’s funding and performance on a per capita basis does not really show the actual success or busyness of a library. In BPL’s case, these data points belie the fact that Boulder is a regional hub. No library system of BPL’s size has a similar, disproportionate number of cardholders in relation to population. Most Colorado libraries with even remotely similar user bases are mountain resort towns (Attachment F). If library funding and metrics are analyzed per registered user (cardholder), BPL drops down into the lower third in funding for Colorado.

To go one step further in the analysis of Attachment E, if library funding is measured based upon the number of people that use the system, instead of the legal service area population, BPL would need an increased funding level of more than 33% or approximately $4 million per year to achieve funding levels equivalent to that of the Denver Public Library or to meet the average funding levels for medium or large libraries on Colorado's Front Range.

Municipal governance and funding
Some advantages of municipal funding:

- A diversity of funding sources for the city’s General Fund.
- Some internal services such as information technology, human resources, finance, etc. can be provided by the city at a lower cost than they likely would be available on a contract basis.

Challenges of municipal funding:

- Competition of public services for priority and budget resources.

---

Library district governance and funding
Some advantages of forming a library district include:
• Funding is secured directly from dedicated tax revenues rather than competing with other city or county departments.
• City of Boulder general fund contribution of approximately $7 million annually generated from sales tax revenue would no longer need to be used to support the library.
• The 0.0333 property tax mill levy for Boulder property owners to fund libraries may be rescinded. More investigation is required to determine this.
• A single purpose district can enhance taxpayer accountability and organizational focus.
• Debt can be issued to fund capital projects, but funding received is not solely restricted to capital costs.
• Unspent dollars can be retained for future years.

Some challenges of forming a library district include:
• Introduction of a new tax that requires voter approval.
• State budget limits and constitutional limits, such as TABOR (Taxpayer Bill of Rights) and the Gallagher Amendment apply to library districts.
• The effect of the Gallagher Amendment means a disproportionate amount of property tax is placed on commercial property.
• The transition year to a district is difficult, requiring a large commitment from the board and staff.
• Funding is restricted to property taxes.
• Property taxes are subject to periodic property devaluations that could result in service reductions. In the event of a downturn in the assessed property values, there is usually a one or two-year delay in property tax collections to plan how to address any decreased revenue.

Regional library authority governance and funding
Since a regional library authority does not currently exist in Colorado, a complete understanding of the disadvantages is not known.

Some advantages of a regional library authority include:
• Funding received is not solely restricted to capital costs.
• Funding is secured directly from dedicated tax revenues rather than competing with other city or county departments.
• Both sales and property taxes are funding sources.
• Debt can be issued to fund capital projects.
• Each library system may continue to be part of its city government.
Some disadvantages of a regional library authority include:

- Since each of the governmental entities involved remain autonomous, establishing clear operational agreements, roles and creating a board of directors can be complex.
- Each governmental entity involved is responsible for generating the funds for its contribution to support library facilities and services within the regional library authority.

**NEXT STEPS**

Staff will complete the 2018 Boulder Public Library Master Plan and present it for City Council consideration and adoption in March 2018.

**ATTACHMENTS**

A. Demographic analysis summary of Boulder households with BPL cardholders
B. BPL cardholders by area of residence
C. The Colorado Library Law “Quick Guide” Comparison of Library Districts and a Regional Library Authority
D. Map of Colorado library jurisdictions
E. Funding level comparison of some Colorado public libraries
F. Library accounts and visits comparison
## Demographic analysis summary of Boulder households with BPL cardholders

Data generated by service area boundaries from Gale Analytics on Demand in 2016

<table>
<thead>
<tr>
<th>Service Area</th>
<th>Population</th>
<th>Households with BPL cardholders</th>
<th>Average drive time to nearest BPL location</th>
<th>Households with or likely to have children</th>
<th>Average household income</th>
<th>Households with Spanish speaking members</th>
<th>Dwelling type</th>
<th>Length of residence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Library (Includes the Hill &amp; CU campus)</td>
<td>47,001</td>
<td>53.09%</td>
<td>0-5 minutes: 55% 5-10 minutes: 43% 10+ minutes: 2%</td>
<td>18.20%</td>
<td>Under $50k: 42.9% $50-100K: 21.6% $100-150K: 13.2% $150K+: 14.7%</td>
<td>7.02%</td>
<td>55% Single Unit 44% Apartment</td>
<td>0-4 years: 53% 5-9 years: 14% 10-19 years: 17% 20-29 years: 10% 30-49 years: 6%</td>
</tr>
<tr>
<td>Meadows Branch Library (Includes many of the CU dorms)</td>
<td>25,175</td>
<td>46.17%</td>
<td>0-5 minutes: 92% 5-10 minutes: 7% 10+ minutes: 1%</td>
<td>20.30%</td>
<td>Under $50k: 39.2% $50-100K: 25.6% $100-150K: 14.5% $150K+: 14.7%</td>
<td>6.97%</td>
<td>55% Single Unit 43% Apartment</td>
<td>0-4 years: 46% 5-9 years: 13% 10-19 years: 17% 20-29 years: 13% 30-49 years: 9%</td>
</tr>
<tr>
<td>George Reynolds Branch Library</td>
<td>18,687</td>
<td>63.53%</td>
<td>0-5 minutes: 90% 5-10 minutes: 10% 10+ minutes: 0%</td>
<td>24.70%</td>
<td>Under $50k: 22.3% $50-100K: 27.2% $100-150K: 19.5% $150K+: 19.8%</td>
<td>3.70%</td>
<td>86% Single Unit 13% Apartment</td>
<td>0-4 years: 44% 5-9 years: 16% 10-19 years: 21% 20-29 years: 13% 30-49 years: 6%</td>
</tr>
<tr>
<td>NoBo Corner Library</td>
<td>16,674</td>
<td>54.02%</td>
<td>0-5 minutes: 87% 5-10 minutes: 13% 10+ minutes: 0%</td>
<td>32.20%</td>
<td>Under $50k: 27% $50-100K: 23% $100-150K: 18.5% $150K+: 22.6%</td>
<td>11.66%</td>
<td>77% Single Unit 23% Apartment</td>
<td>0-4 years: 49% 5-9 years: 15% 10-19 yrs: 20% 20-29 yrs: 14% 30-49 yrs: 2%</td>
</tr>
<tr>
<td>Gunbarrel</td>
<td>16,328</td>
<td>31.48%</td>
<td>0-5 minutes: 0% 5-10 minutes: 16.6% 10-15 minutes: 49.2% 15+ minutes: 34.2%</td>
<td>28.20%</td>
<td>Under $50k: 25.3% $50-100K: 27.2% $100-150K: 19.6% $150K+: 19.4%</td>
<td>6.44%</td>
<td>74% Single Unit 25% Apartment</td>
<td>0-4 years: 60% 5-9 years: 17% 10-19 years: 16% 20-29 years: 6% 30-49 years: 2%</td>
</tr>
<tr>
<td>Northeast Boulder (Iris/Palo Park/Valmont neighborhoods)</td>
<td>7,717</td>
<td>49.51%</td>
<td>0-5 minutes: 0% 5-10 minutes: 85% 10+ minutes: 5%</td>
<td>28.40%</td>
<td>Under $50k: 43.9% $50-100K: 23.9% $100-150K: 14.2% $150K+: 9.8%</td>
<td>13.10%</td>
<td>44% Single Unit 54% Apartment</td>
<td>0-4 years: 53% 5-9 years: 18% 10-19 years: 18% 20-29 years: 9% 30-49 years: 2%</td>
</tr>
<tr>
<td>Boulder (7 mile radius around the Main Library includes some parts of Louisville and Superior)</td>
<td>132,857</td>
<td>49.23%</td>
<td>0-5 minutes: 21% 5-10 minutes: 61% 10+ minutes: 18%</td>
<td>22.80%</td>
<td>Under $50k: 34% $50-100K: 24.5% $100-150K: 16.3% $150K+: 25.3%</td>
<td>6.74%</td>
<td>67% Single Unit 32% Apartment</td>
<td>0-4 years: 49% 5-9 years: 15% 10-19 years: 19% 20-29 years: 12% 30-49 years: 6%</td>
</tr>
</tbody>
</table>
### BPL Cardholders by Area of Residence

Data generated from BPL Patron Database 11/8/2017

<table>
<thead>
<tr>
<th>Area</th>
<th>Cardholders</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boulder</td>
<td>92,176</td>
<td>69.45%</td>
</tr>
<tr>
<td>Boulder County (no city)†</td>
<td>4,398</td>
<td>3.31%</td>
</tr>
<tr>
<td>Longmont*</td>
<td>5,646</td>
<td>4.25%</td>
</tr>
<tr>
<td>Lafayette*</td>
<td>3,601</td>
<td>2.71%</td>
</tr>
<tr>
<td>Louisville*</td>
<td>2,148</td>
<td>1.62%</td>
</tr>
<tr>
<td>Broomfield*</td>
<td>1,538</td>
<td>1.16%</td>
</tr>
<tr>
<td>Superior</td>
<td>1,860</td>
<td>1.40%</td>
</tr>
<tr>
<td>Denver</td>
<td>1,909</td>
<td>1.44%</td>
</tr>
<tr>
<td>Jefferson County</td>
<td>1,602</td>
<td>1.21%</td>
</tr>
<tr>
<td>Nederland</td>
<td>1,458</td>
<td>1.10%</td>
</tr>
<tr>
<td>Niwot</td>
<td>793</td>
<td>0.60%</td>
</tr>
<tr>
<td>Erie</td>
<td>896</td>
<td>0.68%</td>
</tr>
<tr>
<td>Lyons</td>
<td>774</td>
<td>0.58%</td>
</tr>
<tr>
<td>Westminster</td>
<td>844</td>
<td>0.64%</td>
</tr>
<tr>
<td>Adams County</td>
<td>661</td>
<td>0.50%</td>
</tr>
<tr>
<td>Weld County</td>
<td>364</td>
<td>0.27%</td>
</tr>
<tr>
<td>Aurora</td>
<td>264</td>
<td>0.20%</td>
</tr>
<tr>
<td>Arapahoe County</td>
<td>343</td>
<td>0.26%</td>
</tr>
<tr>
<td>Larimer County</td>
<td>69</td>
<td>0.05%</td>
</tr>
<tr>
<td>Ft. Collins</td>
<td>25</td>
<td>0.02%</td>
</tr>
<tr>
<td>Loveland</td>
<td>18</td>
<td>0.01%</td>
</tr>
<tr>
<td>Berthoud</td>
<td>6</td>
<td>0.00%</td>
</tr>
<tr>
<td>Other</td>
<td>11338</td>
<td>8.54%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>132731</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

† 75% are cardholders with addresses in unincorporated Boulder County (primarily north Boulder and Gunbarrel). 25% are cardholders with addresses in small mountain towns (i.e. Jamestown, Eldorado Springs, etc.)

*Areas served by other Flatirons Library Consortium libraries.
### Colorado Library Law – The Quick Guide

#### Comparison of Library Districts and a Regional Library Authority

**CRS 24-90-107,108,109,112,113.3, 114**  
**CRS 24-90-110.7**

<table>
<thead>
<tr>
<th>Library District (LD)</th>
<th>Regional Library Authority (RLA)</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library District is a governmental unit created by one or more cities or counties.</td>
<td>Regional Library Authority is a governmental entity created by an agreement between two or more governmental units. These could be cities, counties, and/or library districts.</td>
<td></td>
</tr>
<tr>
<td>Library District is a political subdivision of the state, like special districts, cities, towns, and counties.</td>
<td>Participants agree to finance, operate, and maintain publicly-supported library services for the agreed-upon regional area.</td>
<td></td>
</tr>
</tbody>
</table>

| **Method of Establishment:**          |                                 |      |
| Library Districts are formed by a resolution of ordinance from a city or a county OR by a petition. | Regional Library Authority (RLA) | Both Library District and Regional Library Authority must hold at least one public hearing addressing the purposes, powers, rights, obligations, and responsibilities of each unit which is forming the district or library authority. The Legal Service Area (LSA) must be identified and specify the mill levy or other type and/or amount of funding. |      |
| Specific requirements and procedures are found in **CRS 24-90-107** | ▪ Can’t be formed unless each governmental unit passes a resolution or ordinance AND has a contract with the other units. | Any new or increased tax requires voter approval. |
| Any new or increased tax requires voter approval. | ▪ Resolution or ordinance must describe legal service area (LSA) of the authority, the governance, and state that the electors shall approve sales and/or use tax or any ad valorem tax before taxes can be levied. |      |
| | ▪ Boundary of the RLA may not be less than the entire area of any municipality and any other unit forming the RLA, except that it may be less than the entire area of a county. |      |
| | ▪ Any new or increased tax requires voter approval. |      |

| **Contract or written agreement:**   |                                 |      |
| **CRS 24-90-109 (p)**               |                                 |      |
| A contract or inter-governmental agreement (IGA) may be made after the establishment of the district and after appointment of trustees. | **CRS 24-90-110.7 (2)** | Any new or increased tax requires voter approval. |
| Contract for library services is between each participating governmental unit and the library district board. | ▪ Contract must be signed before the establishment of the Regional Library Authority (RLA). |      |
| | ▪ Effected within 90 days. |      |
| | ▪ Between each participating governmental unit. |      |
| | ▪ Must describe boundaries of the RLA. |      |
| | ▪ Must address governance of RLA. |      |

---

**Web Address:** [www.ColoradoStateLibrary.org](http://www.ColoradoStateLibrary.org)

---

**City Council Study Session Page 22 of 76**
<table>
<thead>
<tr>
<th>Library District (LD) CRS 24-90-107,108,109, 112, 113.3, 114</th>
<th>Regional Library Authority (RLA) CRS 24-90-110.7</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example:</strong> between the library district and a school board OR the library district and a municipality, OR the library district and the county that will pay for extending services to non-district residents.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CRS 24-90-113.3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A governmental unit (municipality, county, school district) may contract to receive library services from an existing library. Contract must specify:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- geographic area covered by contract</td>
<td>- Must address financial obligations for each unit in the RLA.</td>
<td></td>
</tr>
<tr>
<td>- amount of money paid to library</td>
<td>- Must designate a financial officer.</td>
<td></td>
</tr>
<tr>
<td>- length of contract</td>
<td>- Electors must approve sales or use taxes, or ad valorem taxes.</td>
<td></td>
</tr>
<tr>
<td>- any other necessary information.</td>
<td>- May modify Legal Service Area (LSA) boundaries after establishment.</td>
<td></td>
</tr>
<tr>
<td><strong>Board of Trustees:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CRS 24-90-108</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board size must be 5-7. Must be chosen from residents in the Legal Service Area. (LSA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- initial board is appointed by establishing governmental unit(s)</td>
<td>- How property or assets will be disbursed; divided, or distributed.</td>
<td></td>
</tr>
<tr>
<td>- adopt bylaws, rules, and regulations for guidance</td>
<td>- Terms for contract continuation or termination agreements;</td>
<td></td>
</tr>
<tr>
<td>- vacancies to be filled as soon as possible</td>
<td>- Contracts can’t be terminated if there are financial obligations unless escrow payment arrangements are made.</td>
<td></td>
</tr>
<tr>
<td>- bylaws must define ‘good cause’ for removal of trustee</td>
<td>- Expected sources of revenue and any other requirements.</td>
<td></td>
</tr>
<tr>
<td>- officer designations and how they’re elected/appointed</td>
<td>- Board of Directors – no size specified.</td>
<td></td>
</tr>
<tr>
<td>- meeting conduct rules</td>
<td>Contract with establishing governmental units must specify:</td>
<td></td>
</tr>
<tr>
<td>- how to amend bylaws</td>
<td>- number of directors</td>
<td></td>
</tr>
<tr>
<td>- length and term numbers of board members</td>
<td>- how appointed</td>
<td></td>
</tr>
<tr>
<td>- file bylaws with legislative body of each governmental unit.</td>
<td>- terms of office</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- compensation (if any)*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- how to fill vacancies</td>
<td>- officers—how selected and duties</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- voting requirements for board action</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Powers and Duties:</strong> <strong>CRS 24-90-10</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Have supervision and care for library property, rooms, and buildings.</td>
<td>- Acquire, construct, finance, operate, or maintain public library services located in the boundaries of the authority.</td>
<td></td>
</tr>
<tr>
<td>- Employ a librarian, and other staff as recommended by librarian.</td>
<td>- Make and enter into contracts.</td>
<td></td>
</tr>
<tr>
<td>- Prescribe salary and duties.</td>
<td>- Employ agents and employees.</td>
<td></td>
</tr>
<tr>
<td>- Submit budget, and certify the sums necessary to operate in the coming year.</td>
<td>- Acquire, hold, lease, sell, or dispose of real or personal property, commodity, or service.</td>
<td></td>
</tr>
</tbody>
</table>

*Note: The image contains a table comparing Library Districts and a Regional Library Authority, along with examples and explanations of their respective roles and responsibilities.*
<table>
<thead>
<tr>
<th>Library District (LD)</th>
<th>Regional Library Authority (RLA)</th>
<th>Both</th>
</tr>
</thead>
</table>
| CRS 24-90-107,108,109, 112, 113.3, 114 | CRS 24-90-110.7 | |}

- Adopt a budget and make appropriations.
- Accept gifts, money, and property.
- Hold and acquire land by gift, lease, or purchase.
- Lease, purchase, or build as needed.
- Sell, assign, transfer, or convey library property no longer needed.
- Make a finding that the property is no longer necessary. If property is going to another governmental agency, a finding isn’t needed.
- Borrow funds with a short-term loan – no longer than six months.
- Authorize bonding of financial persons.
- Conduct an annual audit.
- Authorize purchase of library materials and equipment.
- Hold title to property given to library.
- Have authority to enter into contracts.
- Send the Public Library Annual Report to the State Library.
- May allow nonresidents to use the library materials, equipment and services.
- Serve as a repository for school district collective bargaining agreements.
- Adopt, by resolution, rules respecting the exercise of its powers and the carrying out of its purposes.

**Funding**

**CRS 24-90-107 (3) (a) (V)**
Mill levy or other type/amount of funding specified in the resolution or ordinance by the establishing bodies OR in the establishing petition.

**CRS 24-90-112**
**CRS 24-90-112.5**
May raise mill levy or issue bonds if electors approve.

**CRS 24-90-110.7(2)(f) and CRS 24-90-110.7(3)**
If the RLA levies taxes the contract must state:
- that the RLA adopt a resolution about levying taxes or fees;
- be fair with, and not impose undue burden on anyone;
- the taxes will conform other CRS requirements
- a designated financial officer to coordinate collection
- this person shall identify businesses eligible to collect sales and use taxes.

Taxation powers:
- Sales or use tax, or both
- Ad valorem tax*

* *A percentage of value tax. Sales, income, and property taxes are three of the more popular ad valorem taxes*

All funding levies must be approved by electors in the legal service area of the Library District or Regional Library Authority (RLA).
<table>
<thead>
<tr>
<th>Library District (LD)</th>
<th>Regional Library Authority (RLA)</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State Constitution - Article X (TABOR)</strong></td>
<td>Approvals of any tax levy must conform to the Taxpayer Bill of Rights (TABOR) requirements.</td>
<td>Approvals of any tax levy must conform to the Taxpayer Bill of Rights (TABOR) requirements.</td>
</tr>
<tr>
<td>CRS 24-90-114</td>
<td>Library District may be abolished only by a vote of the registered electors in the district. Board of Trustees will dispose of the materials and equipment.</td>
<td>Library District may be abolished only by a vote of the registered electors in the district. Board of Trustees will dispose of the materials and equipment.</td>
</tr>
<tr>
<td>CRS 24-90-110.7 (2)(e)</td>
<td>The contract between the governmental units shall specify the length of the contract or the method of termination of the Regional Library Authority.</td>
<td>The contract between the governmental units shall specify the length of the contract or the method of termination of the Regional Library Authority.</td>
</tr>
</tbody>
</table>

Note: Further specific Regional Library Authority powers, restrictions, and requirements are found in the full CRS 24-90-110.7 text: [http://www.cde.state.co.us/cdelib/librarylaw/part1#24-90-110.7](http://www.cde.state.co.us/cdelib/librarylaw/part1#24-90-110.7)


* This is a rough, non-legal summary of the statutes. Consult with your respective city, county, or district lawyers for legal advice on, and implications of, Colorado Library Law, or call the Colorado State Library for additional information.

For further Public Library Information: [www.ColoradoStateLibrary.org/LibraryDevelopment/PublicLibraries](http://www.ColoradoStateLibrary.org/LibraryDevelopment/PublicLibraries)
<table>
<thead>
<tr>
<th>Library System</th>
<th>Governance</th>
<th>2015 Total Revenue and Expenditures</th>
<th>Difference between Expenditures per Capita and per Registered Borrower</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Operating Revenue</td>
<td>Operating Expenditures</td>
</tr>
<tr>
<td>Eagle Valley Library District</td>
<td>district</td>
<td>$4,481,284</td>
<td>$4,120,536</td>
</tr>
<tr>
<td>High Plains Library District (Weld County)</td>
<td>district</td>
<td>$27,736,107</td>
<td>$16,845,943</td>
</tr>
<tr>
<td>Rangeview Library District (Anythink / Adams County)</td>
<td>district</td>
<td>$14,041,957</td>
<td>$13,625,528</td>
</tr>
<tr>
<td>Arapahoe Library District*</td>
<td>district</td>
<td>$29,000,000</td>
<td>$29,000,000</td>
</tr>
<tr>
<td>Douglas County Libraries</td>
<td>district</td>
<td>$22,087,167</td>
<td>$21,034,336</td>
</tr>
<tr>
<td>Pikes Peak Library District</td>
<td>district</td>
<td>$29,421,973</td>
<td>$25,745,063</td>
</tr>
<tr>
<td>Denver Public Library</td>
<td>city</td>
<td>$44,001,954</td>
<td>$42,373,939</td>
</tr>
<tr>
<td>Pueblo City-County Library District</td>
<td>district</td>
<td>$9,829,572</td>
<td>$9,658,363</td>
</tr>
<tr>
<td>Mesa County Public Library District</td>
<td>district</td>
<td>$6,771,855</td>
<td>$5,608,851</td>
</tr>
<tr>
<td>Loveland Public Library</td>
<td>city</td>
<td>$3,158,753</td>
<td>$3,158,753</td>
</tr>
<tr>
<td>Jefferson County Library</td>
<td>district</td>
<td>$24,960,841</td>
<td>$23,977,594</td>
</tr>
<tr>
<td>Boulder Public Library</td>
<td>city</td>
<td>$7,690,028</td>
<td>$8,223,136</td>
</tr>
<tr>
<td>Louisville Public Library</td>
<td>city</td>
<td>$1,453,437</td>
<td>$1,510,988</td>
</tr>
<tr>
<td>Poudre River Public Library District [Fort Collins]</td>
<td>district</td>
<td>$9,280,762</td>
<td>$8,473,850</td>
</tr>
<tr>
<td>Broomfield/Eisenhower Public Library</td>
<td>city</td>
<td>$2,359,427</td>
<td>$2,328,907</td>
</tr>
<tr>
<td>Longmont Public Library</td>
<td>city</td>
<td>$3,384,619</td>
<td>$3,256,590</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>$239,659,736</strong></td>
<td><strong>$218,942,377</strong></td>
</tr>
<tr>
<td><strong>AVERAGE</strong></td>
<td></td>
<td><strong>$14,097,631.53</strong></td>
<td><strong>$12,878,963</strong></td>
</tr>
</tbody>
</table>

*Voters passed a significant mill levy increase for Arapahoe Library District in 2016. Estimates provided by Arapahoe Library District administration.

Boulder Public Library (BPL) would need an operating budget of $11.4M to reach the average expenditure per registered borrower. Since overhead costs such as Human Resources, IT, Finance, Facilities, etc. are not billed directly to BPL, subtract 12% for overhead/economies of scale. The adjusted budget required for BPL to reach the average expenditure per user is $10.03M.
## Library Accounts and Visits Comparison

Data generated from Library Research Service 2015 Colorado Public Library Statistics

[https://www.lrs.org/public/data/csv/id/4008631/](https://www.lrs.org/public/data/csv/id/4008631/)

<table>
<thead>
<tr>
<th>Library System</th>
<th>Legal Service Area Population</th>
<th>Library Accounts as a % of Population</th>
<th>Library In-Person Visits per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nucla Public Library</td>
<td>710</td>
<td>351%</td>
<td>7.74</td>
</tr>
<tr>
<td>Vail Public Library</td>
<td>5,483</td>
<td>302%</td>
<td>19.83</td>
</tr>
<tr>
<td>La Veta Public Library District</td>
<td>7,879</td>
<td>300%</td>
<td>30.66</td>
</tr>
<tr>
<td>San Miguel Library District # 1/Telluride</td>
<td>7,879</td>
<td>233%</td>
<td>41.81</td>
</tr>
<tr>
<td>Basalt Regional Library District</td>
<td>777</td>
<td>214%</td>
<td>12.66</td>
</tr>
<tr>
<td>Rio Grande County Library District</td>
<td>11,543</td>
<td>198%</td>
<td>3.9</td>
</tr>
<tr>
<td>Rocky Ford Public Library</td>
<td>4,000</td>
<td>183%</td>
<td>14.14</td>
</tr>
<tr>
<td>Ridgway Public Library District</td>
<td>979</td>
<td>155%</td>
<td>22.26</td>
</tr>
<tr>
<td>Hinsdale Library District/Lake City</td>
<td>374</td>
<td>149%</td>
<td>0.13</td>
</tr>
<tr>
<td>Wray Public Library</td>
<td>2,367</td>
<td>146%</td>
<td>8.37</td>
</tr>
<tr>
<td>Canon City Public Library</td>
<td>16,679</td>
<td>146%</td>
<td>8.12</td>
</tr>
<tr>
<td>Cortez Public Library</td>
<td>9,007</td>
<td>144%</td>
<td>18.87</td>
</tr>
<tr>
<td>Spanish Peaks Library District</td>
<td>6,711</td>
<td>138%</td>
<td>13.22</td>
</tr>
<tr>
<td>Ouray Library District</td>
<td>1,033</td>
<td>133%</td>
<td>8.56</td>
</tr>
<tr>
<td>Boulder Public Library</td>
<td>108,000</td>
<td>131%</td>
<td>9.16</td>
</tr>
<tr>
<td>Nederland Community Library District</td>
<td>1,534</td>
<td>113%</td>
<td>15.08</td>
</tr>
<tr>
<td>Longmont Public Library</td>
<td>92,858</td>
<td>93%</td>
<td>6.48</td>
</tr>
<tr>
<td>Louisville Public Library</td>
<td>20,801</td>
<td>89%</td>
<td>6.83</td>
</tr>
<tr>
<td>Estes Valley Public Library District Estes Park</td>
<td>6,362</td>
<td>89%</td>
<td>13.53</td>
</tr>
<tr>
<td>Pueblo City-County Library District</td>
<td>163,591</td>
<td>84%</td>
<td>8.94</td>
</tr>
<tr>
<td>Lafayette Public Library</td>
<td>28,261</td>
<td>81%</td>
<td>5.37</td>
</tr>
<tr>
<td>Poudre River Public Library District Fort Collins</td>
<td>164,207</td>
<td>80%</td>
<td>5.21</td>
</tr>
<tr>
<td>Denver Public Library</td>
<td>682,545</td>
<td>69%</td>
<td>6.24</td>
</tr>
<tr>
<td>Loveland Public Library</td>
<td>76,897</td>
<td>66%</td>
<td>5.33</td>
</tr>
<tr>
<td>Jefferson County Public Library</td>
<td>565,524</td>
<td>64%</td>
<td>4.72</td>
</tr>
<tr>
<td>Douglas County Libraries</td>
<td>322,387</td>
<td>64%</td>
<td>6</td>
</tr>
<tr>
<td>High Plains Library District (Weld County)</td>
<td>285,174</td>
<td>45%</td>
<td>5.76</td>
</tr>
<tr>
<td>Pikes Peak Library District Colorado Springs</td>
<td>465,101</td>
<td>43%</td>
<td>5.44</td>
</tr>
</tbody>
</table>
MEETING DATE: November 28, 2017

AGENDA TITLE
7:30-9 PM Climate Commitment

PRIMARY STAFF CONTACT
Kendra Tupper, Chief Sustainability Officer
Heather Bailey, Executive Director of Energy Strategy and Electric Utility Development

REQUESTED ACTION OR MOTION LANGUAGE
General Direction from Council

ATTACHMENTS:
- Description
  - Memo and Attachments
EXECUTIVE SUMMARY
It is now widely acknowledged that climate change is underway, with impacts increasing both locally and globally. Recognizing this, Boulder has been a leader in coordinated global action to restore climate stability. At the same time, the city and community have sought strategies to reduce our climate impacts that simultaneously enhance our community’s resilience to climate change and support a vital and equitable economy.

The results of the November 2017 election advance the continued exploration of one of the centerpiece strategies to address climate change—operation of a municipal electric utility. This funding will enable staff to complete the steps necessary to quantify the cost of acquiring existing Xcel Energy electric system assets, construct the separation plan, negotiate a power supply, and verify whether the charter metrics can be met so that the
council and community can make a more informed decision in a final vote on operating a municipal utility. The city is now in a strong position to follow the path laid out by the recent decision at the Public Utilities Commission to pursue the operation of a local electric utility.

The purpose of this study session is to provide the background, context, challenges and opportunities that exist in meeting the city’s energy and climate goals, in preparation for a more in-depth study session on this topic in April of 2018. This memo highlights the work that has led to where the city is today – the municipalization process, the many non-municipalization city-led energy programs and pilots and the significant progress that has been made towards community objectives through the city’s existing Climate Commitment work. This memo details some of the limitations and barriers that exist in state-level policy and provides information on parallel paths that have been pursued and will likely continue or expand regardless of municipalization, as the city needs to keep all options open to achieve its goals. Lastly, the memo serves to inform council of the next steps in the municipalization process following the outcome of the November 2017 election.

This memo is organized in the following way:

- Key issues
- Background: Climate Commitment and Energy Future goals, review of current climate and energy efforts, and municipalization
- Gap Analysis: Discussion of the gap the city will have in meeting climate and energy goals without municipalization
- Analysis: Parallel paths to advance climate and energy goals
- Next steps

**KEY ISSUES IDENTIFIED**
The Boulder community is united in the belief that we need to address climate change. Recent surveys indicate that 94 percent of the community believe climate change is happening and 90 percent report that they are taking steps to reduce their climate impact. The city adopted specific energy-related goals under the Climate Commitment in 2016.

**CITY OF BOULDER CLIMATE AND ENERGY GOALS**

- **80% X 2050**
  - Community Emissions Reduction

- **80% X 2030**
  - City Organization Emissions Reduction

- **100% X 2030**
  - Clean Electricity

- **100 X 2030**
  - Megawatts Local Generation
While the Climate Commitment goals are the quantifiable targets, the Energy Future goals, adopted in 2011, were intended to ensure that the way those goals are met is consistent with city values and priorities. The six Energy Future goals are:

1. Ensure a stable, safe and reliable energy supply
2. Ensure competitive rates, balancing short-term and long-term interests
3. Significantly reduce carbon emissions and pollutants
4. Provide energy customers with a greater say about their energy supply
5. Promote local economic vitality
6. Promote social and environmental justice

Both the Climate Commitment energy goals (what the city is trying to achieve) and the Energy Future goals (how the city wants to achieve them) remain a priority for Boulder. From its inception, the aim of the municipalization effort has been to enable the community to meet these collective goals. As the analyses provided later in this document demonstrate, having local control of the city’s electricity system is the most aggressive and only path identified, at this time, that allows the community to control the achievement of its climate and energy goals. A municipal utility can provide a wider variety of programs, incentives and financing mechanisms that enable residents and businesses to replace fossil-fuel dependent systems and appliances with renewables-based alternatives.

In Colorado, which has a regulated electricity market, there are limitations to what individual customers and communities can do related to electricity supply if they live within the jurisdiction of a state-regulated utility. Without a municipal electric utility—which is not regulated by the state’s Public Utilities Commission—or changes to state law, communities cannot choose to purchase power from clean energy suppliers, solar power or other local generation. Local generation like solar and battery storage cannot be shared across property lines, and an individual property cannot generate more than 120 percent of the energy consumed on that property. These are examples of barriers the city faces today in meeting its goals under the current Colorado statutory and regulatory structure.

Attachment A, “Energy Future Goals Matrix,” first introduced in 2013, serves to unpack the Energy Future Goals and describe ways each is impacted or constrained by state/regulatory control. This matrix:

- includes an overview of progressive technologies and practices,
- indicates which Energy Future goals would be addressed, and
- describes whether each goal is technically and legally possible under the Status Quo with Xcel Energy, would require a Municipal Utility, or would require a change in state-level policy.

This memo includes a section on parallel paths or alternative strategies to make progress towards the city’s goals. The intention is to present a wide range of levers that can be
pulled to move the city forward. Not all of these efforts are fully staffed and funded within existing work plans and budgets. It is important to note, that if council directs the pursuit of certain strategies, staff will have to do an analysis of tradeoffs with budget and staff time to complete these with existing resources. This analysis could be presented to council in April 2018.

Following the November 2017 vote, the city will proceed with its path to municipalize by taking the necessary steps to verify the costs and assumptions associated with acquiring the electric distribution system. Once verified, council and the community will have an opportunity to decide if it is still the right path forward for Boulder. The key near-term issues, which are outlined further in this memo are:

- Finalizing agreements with Xcel to meet the PUC final order
- Completing the major milestone activities that will determine the actual cost of municipalization, outlined in Attachment B, “Municipalization Work Plan.”
- Negotiating power supply agreements and developing future energy services to achieve the city’s Climate Commitment and Energy Future goals.

Questions for Council
1. Does council have any questions about the next steps and milestones related to municipalization?
2. Does the proposed workplan provide the information council will need to determine the viability of municipalization once the tasks are complete?
3. Staff plans to return to council in April 2018 with a brief update of progress on the city’s energy-related Climate Commitment goals, a discussion of city’s policy on Renewable Energy Credits (RECs), and a brief update on municipalization. Is there anything else that council would like to see covered at this study session?
4. Are there any strategies in the parallel path section of this memo that council would like prioritized? If so, staff can further explore and return in April 2018 with additional information on budget and staff implications required to implement.

BACKGROUND
The Boulder community has a long history of both recognizing and acting in response to climate change, leading to the adoption of the Energy Future goals in 2011 and the Climate Commitment goals in 2016. Attachment C, “Background,” provides the

---

1 The agreements ordered by the PUC are 1) an agreement with Xcel that will provide Xcel with property rights necessary to serve its customers after the city has begun to operate its electric utility 2) a revised list of assets outside substations that includes any real property the city will seek to acquire, as well as a revised list of poles and 3) an agreement (or agreements) with Xcel regarding how the city will pay Xcel for the work it will do to construct new facilities or reconfigure existing facilities it will continue to own.

2 A study session to review all four areas of focus within the larger climate commitment is being scheduled for Q4 of 2018.
context and history for these goals, as well as a discussion of how climate change may be accelerating and how this impacts long-term climate work for the city.

Boulder’s 80 percent emissions reduction goal was formalized in December 2016 when the City Council voted unanimously to approve the community-wide Climate Commitment. Based on the 2016 GHG Inventory (currently being finalized for release to council in an Information Packet in early 2018), the city has achieved a 13 percent emissions reduction based on a 2005 baseline.\(^3\)

The Climate Commitment document, developed over three years with the direct involvement of over 2,000 community members, outlines four broad areas of action:

1. **ENERGY**: Transition from fossil fuels to renewable energy
2. **ECOSYSTEMS**: Improve the ability to sequester carbon/stabilize climate change impacts
3. **RESOURCES**: Transition to a resource-conserving economic system
4. **EQUITY**: Ensuring a just and equitable transition to a low carbon economy and society

As part of the implementation strategy presented by staff in 2016, a staged approach was proposed to focus the city and community’s available resources. In parallel with these efforts, city staff is developing strategies for integrating equity, social justice and inclusivity into all aspects of these efforts. While this memo focuses on energy system change, a more comprehensive discussion of the climate strategy will occur at a study session in Q4 of 2018.

Energy System Change: 2017-2020
- Update long term strategy (if necessary)
- Develop 5 year action plans
- Implement core programs and new pilots
- Explore alternatives to the CAP Tax

Ecosystems: 2018-2020
- Update Open Space master plan and Urban Forest Management Strategy
- Manage impacts of Emerald Ash Borer

Resource Use: 2019-2020
- While work on water and waste has always been a focus for the city, staff looks to expand efforts into circular economy principles in 2019.

\(^3\) The Kyoto protocol goal was based on a 1990 baseline. In 2015, the city changed its baseline to 2005 to be aligned with both the State of Colorado and a growing number of cities that have chosen this baseline based on more accurate data availability and standardization.
Energy-Related Climate Action Goals
As part of the Climate Commitment, a set of energy related goals was established. Table 1 shows a summary of major targets. The full set can be found in Attachment D, “Climate-related Energy Goals.”

<table>
<thead>
<tr>
<th>Action</th>
<th>Metric</th>
<th>2020</th>
<th>2030</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions Reduction</td>
<td>GHG</td>
<td>15%</td>
<td>50%</td>
<td>80%</td>
</tr>
<tr>
<td>% electricity from renewables</td>
<td>% of electricity</td>
<td>40%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Local Renewable Energy</td>
<td>Megawatt (MW)</td>
<td>50MW</td>
<td>100MW</td>
<td>175MW</td>
</tr>
<tr>
<td>Reduction in Building Emissions</td>
<td>% below 2005</td>
<td>25%</td>
<td>30%</td>
<td>75%</td>
</tr>
<tr>
<td>Vehicle Miles Traveled (VMT)</td>
<td>Millions of miles</td>
<td>2.32</td>
<td>1.95</td>
<td>1.59</td>
</tr>
<tr>
<td>Electric &amp; alternative vehicles</td>
<td>% light duty vehicles</td>
<td>15%</td>
<td>45%</td>
<td>75%</td>
</tr>
</tbody>
</table>

Review of Current Climate and Energy Efforts
Although the city dedicated staff and resources to actively pursue municipalization, other climate and energy efforts have not been stalled or set aside. Since the decision to explore municipalization in 2011, the city has added three major programs/policies, made significant updates to the energy codes, launched new work in local solar and electric vehicles, and piloted several new initiatives. The memo prepared for the Dec. 6, 2016 council meeting outlined the extensive set of strategies and programs the city has already initiated as part of its action plan to achieve climate and energy goals.

In 2018, two overarching efforts related to Climate Commitment are 1) exploring alternative options to the Climate Action Plan (CAP) Tax, and 2) creating a five-year action plan for the Climate Commitment. In 2018, staff will continue to implement and improve the following core programs (Figure 1) and key pilots (Figure 2). Attachment E, “Climate-related Energy Programs, Initiatives and Pilot Projects,” provide more detail on these.

![Figure 1: Core Climate and Energy Programs](image)

---

4 The Building Performance Ordinance, the Universal Zero Waste Ordinance, and the Energy Offset Requirement for marijuana facilities
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CU ENERGY GREEN TEAMS</strong></td>
<td>A collaborative program with the University of Colorado Environmental Center to foster peer-to-peer education in student-heavy neighborhoods about energy efficiency and Boulder’s energy goals.</td>
</tr>
<tr>
<td><strong>ENERGY CODES</strong></td>
<td>Energy and sustainability requirements for new construction and renovations of existing buildings. The city of Boulder has some of the most progressive and efficient energy codes in the nation, and is working towards a goal of net zero energy codes for all buildings by the year 2031.</td>
</tr>
<tr>
<td><strong>ENERGY SMART AND PACE</strong></td>
<td>EnergySmart and Partners for a Clean Environment (PACE): In partnership with Boulder County, these programs provide rebates and one-on-one advising services to homes and businesses in the areas of energy, water, waste and transportation.</td>
</tr>
<tr>
<td><strong>MARIJUANA ENERGY REQUIREMENTS</strong></td>
<td>Continued tracking and enforcement of the requirements for marijuana business to offset 100% of their electricity consumption with renewable energy.</td>
</tr>
<tr>
<td><strong>SMARTREGS</strong></td>
<td>Requirements for energy efficiency (equivalent to the 2000 International Energy Conservation Code) in rental housing units, which account for over half of the housing stock, within the city of Boulder. Passed in 2010, landlords were given two rental license cycles (8 years) to comply.</td>
</tr>
<tr>
<td><strong>UNIVERSAL ZERO WASTE ORDINANCE</strong></td>
<td>Requirements to expand recycling and composting to all Boulder residents, employees and visitors in homes, businesses and special events.</td>
</tr>
</tbody>
</table>

**Figure 2: Energy Pilot Projects**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESILIENT ENERGY INFRASTRUCTURE</strong></td>
<td>A grant-funded effort to support the development of projects that increase facility and community resilience through infrastructure. Sites include Boulder Housing Partners and the Via Mobility operation center.</td>
</tr>
<tr>
<td><strong>NATURAL GAS REPLACEMENT</strong></td>
<td>Strategy development to support the conversion of residential natural gas appliances like water heaters and furnaces to efficient electric models.</td>
</tr>
</tbody>
</table>
Municipalization Effort
While the city has been exploring municipalizing its electric system for a long time, the most recent municipalization project formally began in 2010 as an effort to provide Boulder residents, businesses and institutions with electricity that is increasingly clean, reliable and competitively priced while allowing for more local decision-making and control. After extensive analysis and community input, City Council directed staff in 2013 to move forward with activities to launch and operate a local electric utility, including legal and regulatory actions and development and implementation of a detailed transition plan to achieve the city’s goals.

Since 2011, the city has accomplished significant milestones related to the utility’s creation and operation, including:

- In 2013, staff completed an extensive feasibility analysis demonstrating that a locally owned utility could be formed while meeting the requirements that Boulder voters placed in the City Charter related to rates, debt service coverage, reliability, and renewable energy. The analysis was reviewed by an independent third-party evaluator that affirmed its methodology and findings.

- From 2014 to the present, the city developed and began implementing a detailed transition work plan that included exploring and negotiating power supply options, obtaining proposals for the operation of the system, developing engineering plans and specifications, forming working groups to recommend and
implement energy services to support the local community, developing a key account program, and documenting electric utility policies and procedures for customer service, operations, maintenance, design, construction and safety.

- In 2015, Boulder began the **regulatory process at the PUC**, filing an application for the transfer of certain assets owned by the Xcel Energy to the city.

- In 2016, the city entered into a **contract with the CU and the National Renewable Energy Labs (NREL) as part of** an innovative partnership for energy resilience and renewable energy system design and development.

- In 2017, the PUC issued a ruling on the city’s application creating a **path forward** to proceed with municipalization.

- In 2017, **voters passed** an extension and an increase in **funding** for municipalization efforts as well as a requirement for a **final community vote**.

The 2017 PUC written order on the transfer of Xcel’s assets case created a clear path for the city to proceed with municipalization. Based on the ruling, the city will continue exploring the items necessary to determine whether to move forward with the creation of the utility or take an off-ramp. This includes various technical, legal and regulatory proceedings, which are highlighted in Table 2.

**Table 2: Highlights of Upcoming Municipalization Activities**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) A 90-day filing at the PUC of agreements with Xcel</td>
<td>Due Dec. 13, 2017</td>
</tr>
<tr>
<td>2) Prepare for and proceed with condemnation if necessary</td>
<td>Q1 2018 through Q2 2019</td>
</tr>
<tr>
<td>3) Engineering design and bidding of the separation work</td>
<td>Q1 2018 through Q2 2019</td>
</tr>
<tr>
<td>4) Xcel OATT(^5) Load interconnection process</td>
<td>Q4 2017 through Q1 2018</td>
</tr>
<tr>
<td>5) Power supply evaluation and negotiation</td>
<td>Q4 2017 through Q1 2018</td>
</tr>
<tr>
<td>6) Implementation of the municipalization transition work plan and other start-up activities necessary to launch and operate an electric utility</td>
<td>2018 through 2022</td>
</tr>
</tbody>
</table>

---

\(^5\) Open Access Transmission Tariff (OATT)
In 2019 or 2020, city staff will return to council for a go/no-go decision on proceeding with municipalization after the condemnation value and separation construction bids have been received. If council decides to move forward, the community will vote on whether to proceed with municipalization. While city staff has included estimated costs in the models for evaluating the financial viability of operating the electric utility, validating these estimates with the actual costs will provide assurances that the utility remains financially feasible and that it is prudent to invest significant capital resources in constructing and acquiring the electric system.

Figure 3 summarizes the major highlights and milestones achieved and next steps in the municipalization process. Attachment B, “Municipalization Work Plan,” provides more details on key next steps and timing of the municipalization work plan going forward.

**Figure 3: Municipalization Timeline**

<table>
<thead>
<tr>
<th>Year</th>
<th>Milestone Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>Completed feasibility analysis; local utility could be formed under charter requirements</td>
</tr>
<tr>
<td>2014</td>
<td>Development of detailed transition plan that will prepare the city to stand-up utility</td>
</tr>
<tr>
<td>2015</td>
<td>Initiated separation process at the PUC</td>
</tr>
<tr>
<td>2017</td>
<td>Received a PUC ruling; clarified path forward for municipalization</td>
</tr>
<tr>
<td>2017 to 2018</td>
<td>Gain approval for transmission interconnection and contract for power supply</td>
</tr>
<tr>
<td>2018 to 2019</td>
<td>Initiate negotiation and/or condemnation process to buy Xcel’s electric assets</td>
</tr>
<tr>
<td>2018 to 2022</td>
<td>Implement transition plan and construct separation of the systems</td>
</tr>
<tr>
<td>2023</td>
<td>Cut-over; begin operation of new utility</td>
</tr>
</tbody>
</table>

**GAP ANALYSIS: MEETING CLIMATE AND ENERGY GOALS**

Many of the factors that shape Boulder’s energy future are beyond direct local control. Global energy markets, federal and state legislation and technology advances create the context within which communities like Boulder will need to plan and implement strategies for a clean, reliable and affordable energy future. But Boulder’s ability to influence the source of its energy supply within the current context is extremely limited.
In Colorado, a regulated electricity market state, customers have no choice (apart from trying to influence state legislation and proceedings at the Public Utilities Commission) about who delivers their power, how it is managed and how much it costs. The legislature sets statewide policy and vision, and the PUC is the venue where policy is implemented. Rules are set, programs are designed and Xcel proposals are evaluated to ensure compliance with state law as well as for financial and environmental prudence. The city has had some success in influencing state legislation and PUC proceedings, and efforts will continue in both areas, in parallel with the municipalization effort.

It was the recognition of these constraints that led to the formation (in 2009) of many community working groups with over 200 residents and business people to explore alternatives to achieving deep emissions reduction. These efforts resulted in the development of the Energy Smart and PACE (Partners for a Clean Environment) programs, expansion of solar related programs, and the exploration of operating a municipal utility to accelerate renewable energy availability.

While the various environmental sustainability programs that were developed during this period have been highly successful and nationally recognized, it has also become clear that achieving both deep emissions reduction and other community energy goals is not possible without the full authority and resources of a utility committed to achieving 100 percent renewable energy within the next 15 to 20 years or significant state-level policy reform.

Examples of the constraints posed by the existing utility and regulatory structure include:

- Communities cannot choose to purchase power from clean energy suppliers, solar power or other local generation;
- Local generation cannot be shared across property lines;
- An individual property cannot generate more than 120 percent of the energy consumed on that property;
- Communities cannot invest in local infrastructure to support innovation, resilience, community vitality or meeting local goals;
- Communities cannot scale local programs to align with their goals without independent funding sources and greater access to data;
- There are prohibitions against building local generation on sites where an on-site load does not exist;
- Community solar gardens are limited to a competitive bid process and the environmental benefits (RECs) do not remain in the community; and
- There is an inability to promote adoption of certain technology or behaviors through innovative rate design.

A more thorough list of limitations is outlined in Attachment A, “Energy Future Goals Matrix.”
Energy Future Goals
The city’s Energy Future goals were designed to ensure that the way the city’s quantifiable Climate Commitment goals are met is consistent with city values and priorities. If the city does not municipalize, gaps will exist in meeting each one of these. Examples of some of these limitations is shown in Table 3.

Table 3: Limitations to Meeting Energy Future Goals

<table>
<thead>
<tr>
<th>Energy Future Goal</th>
<th>Limitations in Regulated Electricity Monopoly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure a stable, safe and reliable energy supply</td>
<td>Jurisdictions are not allowed to direct investments in their local distribution system. For example, reliability projects are extremely limited for customers and undergrounding of lines is under the control of the utility.</td>
</tr>
<tr>
<td>Ensure competitive rates, balancing short-term and long-term interests</td>
<td>Rates are determined through the Public Utility Commission’s regulatory process.</td>
</tr>
<tr>
<td>Significantly reduce carbon emissions and pollutants</td>
<td>The most impactful tactic to reduce emissions is decarbonization of our energy supply. See section below on 2050 Emissions Reductions Goals.</td>
</tr>
<tr>
<td>Provide energy customers with a greater say about their energy supply</td>
<td>Customers are not currently able to choose their energy supplier. In addition, there are a number of restrictions on creative customer choice options such as peer-to-peer, microgrids or virtual net-metering.</td>
</tr>
<tr>
<td>Promote local economic vitality</td>
<td>There are few mechanisms fostering local innovation and most energy expenditures leave the community (almost $300M annually(^6)). Also, Colorado municipal utilities have bills that are lower than investor-owned utilities for residential and commercial customers(^7).</td>
</tr>
<tr>
<td>Promote social and environmental justice</td>
<td>There are some programs that exist in the regulatory context, but more customized local programs could prioritize these community values.</td>
</tr>
</tbody>
</table>

2050 Emission Reduction Goals
As an early leader in climate action, Boulder was one of the first cities to recognize that achieving the emissions reduction levels necessary to stabilize climate by 2050 requires both transitioning most energy uses to electricity (electrification), and sourcing most or all this electricity from renewable sources. This insight was a primary consideration in the extended negotiations that took place with Xcel Energy around the extension of the franchise agreement in 2010, and the subsequent formal partnership explorations that took place in 2014 and 2017. In all cases, Xcel was unable to meet the city’s needs for renewable electricity.


\(^7\) [http://docs.wixstatic.com/ugd/104ed3_9f89a4a0de7245b79297127990d9a646.pdf](http://docs.wixstatic.com/ugd/104ed3_9f89a4a0de7245b79297127990d9a646.pdf)
City staff conducted extensive modeling of the emissions reduction potential under four different electricity source scenarios, Figure 4:

- Xcel’s 2016 Energy Resources Plan 4 (Xcel ERP midline)—**Scenario A**
- Xcel’s 2016 Energy Resources Plan 4D—a scenario with more aggressive adoption of renewables than Plan 4—**Scenario B**
- A gradual transition to a municipal utility (additional renewables) — **Scenario C**
- An accelerated transition to a municipal utility that achieved 100 percent renewable electricity by 2030 (Accelerated muni)—**Scenario D**

**Figure 4: Percent Emissions Reduction Below 2005 Baseline, Utility Scenarios A through D**

Key takeaways from this modeling are summarized in Table 4 below.

**Table 4: Key Takeaways from Emissions Reduction Modeling**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Potential Emissions Reduction by 2050</th>
<th>Cumulative Emissions Reduction by 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xcel</td>
<td>64%</td>
<td>Compared to the Xcel ERP midline (A), an accelerated municipal utility (D) would avoid 29 million metric tons of carbon—the equivalent of <strong>eliminating 16 years</strong> of TOTAL community emissions. The figure below compares all four scenarios.</td>
</tr>
<tr>
<td>Municipal Utility</td>
<td>75%</td>
<td></td>
</tr>
</tbody>
</table>

---

Based on the community’s 2015 emissions generation
If comparing only the emissions reduction in the year 2050, the Xcel scenarios might appear to achieve most of what a municipalization approach accomplishes. However, as recent assessments have shown, an even more critical metric is the total amount of carbon that can be released before causing significantly more global warming and climatic destabilization. Staying within this “carbon budget” is critical and underscores the importance of accelerating near-term emissions reduction.

Figure 5 displays the cumulative emissions differences across the four scenarios through 2050. Under an accelerated municipal utility, the community would emit 67 percent less carbon than in the accelerated Xcel renewables scenario—a total of over 14 million metric tons less carbon. Compared to the Xcel midline, an accelerated municipal utility would avoid 29 million metric tons of carbon—the equivalent of eliminating 16 years\(^9\) of total community emissions.

\[ \text{Figure 5: Total Cumulative Emissions of the Four Scenarios} \]

**ANALYSIS – PARALLEL PATHS**

It is the city’s goal to provide Boulder’s customers with cleaner, reliable and competitively priced energy. The gap analysis above explains limitations that currently exist to meet city goals and why parallel paths are needed. The city is committed to the municipalization process, but there are a number of years and many steps before the city would have control over its electricity supply. For that reason, the city is actively pursuing and prioritizing parallel paths to keep all options open to meeting its goals. This section of the memo describes strategies that will continue regardless of the pursuit of

---

\(^9\) Based on the community’s 2015 emissions generation
municipalization, such as state-level actions and potential services that could be provided and/or expanded.

Some of the strategies outlined in this section fall in the category of policy reform, since without ownership and operation of a retail utility there would be limits to what the city has the authority to do. While the city cannot control the outcome of state-level policy reform, staff will continue to work through existing coalitions and partnerships to remove existing barriers and restrictions at the local level, along with policies that work to achieve climate and energy goals statewide.

Other strategies in this section are being explored as part of pilot project discussions, and evaluated in terms of legal, technical and financial barriers to implementation. That said, it is important to note that these enhanced local programs and services will not significantly address the gap described earlier, as these programs on their own, without regulatory reform, do not effectively change Boulder’s energy supply.

Table 5 lists the strategies that could move Boulder towards its goals and are expanded upon below and in accompanying attachments. Some of these strategies are on staff work plans for 2018 but many are not, staff requests council feedback on ones that should be prioritized.

Table 5: Potential Non-Municipalization Pathways Towards Boulder’s Energy Future Goals

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Legislative priorities</strong></td>
<td>State-level policy reform</td>
<td>On current work plan</td>
</tr>
<tr>
<td>2. <strong>Regulatory priorities</strong></td>
<td>Intervention at the Public Utilities Commission (PUC), the regulating body of Xcel</td>
<td>On current work plan</td>
</tr>
<tr>
<td>3. <strong>Regional Collaboration</strong></td>
<td>Work with local partners such as CU, Boulder County, and others, towards common goals</td>
<td>On current work plan, but understaffed</td>
</tr>
<tr>
<td>4. <strong>Partnership with Xcel Energy</strong></td>
<td>Explore partnerships opportunities with Xcel</td>
<td>Not on current work plan</td>
</tr>
<tr>
<td>5. <strong>Buy Renewable Energy Certificates (RECs)</strong></td>
<td>Analysis and recommendations on the role RECs play in meeting goals</td>
<td>On current work plan</td>
</tr>
<tr>
<td>6. <strong>Solar Subsidies</strong></td>
<td>Analysis and exploration of subsidies for solar energy</td>
<td>Very limited resources on work plan</td>
</tr>
<tr>
<td>7. <strong>Additional Strategies</strong></td>
<td>A list of other possible strategies to explore such as expansion of existing programs.</td>
<td>Either not on current work plan or understaffed</td>
</tr>
</tbody>
</table>
1. **Legislative priorities**

The city will continue to advocate for the development and implementation of statewide policies in support of the [Colorado Climate Plan](https://bouldercolorado.gov/policy-advisor/state-federal-legislative-matters) and 2017 [Executive Order](https://bouldercolorado.gov/policy-advisor/state-federal-legislative-matters) issued by Governor Hickenlooper. However, without the legislature adopting new policies that allow cities more local control of their energy resources, most communities have no control over the ability to achieve their goals unless they have their own utility. Boulder will continue to advocate for the adoption of policies that:

- Preserve and support the ability of local governments to engage in climate action efforts, support GHG reductions and support adoption and implementation of state climate goals
- Facilitate strategic electrification and thermal decarbonization of buildings
- Expand the development of climate change adaptation strategies
- Enhance customer energy choice
- Increase public access to energy data
- Support energy utility and regulatory enhancements
- Increase energy efficiency
- Encourage more widespread adoption of electric and efficient motorized vehicles including autonomous vehicles
- Support reform of residential Property Assessed Clean Energy (PACE) finance statutes
- Support creation of market mechanisms aimed at cutting carbon emissions
- Support improvements to the Colorado oil and gas conservation commission’s oversight of oil and gas drilling and preservation of local control to adopt regulations, moratoriums or other limits as necessary

Details of each of these broad categories have been included in the city’s draft Legislative Agenda. Council is scheduled to review the proposed 2018 Agenda on Nov. 21 and Dec. 5 of this year.

2. **Regulatory priorities: Lobby for changes at the Public Utilities Commission**

Since 2009, the city has intervened in Xcel proceedings before the PUC on issues affecting city operations as well as cases that influence the ability of the community to achieve its Climate Commitment goals. Examples of city advocacy at the PUC include participation in Xcel rate cases, electric resource plans, renewable energy standard compliance plans, demand-side management and energy efficiency plans, smart grid, data privacy, electric vehicle and other technical proceedings (see Attachment F, “Public Utilities Commission (PUC) Interventions and Activity,” for more detail).

---

10 https://bouldercolorado.gov/policy-advisor/state-federal-legislative-matters

11 For example, in a case focused on the Renewable Energy Standard, intervening parties such as cities, environmental advocates, solar developers, the consumer advocate and the staff of the PUC evaluate Xcel proposals and work with the company to establish targets for rooftop solar and design programs that meet the needs of customer groups that lack access to existing programs based on local experience.
Intervention at the PUC is a resource-intensive process which spreads limited resources of intervening parties thin. This has resulted in settlement agreements instead of litigation, which can be beneficial; however, it also means that it is important for the city to intervene to have a seat at the negotiating table. Regardless of any decision related to municipalization, the city will continue to intervene in dockets on behalf of the residents and businesses in Boulder.

Table 6 below describes current interventions at the PUC and the implications of the case to Boulder, more detail on these cases and the implications to the city can be found in Attachment F, “Public Utilities Commission (PUC) Interventions and Activity.”

<table>
<thead>
<tr>
<th>Current and Planned Interventions</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Resource Plan (ERP)</td>
<td>The ERP determines the amount and type of new generation Xcel will acquire to meet anticipated future load.</td>
</tr>
<tr>
<td>Demand-Side Management Strategic Issues (DSM)</td>
<td>This case focuses on the vision and goals of future DSM plans, including targets for energy efficiency and how these programs will be implemented.</td>
</tr>
<tr>
<td>2018-2021 Multi-Year Rate Plan (MYP)</td>
<td>The MYP proposes to increase rates at least 9.5 percent for residential and small commercial customers and 4.5 percent to 8 percent for large commercial and industrial customers. Changes in rates affect not only monthly bills but the economics of rooftop solar, energy efficiency and electric vehicle charging.</td>
</tr>
<tr>
<td>Rules governing Electric Resource Plan (ERP), Renewable Energy Standard (RES), and enabling technology</td>
<td>This is a repository proceeding to collect feedback from stakeholders concerning potential changes to PUC rules governing resource acquisition, including rooftop and community solar and other renewable energy projects that are essential to the city’s Climate Commitment goals.</td>
</tr>
<tr>
<td>Stakeholder Working Groups</td>
<td>These groups emerge from decisions in previous cases and are intended to resolve outstanding issues and to develop new programs based on PUC decisions.</td>
</tr>
</tbody>
</table>

3. Regional Collaboration
Either of the above strategies related to policy reform will require a sustained regional approach. While meeting the community’s Climate Commitment is vitally important for Boulder, a regional approach allows diverse communities to pool ideas and resources,
make faster progress towards mitigation and resilience goals and attract more state and federal help. Boulder’s regional efforts related to climate and sustainability strive to share expertise, leverage resources and advance comprehensive solutions to facilitate more coordinated, effective solutions while raising the profile of regional leadership.

Moving forward, staff will continue to prioritize strong collaboration opportunities with key governmental partners such as University of Colorado at Boulder, Boulder County and Boulder Valley School District. Staff will also focus on creating new opportunities with businesses and organizations. To support a statewide approach to climate action, Boulder will work closely with key organizations such as the Colorado Communities for Climate Action (CC4CA) and the Colorado Compact in 2018. More details on CC4CA the Colorado Compact, and other regional collaborations can be found in Attachment G, “Regional Collaborations.”

4. Partnership with Xcel
The city and Xcel have been involved in various partnership discussions since the franchise expired in 2010 in pursuit of an alternate path to municipalization. These conversations have not resulted in a successful partnership to date. Going forward, in addition to participating in Xcel’s standard offerings, a few known paths to partnership exist and staff will seek council feedback about which ones to pursue. They include:

- Entering a gas and electric franchise
- Exploring Xcel’s Partners in Energy program, services to develop and implement an energy plan. Details about this plan and a case study from Louisville are included in Attachment H, “Xcel Partner’s in Energy Program Summary.”
- Consider other strategic relationships or agreements such expanding programs, further exploration in new technologies, public/private partnerships to develop local generation (such as qualifying facilities) and behind-the-meter solutions.

A key finding is that “Partners in Energy” is a marketing tool for existing Xcel Energy demand-side management and energy efficiency programs. The program offers consulting services to design and implement an “Energy Action Plan” that is less

---

12 A qualifying facility is a class of energy generation facilities which receives special rate and regulatory treatment. Generating facilities in this group are known as qualifying facilities (QFs), and fall into two categories: qualifying small power production facilities and qualifying cogeneration facilities. QFs have two opportunities to interconnect to Xcel's system: (1) a QF smaller than 100 kW can interconnect under an established tariff or (2) a QF larger than 100 kW can interconnect if selected as part of a competitive resource acquisition, typically during the Electric Resource Plan competitive solicitation. In some states, it is possible for QF larger than 100 kW to interconnect outside of a competitive resource solicitation. If this were the case in Colorado, it may be easier for the city to build larger-scale renewable resources outside of existing Xcel programs.

13 Behind-the-meter refers to generation or technology that exists on site and is installed on the customer’s side of the meter, rather than the electric grid/utility side. The most common examples are rooftop solar and diesel generators. Behind-the-meter technology can reduce carbon emissions and provide critical back-up power during a grid outage, enhancing community resilience.
comprehensive than what has already been undertaken by Boulder staff and community members. It is intended for communities that have not taken the steps Boulder has and that do not have the staff resources or community commitment available in Boulder.

The city and Xcel are not currently engaged in partnership discussions, beyond negotiating agreements to comply with the PUC order, but the city remains open to these conversations should the opportunity arise.

5. Buy Renewable Energy Certificates (RECs)
Renewable Energy Certificates (REC) represent the environmental attributes associated with generation from wind, solar and other eligible energy resources as defined in the Renewable Energy Standard Act (RESA). A REC is not electricity, but rather an accounting mechanism designed to prove that electricity was generated from a renewable resource. In other words, ownership of RECs is required to claim environmental benefits on renewable energy. When 1,000 kWh are generated from a renewable source, this represents one “REC.” A REC must be “retired” on behalf of the purchasing party so that no other party can also claim that its power was produced from an individual renewable resource. The RESA requires Xcel to retire RECs equivalent to 30 percent of its annual sales by 2020 with specific carve-outs for rooftop and community solar.

RECs can be sold either bundled with electricity or independent of the purchase of electricity. Many companies, including Xcel, sell unbundled RECs to customers with environmental goals. These RECs may come from renewable resources in Colorado or elsewhere in the United States. State laws also permit companies to “bank” RECs that are not needed for compliance with the RESA for sale in future years. In other words, REC products available today may or may not be produced from new renewable resources that may or may not be in Colorado. As a result, City Council determined in 2007 that RECs could not be used to meet Boulder climate goals.

Additionally, the city could not afford to purchase enough RECs to offset the community’s electricity use. Xcel sells RECs they generate that are not needed for compliance with the RESA through the Windsource program. Windsource RECs cost 1.5 cents per kilowatt-hour, in addition to standard rates. In 2016, Boulder residents and businesses used approximately 1.3 billion kilowatt-hours. It would therefore cost Boulder an additional $20 million per year to buy Windsource RECs equal to 100 percent of annual consumption. More detail on the current environment for RECs in Boulder can

---

14 For instance, if a local business installs solar panels but sells the RECs to Xcel Energy via Solar Rewards to improve project economics, that business cannot claim the environmental benefits of the solar power. Solar Rewards is the incentive program by which Xcel buys RECs to comply with the Renewable Energy Standard. In order to retain the RECs, a customer with rooftop solar cannot participate in Solar Rewards (or sell RECs to any other buyer).

15 Windsource is priced based on the cost of renewables required for an Xcel customer to reach “100% renewables.” The amount of additional renewables (and price) includes the percentage of renewables already on the Xcel system for RESA compliance. It is therefore difficult to compare the cost to purchase
be found in Attachment I, “Current Environment for RECs in Boulder.” Staff is planning on returning to council in April for a larger discussion of RECs and the city policy for RECs for both city-owned facilities and for city GHG accounting.

6. Subsidize rooftop solar and/or community solar throughout the city
The city currently offers some solar subsidies both directly and indirectly. The solar grants program\(^{16}\) provides direct subsidies to non-profit organizations and affordable housing and the solar rebate program provides a sales tax rebate on solar systems. The city also worked with Boulder County to negotiate three solar (plus electric vehicle) group purchase discount programs in fall 2015, spring 2016 and fall 2016\(^ {17}\). Finally, EnergySmart, the award-winning joint program between the city and the county, has rebated the installation of 432 kW of solar PV in Boulder.

To make progress towards Climate Commitment goals for local generation and renewable electricity, community members have proposed that the city could offer additional subsidies for local and community solar projects. The subsidies could take several forms, including an upfront installation incentive, a production-based incentive or a contribution to make qualifying facilities economically competitive with Xcel tariffs. Table 7 below describes each of these options.

<table>
<thead>
<tr>
<th>Subsidy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Upfront Incentive</strong></td>
<td>Customers receive a lump sum payment to reduce the initial cost of the system.</td>
</tr>
<tr>
<td><strong>Production-based incentive</strong></td>
<td>Customers receive a payment based on the monthly generation of the system, like Xcel’s Solar Rewards program. This payment could be in addition to or in replacement of Solar Rewards.</td>
</tr>
<tr>
<td><strong>Contribution to qualifying facilities(^ {18})</strong></td>
<td>Upfront or ongoing payment to reduce the cost of a qualifying facility so that the project is economical relative to the payment received from Xcel’s small power production tariff.</td>
</tr>
</tbody>
</table>

\(^{16}\) In 2016 and 2017, a total of $144,781 funded 392 kW for non-profits and affordable housing

\(^{17}\) This program resulted in the installation of 339 kW of residential solar and 613 kW of commercial solar in the city (as well as the purchase of 198 electric vehicles).

\(^{18}\) The economics of qualifying facilities (generation smaller than 100 kW, connected directly to the distribution system) are more challenging to evaluate. The published tariff does not provide price certainty for the entire life of a project and the values for energy and capacity will change over time based on increases and decreases to Xcel’s power supply costs.
Staff completed a high-level analysis on the economics of the production-based incentive. If there is a desire to keep the RECs locally, the incentive would need to replace Solar Rewards and likely be a richer incentive although it is not clear what amount of incentive would be attractive enough to increase adoption. A local fund that could finance this type of incentive could support the city’s local renewable energy generation goal. It is important to note, even with substantial subsidies, other barriers such as limits to the amount of solar that can be installed per meter and the inability to share energy across property lines remain unsolved.

7. Additional strategies to consider
The following lists future strategies (dependent on revenue from the CAP Tax and staffing limitations) that the city would like to pursue towards achieving the climate and energy goals:

- Full implementation of the Energy Impact Offset Fund, which would support the development of local renewable energy projects
- Exploration and development of alternatives to the current Climate Action Plan tax
- Strengthening partnership efforts to focus specifically on accelerating joint projects with large energy consumers (CU Boulder, large industrial) that contribute approximately 25 percent of the community’s greenhouse gas (GHG) emissions;
- Developing and implementing the next phase of SmartRegs regulations;
- On-bill financing programs offered through customer’s water bills;
- Time-of-sale energy efficiency requirements for residential homes;
- Accelerating efforts to reduce GHG emissions with city owned facilities;
- Testing of innovative technologies such as “behind-the-meter” storage and generation;
- Full implementation of solar and electric vehicle strategies; and
- Accelerate electrification of existing natural gas uses in residential and commercial buildings

Many of these strategies are already active and will continue to be pursued in parallel to municipalization. The strategies listed above are by no means an exhaustive list, staff continually explores new ideas, seeks community input and adjusts approaches as needed.

NEXT STEPS

Municipalization
The city will implement the following next steps to provide information for a go-no/go decision in 2019 or 2020:
• Actions required to acquire the electric system assets including appraisals, negotiations and potential litigation.

• An application to Xcel, through its Federal Energy Regulatory Commission (FERC) regulated Open Access Transmission Tariff (OATT), to allow the city utility to connect to Xcel’s transmission network. This process is necessary to determine what portion of existing substations would be acquired or if new substations will need to be built to separate the city electrically from Xcel. The result of this process will be an input into the overall separation cost.

• A decision will be made regarding the source of power supply.

• City engineers would work with Xcel and a third-party engineer to perform the detailed design and specification work necessary to be able to solicit bids for the separation construction. This process is necessary to determine the total cost of separation.

• The Transition Work Plan will be updated to reflect the recent PUC decision and other information. The plan is designed to manage the risks of acquisition while prioritizing the fundamentals of an electric utility: safety, reliability and efficiency. Elements of the plan will be implemented as necessary prior to the go-no/go decision to position the city for the eventual start-up of the electric utility.

• In addition to providing timely project updates via the city’s various channels, communication staff will work to reintroduce the concept of the “utility of the future” to the community, emphasizing the possibilities including clean electricity, local generation, customer choice, energy services and partnership opportunities.

• Staff will re-engage citizen working groups to shape key elements of the utility including, rates, energy services, resource acquisition, governance, customer experience and reliability and safety.

• Return to council on Feb. 6, 2018 with information on how the adjustment to base will interface with ballot measures such as the utility occupation tax and the impact of the municipalization budget on general fund reserves.

• Return to council on April 10, 2018 with an update on municipalization work plan.

**Climate Commitment**

Staff plans to return to council for an April 10, 2018 Study Session. The study session will cover:

- Brief update/review of the energy related parts of the Climate Commitment
  - Present 2016 GHG Inventory results
  - Outline high level strategy to reach goals
- Renewable Energy Certifications (RECs) discussion: get feedback from council on the city’s policy/approach to ownership of RECs (for both city owned facilities and for the community wide GHG accounting)

A study session covering the other three areas of the Climate Commitment (Ecosystems, Resources and Equity/Just Transition) is being scheduled for Q4 of 2018.
ATTACHMENTS
Attachment A: Energy Future Goals Matrix
Attachment B: Municipalization Work Plan
Attachment C: Background
Attachment D: Climate-related Energy Goals
Attachment E: Climate-related Energy Programs, Initiatives and Pilot Projects
Attachment F: Public Utilities Commission (PUC) Interventions and Activity
Attachment G: Regional Collaborations
Attachment H: Xcel’s Partners in Energy Program Summary
Attachment I: Current Environment for RECs in Boulder
# Boulder Energy Future

## Technologies and Practices for Achieving Boulder's Energy Future Goals

### ATTACHMENT A


<table>
<thead>
<tr>
<th>Technology or Practice</th>
<th>Description</th>
<th>Energy Future Goals</th>
<th>Authority</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section 1: Grid Modernization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Deployment of local microgrids</td>
<td>Subsections of the grid which can operate independently for periods of time</td>
<td>Stable, safe, reliable energy supply</td>
<td>!</td>
<td>$</td>
</tr>
<tr>
<td>2 Enhanced reliability and resilience</td>
<td>Identification of critical loads within the city, and ability to direct investment in distribution system</td>
<td>Competitive rates (short / long term)</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>3 Aggressive undergrounding of electric lines for higher reliability/resilience</td>
<td>Ability to underground vital distribution system components.</td>
<td>Reduce carbon emissions, pollution</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>4 Enhanced voltage optimization</td>
<td>Fine-tuning the end-of-line voltage to improve efficiency for industrial customers</td>
<td>Greater customer say about energy supply</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>5 Wireless internet utilizing AMI</td>
<td>Using extra bandwidth or channels on smart meters to provide a public wifi network</td>
<td>Promote local economic vitality</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

### Section 2: Demand-Side Strategies

<table>
<thead>
<tr>
<th>Technology or Practice</th>
<th>Description</th>
<th>Energy Future Goals</th>
<th>Authority</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Demand-response technologies</td>
<td>Changes in customer use triggered by price or environmental triggers</td>
<td>Promote social and environmental justice</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>7 Development of programs and services to shed load</td>
<td>Modifying specific loads to reduce peak demand</td>
<td>Status quo</td>
<td>!</td>
<td>$</td>
</tr>
<tr>
<td>8 Energy savings performance contracts</td>
<td>Contractor's pay dependent on success in saving energy</td>
<td>Local Electric Utility</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>9 Zero Energy districts</td>
<td>A physical region with zero net energy consumption</td>
<td>May require additional city funding source</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>10 Customer access to In-home energy use tools and dashboards</td>
<td>Physical or virtual displays showing customer's real-time or aggregate energy use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Progressive energy conservation and efficiency programs</td>
<td>Programs promoting or incentivizing conservation and efficiency</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Section 3: Customer Choice

<table>
<thead>
<tr>
<th>Technology or Practice</th>
<th>Description</th>
<th>Energy Future Goals</th>
<th>Authority</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Community Choice Aggregation</td>
<td>Residents re-define. Not currently available in CO.</td>
<td></td>
<td>!</td>
<td>!</td>
</tr>
<tr>
<td>13 Customer information services and programs</td>
<td>Centrally sponsored energy literacy and education programs</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

### Section 4: Rate/Financing Structure

<table>
<thead>
<tr>
<th>Technology or Practice</th>
<th>Description</th>
<th>Energy Future Goals</th>
<th>Authority</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Innovative rate structures</td>
<td>Time-of-use, tiered, demand, budget billing, etc.</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>15 On bill financing</td>
<td>Financing for customer ownership of efficiency upgrades and distributed generation</td>
<td></td>
<td>!</td>
<td>$</td>
</tr>
</tbody>
</table>

*see References Section at bottom for notes and links to examples
### Section 5: Local Generation

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Net metering in excess of 120%</td>
<td>Customers are not limited in on-site energy production</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Feed-In-tariffs (FIT)</td>
<td>Mandated rates at which customers may sell power back to the grid</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Wheeling power from city-owned resources</td>
<td>Ability to use power from remotely owned generation such as hydro</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Pumped storage</td>
<td>Storing off peak, cheap energy in a pumped hydro reservoir system</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>In-line micro hydroelectric generation</td>
<td>In-line generation incorporated into existing water delivery system</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Utility-scale energy storage</td>
<td>Large scale storage utilized to add resilience and reduce peak loads</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Biogas/biomass generation facilities</td>
<td>Utilizing municipal or agricultural waste to produce energy</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Widespread deployment of electric vehicles and Vehicle-to-Grid technology</td>
<td>Charging and discharging electric vehicles for energy storage and grid stability</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Ownership options in utility-scale renewable power projects</td>
<td>Fully owning or purchasing portions of large wind or solar power installations and sell into the Xcel system</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Customized rebates and incentives based on local needs</td>
<td>City incentivizing local DSM and generation options</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Expand solar gardens beyond existing restrictions</td>
<td>Enhanced access to solar gardens beyond existing limits</td>
<td></td>
</tr>
</tbody>
</table>

### Section 6: Utility Business Model

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>Sustainability performance metrics</td>
<td>Mechanism for measuring progress toward goals and standardizing verified results</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Renewable Energy Credits (RECs)</td>
<td>Buying and selling renewable credits to meet portfolio standards</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Distribution Resource Planning</td>
<td>Identify optimal locations for the deployment of distributed resources</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Utility model that prioritizes energy use reductions</td>
<td>An entity charged with meeting efficiency or sustainability goals rather than making profit</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Use funding for pilot programs</td>
<td>Federal funding available for some types of energy projects</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Comparative Bills / Peer Ranking</td>
<td>Showing customers where their energy consumption ranks against their peers</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Consideration of full life-cycle costs</td>
<td>Adopting a long-term view of life-cycle costs and benefits</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>Research Partnerships</td>
<td>Leveraging local and/or national research labs to explore innovative practices</td>
<td></td>
</tr>
</tbody>
</table>

### REFERENCES

<table>
<thead>
<tr>
<th>Activity</th>
<th>2017 Quarter</th>
<th>2018 Quarter</th>
<th>2019 Quarter</th>
<th>2020 Quarter</th>
<th>2021 Quarter</th>
<th>2022 Quarter</th>
<th>2023 Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUC Decision</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90-day filing at the PUC of agreements with Xcel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condemnation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepare Appraisal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Council Authorization/Negotiation/Filing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finish Prelim Issues/Start Discovery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hearing and Appeals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separation Engineering and Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSco OATT Load Interconnection Process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Separation Design and Bidding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bid Award and Contract Negotiation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separation Construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply RFP and Contract</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Go - No/Go Decision &amp; Community Vote</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separation Construction and Pre Cut-over Cost Financing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisition and Start-up Financing, Refinancing of Pre Cut-over Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transition Planning and Implementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut-over and Start-up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Background

The Boulder community has a long history of participation in both recognizing and taking action in response to climate change. Boulder is home to thousands of climate scientists, many among the most globally prominent in their field. Boulder’s first formal city climate action initiatives took place in 2002 with the passage of Resolution 906. This resolution committed the city to achieving the emissions reduction goals set under the international Kyoto protocol of 1997. This international agreement—which the US chose not to sign—set a 7 percent emissions reduction goal by 2012.

In 2013, the city initiated work to update its climate action plan and establish a new goal aligned with more recent global climate change science, particularly the UN established International Panel on Climate Change. This science\(^1\), cross validated by many other studies, indicate that emissions reductions of 80 percent or more will be necessary by 2050 or sooner to reduce the probability that the earth will experience run-away global warming and its devastating potential consequences.

This is also the science upon which the 2016 Paris Climate Accord was developed. This international agreement was signed by 197 nations, the largest gathering of nations in history. The Paris agreement provides a roadmap for coordinated global action. For the U.S., it established a national framework within which both state and municipality emissions reduction efforts could be aligned and coordinated. With the Trump administration’s decision to withdraw the U.S. from this agreement, cities including Boulder have once again demonstrated leadership by pledging to uphold this agreement in spite of the Trump administration’s position. There are currently over 382 cities that have signed the Climate Mayor’s statement committing to emissions reduction efforts aligned with the Paris Agreement.

Accelerating Climate Change Shapes Evolving Action Strategy

Recent assessments of global climate change indicators clearly demonstrate that climate change is now both underway and may be accelerating.\(^2\) Scientists based in Boulder were among the first to begin publishing clear evidence of these phenomena. The community has also been directly impacted by the emerging impacts of climate change. Fires in the early part of this decade were followed by a historic flood. Local landscapes have also shown increasing signs of changes as increasing temperatures and more extreme weather conditions make it difficult for some species to continue to flourish in this environment. A preliminary analysis by OSMP staff of plant species viability under projected future climate conditions indicate that up to a third of local species may not find habitable conditions in this area by mid-century.

This growing recognition that human-augmented climate change is already underway compels a review of climate action strategies. Previously, the emphasis has been on global greenhouse gas emissions reduction. Next stage climate strategies will need to more actively consider how strategies also contribute to local capacity to respond and adapt to increasing climate change impacts. Discussions about this evolution of climate action strategies are a prominent topic among leading cities around the world. The keynote address at the 190-city Urban Sustainability

\(^1\) Recent studies
\(^2\) IPCC 2015 Assessment
Director’s Network (USDN) recent annual meeting featured Paul Hawken describing the new emissions “Drawdown” analysis. A central theme in the 100 high impact strategies Hawken’s team analyzed was the critical importance of integrating emissions reduction strategies with community development and resilience priorities.

Previously, the emphasis in the city’s climate work has been on global greenhouse gas emissions reduction. While this remains critical, the city’s long-term climate strategies will need to consider how to build local capacity to respond and adapt to increasing climate change impacts. This will happen in close collaboration with the city’s resilience work, ecosystems planning, and Open Space and Mountain Parks master planning efforts.
## Climate-related Energy Goals

<table>
<thead>
<tr>
<th>Metric</th>
<th>Metric</th>
<th>2015</th>
<th>2020</th>
<th>2030</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions</td>
<td>% GHG reduction</td>
<td>5%</td>
<td>15%</td>
<td>50%</td>
<td>80%</td>
</tr>
<tr>
<td><strong>Electricity Source</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of grid electricity that is renewable</td>
<td>% of electricity</td>
<td>22%</td>
<td>40%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Total local renewable energy</td>
<td>MW installed</td>
<td>30</td>
<td>50</td>
<td>100</td>
<td>175</td>
</tr>
<tr>
<td><strong>Buildings</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduction in Total Building Emissions</td>
<td>% below 2005</td>
<td>2%</td>
<td>25%</td>
<td>30%</td>
<td>75%</td>
</tr>
<tr>
<td>Reduction in Residential Electricity&lt;sup&gt;3&lt;/sup&gt;</td>
<td>% below 2005</td>
<td>1%</td>
<td>1%</td>
<td>3%</td>
<td>-2%</td>
</tr>
<tr>
<td>Reduction in Residential Natural Gas</td>
<td>% below 2005</td>
<td>1%</td>
<td>15%</td>
<td>40%</td>
<td>85%</td>
</tr>
<tr>
<td>Reduction in Commercial and Industrial (C&amp;I) Electricity&lt;sup&gt;4&lt;/sup&gt;</td>
<td>% below 2005</td>
<td>-16%</td>
<td>-20%</td>
<td>-6%</td>
<td>6%</td>
</tr>
<tr>
<td>Reduction in C&amp;I Natural Gas&lt;sup&gt;5&lt;/sup&gt;</td>
<td>% below 2005</td>
<td>5%</td>
<td>6%</td>
<td>15%</td>
<td>35%</td>
</tr>
<tr>
<td>Commercial Energy Use Intensity&lt;sup&gt;6&lt;/sup&gt;</td>
<td>kBtu/sqft/yr</td>
<td>113</td>
<td>105</td>
<td>85</td>
<td>60</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Miles Traveled (VMT)</td>
<td>Millions of miles</td>
<td>2.65</td>
<td>2.32</td>
<td>1.95</td>
<td>1.59</td>
</tr>
<tr>
<td>Walk/Bike/transit/rideshare</td>
<td>% of trips</td>
<td>64%</td>
<td>69%</td>
<td>80%</td>
<td>92%</td>
</tr>
<tr>
<td>Vehicle energy efficiency</td>
<td>MPGe</td>
<td>22</td>
<td>40</td>
<td>61</td>
<td>88</td>
</tr>
<tr>
<td>% Complete neighborhoods</td>
<td>% of census blocks</td>
<td>26%</td>
<td>N/A</td>
<td>80%</td>
<td>N/A</td>
</tr>
<tr>
<td>Electric &amp; alternative fuel vehicles</td>
<td>% light duty fleet</td>
<td>1%</td>
<td>15%</td>
<td>45%</td>
<td>75%</td>
</tr>
</tbody>
</table>

---

1. Below a 2005 baseline
2. The building energy and emissions values are total amounts, not per capita or per economic output. Both population and economic output have increased since 2005.
3. Increase in electricity use is expected due to increased electric vehicle adoption and the transition from natural gas to electricity (which occurs primarily in later years).
4. From 2005 to 2015, there has been a significant increase in electricity in the C&I sector. This is at least partially due to the addition of a number of high energy intensity buildings, such as marijuana grow facilities and data centers. Increase in electricity use is expected due to increased electric vehicle adoption and the transition from natural gas to electricity (which occurs primarily in later years).
5. Natural gas variation is likely due to industrial processes that vary greatly from year to year. Further, natural gas savings will not be fully realized until 2030 when the Building Performance Ordinance requirements are implemented.
6. Applies only to buildings covered by the city’s Building Performance Ordinance.
Climate-Related Energy Programs, Initiatives, and Pilot Projects

In 2018, staff will continue to implement and improve the following core climate and energy programs:

1. **Building Performance Ordinance**: Requirements for all large (> 20,000 ft²) commercial and industrial buildings to rate and report their energy usage and performance cost effective efficiency actions over time.
   a. These rating and reporting and energy efficiency requirements move beyond current voluntary programs to require actions that reduce energy use and improve the quality of Boulder’s commercial and industrial building stock.
   b. Staff will work to continue to achieve 100% compliance as more buildings are phased into the requirements, and as the efficiency deadlines approach.
   c. Commercial and industrial buildings are responsible for 51 percent of Boulder’s total greenhouse gas (GHG) emissions. Buildings that rate their energy performance typically attain an average energy savings of two to three percent per year. The estimated total GHG reduction anticipated as a result of these requirements is equivalent to taking more than 21,000 cars off the road every year. The estimated annual net benefit to the local economy is $8.5 to $14 million.

2. **Energy and Building Codes**: Energy and sustainability requirements for new construction and renovations of existing buildings. The city of Boulder has some of the most progressive and efficient energy codes in the nation, and is working towards a goal of net zero energy codes for all buildings by the year 2031. In the most recent energy code update, the city added new requirements for electric vehicle charging infrastructure and for new buildings to designed to support the installation of solar PV. Current efforts are focused on the implementation and continued training for staff and the building community on current codes, and in 2018 staff will begin development of next update (2020). Future updates will consider the following:
   a. Piloting outcome based codes;
   b. Increasing the stringency of prescriptive codes;
   c. Phase in other non-energy sustainability requirements, based off of the International Green Conservation Code (IgCC);
   d. Encourage the electrification of buildings; and
   e. Address refrigerant leakage.

3. **EnergySmart and Partners for a Clean Environment (PACE)**: In partnership with Boulder County, these programs provide rebates and one-on-one advising services to homes and businesses in the areas of energy, water, waste and transportation. An expert Energy Advisor is assigned to a home or business owner to answer questions, help prioritize projects, connect them with qualified contractors, find and apply for incentives and low-cost financing, and make energy upgrades easier and more affordable. Since the program’s inception:
a. over 2,700 businesses have participated and avoided over 11,000 metric tons of CO₂ (equivalent to taking ~2,400 cars off the road), and
b. over 9,700 homes have participated and avoided over 7,000 metric tons of CO₂ (equivalent to taking ~1,700 cars off the road).

4. **Marijuana Energy Requirements:** Continued tracking and enforcement of the requirements for marijuana business to offset 100% of their electricity consumption with renewable energy. Staff will also explore the possibility of updating the ordinance language to reflect long term goals for the program, and partner with Boulder County to educate licensees about energy saving opportunities for their facilities.

5. **SmartRegs:** Requirements for energy efficiency (equivalent to the 2000 International Energy Conservation Code) in rental housing units, which account for over half of the housing stock, within the city of Boulder. Passed in 2010, landlords were given two rental license cycles (8 years) to comply. Currently, 80% of units are in compliance and all units must be in compliance by December 31, 2018. In the final year of implementation, staff will work towards 100% compliance through outreach, education, and enforcement.

6. **Universal Zero Waste Ordinance:** The Universal Zero Waste regulations apply to all property owners and businesses within the City of Boulder. Originally passed in June 2015, these requirements went into effect in June of 2016, and enforcement began mid-2017. To date, over 95 percent of businesses that receive a “warning” letter, come into compliance within 30 days. Zero waste advisors on city staff and through the PACE program help businesses move beyond the “bins and signs” requirements to minimize contamination and maximize waste diversion. In 2017, over 500 businesses took advantage of the city’s zero waste advising services. As part of the citywide enterprise management system (EnerGov) 2018 phased work plan, staff will be developing a property owner and business self-reporting form to allow citywide compliance tracking of the Universal Zero Waste requirements. Staff will also be managing a community-based planning processes associated with future development at 6400 Arapahoe to create a reuse-focused innovation center.

7. **Community Engagement:** Build community partnerships and continue community engagement efforts. Staff will continue 2017 work to engage with Boulder’s faith communities and support climate action both at the congregations and with their members. Martin Acres will be a focus for neighborhood climate engagement, as part of the National Renewable Energy Laboratory project to explore accelerated transition to renewable energy. Staff will also continue to build community around climate through the **Boulder.Earth**, a Boulder-focused website with a sustainability calendar, directory of organizations, immediate ways to take action and capabilities to build connections between groups and people both online and off. The city will continue to help shape the site and be an engagement partner, including sitting on the site stewardship council and helping plan in-person events.
In 2018, staff plans to continue to work on the following key energy pilot projects:

1. **Resilient Energy Infrastructure Pilot Project:** The city began its energy resilience planning initiative supported by a Department of Energy (DOE) Resilient Electricity Delivery Infrastructure grant in October of 2015. The purpose of this grant program is to support cities in developing projects that increase facility and community resilience through infrastructure.

   Specific project sites were selected at Boulder Housing Partners (BHP) and Via Mobility Services, both of which are now installing systems that combine solar with battery storage and backup generation to create energy systems that can both reduce overall emissions and provide backup power to critical site functions during a grid outage. Funding is also going to CU Boulder to help conduct a renewable energy deployment optimization study in partnership with NREL. A final project supports a collaborative effort between the city, NREL and a local energy analytics firm to conduct one of the first-ever assessments of residential neighborhood scale renewable energy systems design and integration.

2. **Natural Gas Replacement Project:** The city received funding through the Carbon Neutral Cities Alliance (CNCA) to develop a strategy that would support the conversion of residential natural gas-based appliances to renewable-ready electric appliances. Building on work the city funded through the Boulder Energy Challenge in 2014, the city has now completed a first set of tools and pilots that will be integrated into the Energy Smart Program in 2018. This will include ways of identifying residences that are likely to need both furnace and water heater replacements as well as the capacity to model the financial and environmental value of these conversions.

   The city also took a lead role in convening a group of over 15 cities along with representatives of the major heat pump furnace and water heaters at a meeting in San Diego in late October. This meeting builds on a similar but smaller session held in New York City in 2016 that resulted in Boulder and three other cities being awarded over $500,000 in grant support to lead development of a market transformation strategy. This four-city consortium is now working on next stage funding for expanding these efforts.

3. **Boulder Energy Challenge (BEC):** BEC was launched in June 2014 to support the development and commercialization of innovative emission-reducing technologies and strategies in Boulder. In that initial launch, the Challenge funded all six finalist projects, totaling $337,500. The program was relaunched in 2017, and the Challenge funded four projects with $157,600 in total funding. The projects funded in 2017 include:

   - EVmatch - Community EV Charging Network
   - Rocky Mountain Institute – Unlocking Leasing Solutions for Net Zero Energy
   - C3 Boulder & Impact Hub Academy – Boulder.Earth Community Portal
   - Just Transition Collaborative - Toward an Equitable Energy Transition for the City of Boulder

Moving forward, staff is exploring external public and private partnerships to keep this program running since the CAP Tax budget can no longer support the BEC. Staff is
organizing a group of Colorado cities to solicit proposals from outside entities that could run a regional program for multiple cities, and raise funds from the private sector.

4. **Energy Impact Offset Fund (EIOF):** To provide a local offset fund for the Marijuana (MJ) Energy Offset Requirement, the city created a local Energy Impact Offset Fund in partnership with Boulder County in 2017. Currently, MJ licensees can pay into this fund to satisfy the requirement. In the future, the fund may be expanded to other uses such as compliance with other energy ordinances, or voluntary carbon offsets. Starting in 2018, the city will collect about $500,000/year for local renewable energy projects, which was previously going to Xcel (in the form of Windsour subscriptions). In 2018, staff will explore the following key issues for future development of this fund:

- For the MJ requirements, moving from a $/kWh price to a $/metric ton of carbon price (based on EPA’s social cost of carbon, which increases each year out to 2050).
- Consider using the funds to develop more community solar in Boulder, by partnering with a solar developer and subsiding the high cost of land in Boulder County - and then allocating shares of that solar specifically to the MJ industry and low to middle income residents.

5. **Solar Work:** The city is developing a comprehensive solar strategy to provide a roadmap to meet the local Climate Commitment’s renewable energy generation goals. Consultants are expected to complete the strategy by the end of 2017 which will allow the city to launch into implementation in 2018. A community solar working group of local stakeholders and experts is vetting the strategy and providing input through the development process. The strategy will:

- Use existing city tools and information to understand citywide demand needs and solar generation potential
- Align and integrate with multiple existing city energy plans, goals and objectives
- Assess energy storage needs and solutions, based on estimated distribution system impacts
- Recommend innovative methods for procuring and/or supporting solar across all end users
- Evaluate strategies using city and community values
- Develop a roadmap for implementation with annual targets and metrics
- Develop recommendations independent of, and based on, municipalization proceedings

6. **Electric Vehicle (EV) Work:** The city is conducting both near- and long-term electric vehicle work related to the development of charging infrastructure, policy and code. In the near-term the city has received and continues to seek funding for EV charging stations. The city received $100,000 in funding from the Regional Air Quality Council in 2017 for charging stations and is working to secure funds from the Volkswagen settlement funds through both the Electrify America and the Colorado Department of Health and the Environment allocations. Boulder also filed comments with the Environmental Protection Agency opposing reconsideration of the light-duty vehicle greenhouse gas emissions standards. This standard requires corporate average fuel economy to reach 54.5 MPG by 2025 and is considered an important driver in the electrification of passenger vehicles.
For long-term planning purposes, the city is developing an electric vehicle strategy to identify opportunities to accelerate electric vehicle adoption in line with mobility emissions reduction targets in the Climate Commitment. The strategy will:

- Examine charging infrastructure requirements for resident drivers both with and without access to home charging as well as the needs of in-commuters, visitors and transportation network companies such as Lyft, zTrip, Uber and traditional taxis
- Evaluate opportunities to electrify the city organization fleet as well as public transit
- Recommend incentive mechanisms for EV adoption and charging station installation
- Identify code upgrades necessary to support home, workplace and public EV charging
- Identify legislative and regulatory changes critical to EV adoption and charging installation
## Public Utilities Commission (PUC) Interventions and Activity

### Further Details on Current and Planned Interventions

<table>
<thead>
<tr>
<th>Current and Planned Interventions</th>
<th>Implications</th>
<th>City Action</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electric Resource Plan (ERP)</strong></td>
<td>The ERP determines the amount and type of new generation Xcel will acquire to meet anticipated future load.</td>
<td>The city filed a Statement of Position that included a request to consider Boulder's municipalization as a factor affecting Xcel's future demand growth and power supply needs. The city also argued to include the social cost of carbon as a sensitivity when evaluating new resources as well as other related topics. The city also filed comments on topics appropriate for supplemental testimony related to the Colorado Energy Plan.</td>
<td>The PUC directed Xcel to develop resource plans assuming both 0 MW and 454 MW of new generation need. In August of 2017, Xcel sought to re-open phase 1 to allow the consideration of a third scenario which would retire 2 of the 3 coal units at Comanche, to be replaced by new natural gas, wind, and solar (known as the &quot;Colorado Energy Plan&quot;). The request to consider the Colorado Energy Plan alongside the approved scenarios is currently pending before the PUC.</td>
</tr>
<tr>
<td><strong>Demand-Side Management Strategic Issues (DSM)</strong></td>
<td>This case focuses on the vision and goals of future DSM plans, including goals for energy efficiency and how these programs will be implemented.</td>
<td>This case was filed July 3, 2017. The city intervened on August 2, 2017. The intervention focuses on the effect of DSM incentives on the ability to comply with local energy codes, the equitability of using geo-targeting to apply DSM measures and incentives and the relationship between the shift in focus toward load shifting and time- and demand-based rate design for residential customers.</td>
<td>Answer testimony from intervening parties is due December 5, 2017. The city is currently evaluating the proposal and developing answer testimony.</td>
</tr>
<tr>
<td>Current and Planned Interventions</td>
<td>Implications</td>
<td>City Action</td>
<td>Current Status</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------</td>
<td>-------------</td>
<td>----------------</td>
</tr>
<tr>
<td><strong>2018-2021 Multi-Year Rate Plan (MYP)</strong></td>
<td>The MYP proposes to increase rates more than 9% for residential and small commercial customers and 4-8% for large commercial and industrial customers. Changes in rates affects not only monthly bills but the economics of rooftop solar, energy efficiency and electric vehicle charging.</td>
<td>The city plans to intervene in this case by November 20, 2017.</td>
<td>Xcel filed its multi-year rate increase proposal on October 3, 2017. Interested parties have until November 20, 2017 to file petitions to intervene. These petitions will be discussed by the PUC at the November 29, 2017 weekly meeting.</td>
</tr>
<tr>
<td><strong>Rules governing ERP, RES and enabling technology</strong></td>
<td>These rules play an important role not only in how Xcel may acquire new generation, including renewables, but also the ability of the city and community members to interconnect local solar and battery storage projects and to be compensated for the value provided to the grid.</td>
<td>The city must file comments by January 31, 2018.</td>
<td></td>
</tr>
<tr>
<td><strong>Stakeholder Working Groups</strong></td>
<td>These groups emerged from decisions in previous cases and are intended to resolve outstanding issues and to develop new programs based on PUC decisions.</td>
<td>The city is currently participating in working groups focused on new residential time-of-use and demand charges rates as well as the design of new voluntary renewable energy programs.</td>
<td></td>
</tr>
</tbody>
</table>
Recent Boulder intervention activity at the PUC

1. 2009 Rate Case; Proceeding No. 09AL-299E
2. 2011 RES Compliance Plan, Proceeding No. 11A-418E
3. 2011 Electric Resource Plan, Proceeding No. 11A-0869E
4. 2012-2013 Demand-Side Management Plan, Proceeding No. 11A-631EG
5. 2012 PSCo Verified Application and Petition for Rule Waiver; Proceeding No. 12A-155E
6. 2012 PSCo Advice Letter 1605; Proceeding No. 12AL-250E
8. 2012 Proposed Amendments to Rules of Practice and Procedure; Proceeding No. 12R-500ALL
9. 2012 Boulder / BNSF / Pearl Parkway Roadway and Signal Changes; Proceeding No. 12A-730R
10. 2013 Declaratory Order Concerning Rights of PSCo in Boulder County; Proceeding No. 13D-0498E
11. 2013 Demand-Side Management Strategic Issues, Proceeding 13A-0686EG
12. 2014 Demand-Side Management Plan, Proceeding No. 13A-0773EG
13. 2014 RES Compliance Plan; Proceeding No. 13A-0836E
14. 2013 Possible Revisions and Additions to Electric and Gas Rules; Proceeding No. 13M-1052EG
15. 2014 Boulder Docket on Customer Solar and Demand-Side Management; Proceeding 14A-0102E
16. 2014 Renewable Distributed Generation and Net Metering; Proceeding No. 14M-0235E
17. 2014 Solar Connect Program; Proceeding Nos. 14A-0301E and 14A-0302E
18. 2014 Data Access and Privacy Rules for Electric & Gas Utilities, Proceeding No. 14R-0394EG
19. 2014 Rate Case; Proceeding No. 14AL-0660E
20. 2015-2016 Demand-Side Management Plan, Proceeding No. 14A-1057EG
21. 2015 Boulder / BNSF Wonderland Creek Pedestrian/Bike; Proceeding No. 15A-0114R
22. 2015 City of Boulder Transfer of Assets; Proceeding No. 15A-0589E
23. 2016 Rate Case, Phase 2, Proceeding No. 16AL-0048
24. 2016 Renewable Connect, Proceeding 16A-0055E
25. 2016 Eligible Energy Resources; Proceeding No. 16A-0117E
26. 2016 RES Compliance Plan, Proceeding 16A-0139E
28. 2016 Revenue Decoupling Adjustment, Proceeding 16A-0546E.
29. 2016 Advanced Grid Intelligence and Security, Proceeding #16A-0588E
30. 2017 Demand-Side Management Strategic Issues, Proceeding #17A-0642EG
Regional, National and International Collaborations

**Legislative and Regulatory Collaborations**

1. **Electric Resource Plan**—On Aug. 29, 2017 Xcel Energy filed a stipulation as part of the ongoing Electric Resource Plan (ERP-16A-0396E) asking the Colorado Public Utilities Commission (CPUC) to approve a process that could lead to $2.5 billion in clean energy investments in rural Colorado, if there is no additional cost to the company’s electricity customers. To accommodate cleaner energy generating resources for the state, the proposal also calls for the consideration of the early retirement of two coal generation units in southern Colorado. Boulder supported the stipulation, and filed comments in the proceeding focusing on issues related to ownership of replacement generation, impact on the reduction of the funds available for distributed generation and cost recovery mechanisms. The city will continue to be active in the proceeding into 2018.

2. **EPA Clean Power Plan**—In partnership with 17 US states and four cities, Boulder intervened in the DC District Court case. The coalition, led by the New York Attorney General’s office, was formed to defend the Clean Power Plan against motions to stay the rule. Boulder submitted a Declaration from the mayor which was submitted as testimony in the case. The city sent an official request to the EPA to hold a public hearing in Boulder to discuss the repeal of the Clean Power Plan. Boulder continues to be an active party in the case during 2017.

3. **Colorado Communities for Climate Action (CC4CA)** —A year-old coalition of local governments that advocates for state and federal policies to protect Colorado’s climate for current and future generations. The state and federal actions CC4CA seeks are needed to complement the strong local climate actions coalition members already have underway, which include ambitious goals to reduce local heat-trapping emissions and strong local policies to meet those goals. But local governments simply cannot meet their climate goals on their own—they also need a better framework of state and federal climate policies to enable their local actions to be more effective. That reality led to the creation of CC4CA, in which local governments have joined forces to work for state and federal actions supporting and complementing local climate-protection actions. CC4CA membership includes Boulder County, City of Fort Collins, City of Westminster, City of Boulder, Eagle County, Summit County, City of Lafayette, City of Golden, Pitkin County, San Miguel County, City of Aspen, Town of Vail, Town of Telluride, Town of Basalt and Town of Mountain Village.

**Regional Technical and Working Group Collaborations**

1. **Compact of Colorado Communities**—Established to bring cities and counties to stand together in taking constructive and practical climate action. The Compact will dynamically advance and expand upon city and county efforts to address climate change, resilience to extreme events and grow a clean energy economy throughout Colorado. The Compact is in the process of developing its membership resources, and Boulder will continue to participate through a series of trainings and future activities.
2. **Colorado Climate Networking Steering Committee**—The Colorado Climate Network (CCN) and the [Colorado Municipal League](http://www.coclimatenetwork.org/resilience2.htm) have continued to convene a statewide Local Resilience Project and the Northern Front Range Resiliency Project to help improve the resilience of Colorado local governments and local resources to possible climate change impacts. The report of the Colorado Local Resilience Project, is available at: [www.coclimatenetwork.org/resilience2.htm](http://www.coclimatenetwork.org/resilience2.htm). A second phase of the program that is now ongoing focuses on implementation of the recommendations in the report. Additionally, the CCN will perform the administrative functions for the Colorado Communities for Climate Action Coalition mentioned above.

3. **Local Government Working Group on Public Utilities Commission Issues**—Developed strawman community energy report and participated in meetings with Xcel Energy technical staff to refine list of energy consumption and programmatic metrics that will be provided to local governments for climate and energy planning.

4. **Boulder Sustainability Alliance**—Representatives from CU Boulder, BVSD, Boulder County and the city have continued to meet to discuss sustainability related issues; particularly issues associated with energy.

5. **Boulder, Boulder County & City/County of Denver Collaboration**—Staff from the four agencies met quarterly to discuss ongoing issues related to energy and climate, waste reduction and transportation alternatives.

6. **Renewable Diesel**—Convened group of regional sustainability directors and fleet managers to evaluate the potential to integrate renewable diesel into fleet operations and submitted grant application to RAQC to fund feasibility analysis of renewable diesel pilot in the Front Range.

7. **Regional Air Quality Council (RAQC)**—This year, the city received approximately $100,000 to install new electric vehicle charging stations.

**National/ International Technical and Working Group Collaborations**

1. **iUrban Smart City Advisory Group**—Participated in three collaborative webinars with international advisory group members.

2. **Beyond Benchmarking Multi-City Working Group**—National working group for knowledge sharing with cities implementing efficiency requirements as part of benchmarking. Provides Boulder with the ability to provide feedback on industry standards.

3. **Circular Cities Network**—Started by the Ellen Macarthur Foundation, Boulder is part of a new knowledge sharing group that includes Austin, Boulder, Copenhagen, London, Ljubljana, New York, Petersborough, Phoenix and Rio de Janeiro. Staff participates in regular webinars with network members.

4. **Carbon Neutral Cities Alliance**—CNCA is a network of 20 international cities who have all made a commitment to 80% emissions reduction or greater by 2050 or sooner. The city has been an active participant and secured many of the first grants issued by CNCA for innovative pilot projects designed to significantly reduce emissions. The city will be hosting the 2018 annual meeting in Boulder, CO. Two active projects for 2017 include:
• Thermal decarbonization: Boulder is leading an effort with multiple cities and external partners to develop strategies to transition off natural gas in the residential and municipal building infrastructures.
• Zero Net Carbon Buildings: Boulder is part of an effort with 9 other cities and many external partners to develop city specific pathways to net zero energy codes and buildings by the year 2030.

5. **Urban Sustainability Directors Network**—City staff are taking part in several different USDN related working groups including accelerated net-zero building codes; emissions reduction projection tool development; ecodistrict planning, carbon tax strategies and other emerging topics. In December 2016, the city received a USDN Innovation fund grant to work with three other cities—New York City, Washington DC, and Burlington, VT to develop a coordinated program to foster retirement of natural gas appliances with renewable ready heat pumps.

6. **DOE “Better Communities” Alliance**—The city was invited by DOE to participate in a new initiative within DOE to work directly with cities to identify opportunities to link city initiatives around energy and transportation with DOE funding and research support. Boulder was invited to a meeting in Washington DC in early January of 2017 along with other leading US cities to help DOE develop its 2018-2019 program priorities.
Xcel Energy “Partners in Energy”  
https://www.xcelenergy.com/working_with_us/municipalities/partners_in_energy

This document summarizes the Xcel Energy “Partners in Energy” program, provides an example of the implementation of the program in Louisville and lists key questions for Xcel if there is interest in pursuing this program. The key takeaway is that “Partners in Energy” is a marketing tool for existing Xcel Energy demand-side management and energy efficiency programs. The program offers consulting services to design and implement an “Energy Action Plan” that is not as comprehensive as what has already been undertaken by Boulder staff and community members. It is primarily intended for communities that have not taken the steps Boulder has already taken and that do not have the staff resources or community commitment available in Boulder.

Summary

- City and Xcel staff as well as community members participate in development of an “Energy Action Plan” (EAP)  
  - The EAP establishes energy objectives and strategies designed to achieve community goals  
- Xcel Objective: “engage with the communities we serve by providing them with tools and resources to develop and carry out their energy action plan”
- Cost: No cost to participate.
- Commitment: 24 months  
  - 6-month planning, 18-month implementation

Key Features

- “Partners in Energy” helps communities that have done little or no energy planning develop goals and design a plan to achieve the goals  
  - The program promotes participation in existing Xcel energy efficiency and demand-side management programs and offers Xcel resources that are also available to non-“Partners in Energy” communities (e.g. seminars and training for trade groups, public education fairs, website information)  
  - The program offers Xcel assistance in providing services the city already does (e.g. energy benchmarking, GHG goals and tracking).
- The program does not offer Xcel funding. Xcel staff may be available to help identify external funding sources for neighborhood-level (“micro-grant) and capital-intensive projects (“grant”), an area in which the city has extensive experience.
- The program focuses on data sharing and analysis, via the Community Energy Report (already available to all Colorado communities served by Xcel regardless of participation in Partners in Energy) as well as quarterly updates on some programs (an improvement on the annual Community Energy Report). Boulder has had significant challenges in validating the data provided by Xcel through the Community Energy Report.
- Program materials on the Xcel website as well as a review of the City of Louisville Energy Action Plan do not suggest that this program would contribute to Boulder’s current climate action work.
There is also little indication of a focus on development of new products. Instead, a key goal (described in program materials as “Early Wins!”) is education and awareness of existing Xcel Energy programs.

- It is notable that participation in Partners in Energy was not discussed during the spring 2017 settlement negotiation.
- The images below describe Xcel’s motivation for creating Partners in Energy as well as how the program can be used to engage with local government (as presented to ACEEE).

**Louisville, CO experience**

Website: [http://www.louisvilleco.gov/residents/partners-in-energy-program](http://www.louisvilleco.gov/residents/partners-in-energy-program)


- Xcel staff: product manager, area manager, account manager, program facilitators (Brendle Group consultants)
- Priority strategies: grow green business recognition program, large commercial outreach, increase residential participation in existing Xcel programs, integrate energy efficiency into city facilities, share information and raise awareness of energy efficiency and renewable energy programs and highlight successes from city facility participation in these programs.
- Emphasis on marketing existing Xcel programs. Quarterly reporting on participation in specific Xcel DSM programs is an improvement over the summary of annual participation reported in the Community Energy Report.
- “The team settled on a right-sized set of goals to compare progress against using best practices from energy reduction programs and from conversations about how practical and how aspirational the goals should be.” (page 14)
- Goals:
  - Target reduction of a 1% energy consumption and commensurate emissions reductions on an annual basis.
  - Increase participation significantly in energy efficiency and renewable energy programs across all sectors.
- The images below provide examples of the “playbook” for implementing Partners in Energy goals as well as a sample strategy focused on large customers.
### Playbook for Achieving Our Goals

#### Ongoing – Tracking
- Quarterly Xcel Energy DSM program participation updates
- Bi-monthly implementation team check-ins
- Communications delivered to dedicated email
- Regular rebates program updates are provided to community members to stay current

#### Immediate Actions (Feb – Jun 2017)
- Develop approach and start identifying candidate neighborhoods for residential programs
- Meet with CTC representatives and identify likely high energy users willing to participate
- Refine Green Business Program
- Identify how Louisville Energy Stars program will be used
- Confirm eligibility of Rec Center project for rebates and engage in energy efficiency projects
- Hold first training and provide collateral for planning department
- Provide School Education Kits for immediate distribution

#### Near-term Actions (Jun 2017 – Sept 2018)
- Build effective communications strategy to reach and influence residents and businesses
- Build Green Business Recognition Program to encompass large energy users and more ambitious actions year over year
- Showcase top commercial and industrial energy performers and encourage additional reductions in this sector
- Add in additional elements of Sustainability Action Plan to Energy Stars program
- Incorporate energy efficiency and renewable energy incentives, regulations, and requirements into city policies and practices
# LOUISVILLE ENERGY ACTION PLAN

## Description

By focusing on providing targeted large commercial and industrial energy users with information to reduce their energy use and increase their use of renewable energy, we will enable significant reductions in energy. This strategy will identify and engage with large energy users including buildings in the Colorado Technology Center, Hospitals, large users along McCaslin and other commercial corridors in order to share information on accessing and utilizing existing programs to save money and energy, use grant funding to install electric vehicle charging stations, and use energy benchmarking programs to start tracking consumption and identifying energy saving opportunities.

## Targets

- Increase annual participation rates in the following targeted DSM programs (above historic 2015 participation):
  - Custom efficiency: 5
  - Recommissioning: 1
  - Chiller efficiency: 3
  - Motor & Drive Efficiency: 1
  - Lighting Efficiency: 10
  - Building Optimization DR Pilot: 1
  - Commercial Refrigeration Efficiency: 1
  - Energy Benchmarking: 4
- Increase participation in renewable energy programs by engaging 2 new participants in Solar Rewards for Business
- Install at least 1 more electric vehicle charging station in the Colorado Technology Center, and at least 2 more at large commercial businesses in Louisville more broadly

## Scope

1. Identify large employers with high energy use potential that have low or non-recent participation in energy saving programs or who have participated in limited programs and would potentially benefit from additional programs.
2. Identify best contact in each organization (facility managers, owners, etc.)
3. Develop customized outreach materials including return on investment criteria where applicable to these businesses in conjunction with partners as part of overall Louisville sustainability effort.
4. Work with businesses at the CTC directly and through ownership association to identify leaders (neighbor tenants/owners and facilities managers), applicable programs, and partners to help them reach new goals.
5. Strategy lead to meet with businesses to review opportunities, deliver outreach materials, and set-up a time for a next set of more in-depth services.
6. Follow-up with energy services to set up benchmarking (by PACE), access to Xcel Energy programs (Partners in Energy), and identify next steps
7. Hold three large energy user forums and/or recognition events.
8. Develop case studies to encourage more participation.

## Responsible Parties and Roles

**City of Louisville**
- Lead the strategy as part of energy program and act as central point of contact
- Help identify businesses and contacts

**Xcel Energy**
- Provide content and marketing assistance for direct marketing
- Representation at key meetings
- Logistical support
Questions for Xcel

- What sources of micro-grants and grants has Xcel identified and helped current or previous Partners in Energy communities secure?
- What is an example of the neighborhood-level analysis and geographic identification that could be provided (e.g. total customer energy usage and demand, participation in existing energy efficiency and demand-side management programs, or targeting of specific non-participating customers for existing or new programs based on an analysis of usage)?
- Why is the term “non-biased” included in the resource center description of energy efficiency and renewable energy projects?
- How will the Partners in Energy program change if the Demand-Side Management Strategic Issues application is approved and future energy efficiency and demand-side management programs are geo-targeted?

Resources

- Xcel Energy Partners in Energy:
  - Homepage
  - How can we support your outreach?
  - FAQ
  - ACEEE presentation
  - City of Red Wing, MN case study
  - Application
- City of Louisville: Partners in Energy Website
- City of Louisville: Energy Action Plan
Current Environment for RECs in Boulder

**Boulder hydroelectric RECs**

*Description:* The city sells RECs to Xcel and to Tri-State from its hydroelectric facilities. The price of the REC is unknown since it is included in the total price per MWh paid for the energy and capacity produced by each hydroelectric unit.

*Status:* The city retains 50% of the RECs from the hydroelectric units sold to Xcel but sells 100% of the RECs from the Boulder Canyon Hydro sold to Tri-State. Staff is working to negotiate new contracts with Xcel to replace recently expired contracts for the four small treated water hydroelectric stations.

**Solar Rewards**

*Description:* The RESA requires Xcel to acquire 1.5% of sales by 2020 from ‘retail distributed generation.’ As a result, Xcel offers Solar Rewards, an incentive payment based on the output of customer rooftop solar installations. Customers receiving payments sell the RECs to Xcel.

*Status:* The city sells RECs via Solar Rewards from all solar installations installed on city facilities. It is anticipated that most of the rooftop solar systems in Boulder also participate in the Solar Rewards program.

**Windsource**

*Description:* Xcel sells RECs from existing wind farms that are not needed for RESA compliance (i.e. Xcel has more wind on its system than is required by law and so Windsource purchases do not add new renewables to the system).

*Status:* The current cost of Windsource is 1.5 cents per kWh. At this rate, Boulder would spend approximately $20 million/year to purchase Windsource RECs equal to 100% of community electricity usage.

**Renewable Connect**

*Description:* Customers can subscribe to shares of a 50 MW solar farm for monthly, 5-year and 10-year periods. Depending on the cost of the solar and the future cost of fuel, customers may pay a premium or receive a discount. RECs are retired on behalf of the customer so the customers can claim the environmental benefit.

*Status:* A new, not-yet-available solar subscription product. Renewable Connect is targeted to become available in mid- to late 2018.