

An Energy Action Plan for **City of Louisville, CO**



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Acknowledgements

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Louisville's Energy Action Planning Team

The planning team was formed from a varied group of city and county staff, local and regional organizations, local businesses, and committed community members.

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CITY OF LOUISVILLE ENERGY ACTION PLAN

Executive Summary

Our Vision

The City of Louisville, in collaboration with residents and businesses, encourages energy efficiency and renewable energy, leveraging resources, and benefitting our economic vitality, environmental health, and community well-being.

Our Goals

The City of Louisville’s overarching goal is to reduce total energy use 1% annually, which could compound to reducing total energy use by 11% over the 2015 baseline by 2027. In addition, the City will strive to increase participation in energy reduction and renewable energy programs across all identified sectors.

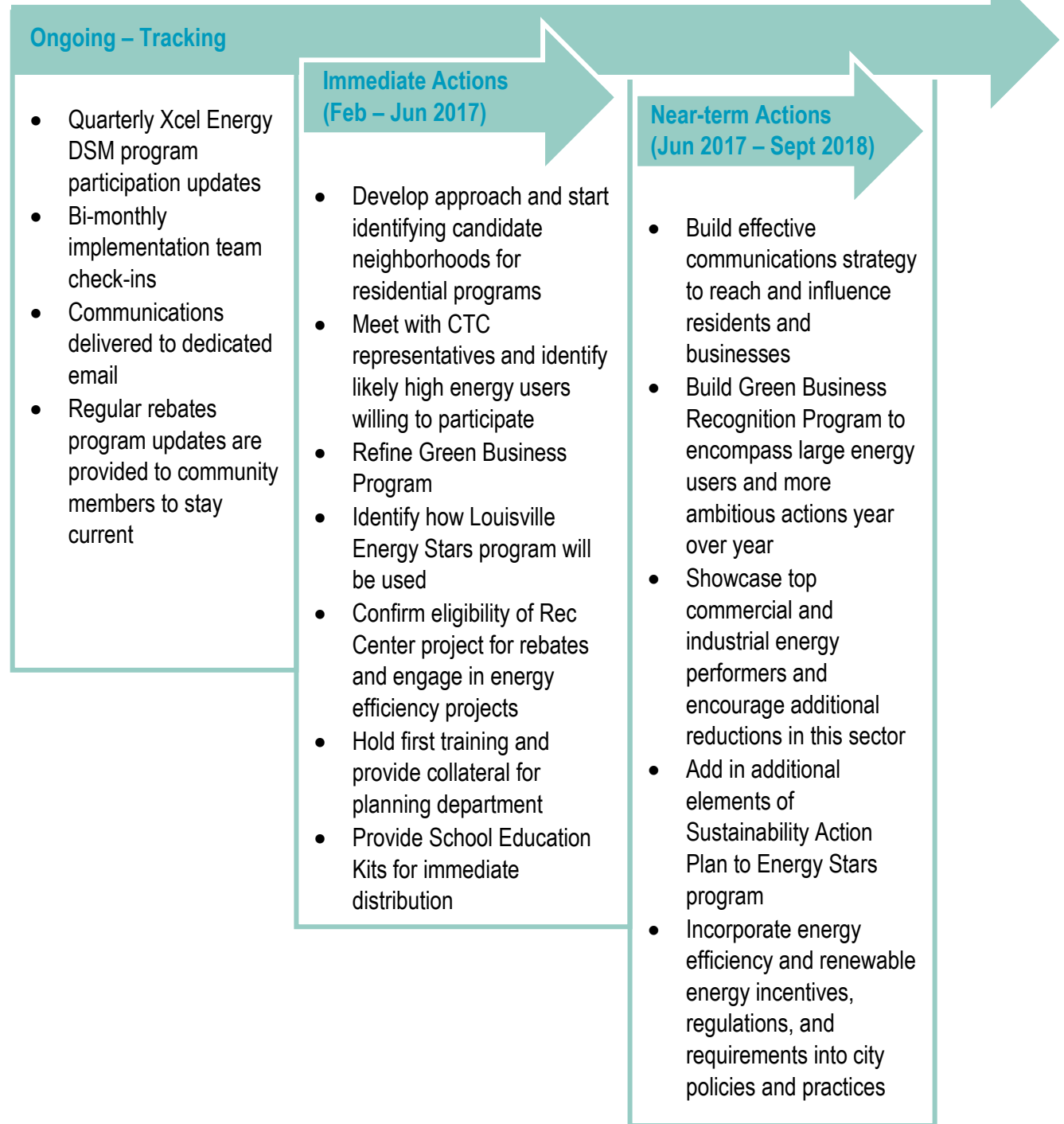
How Will We Get There?

To support achievement of its goals, Louisville will focus on these priority strategies:

<p>Commercial/ Industrial</p>	<p>Strategy: Grow the Louisville Green Business Recognition Program Large Commercial Outreach</p>
<p>Residential</p>	<p>Strategies: Increase Residential Participation in Priority Areas</p>
<p>Municipal</p>	<p>Strategy: City Showcase – Integrate Energy Efficiency in City Facilities City Showcase – Share Information</p>



Playbook for Achieving Our Goals



Introduction

The purpose of this Energy Action Plan is to outline tangible steps for the Louisville Sustainability Advisory Board (LSAB) to make measurable progress toward achieving its ambitious sustainability goals for the City of Louisville. In May 2016, City Manager Malcolm Fleming signed a Memorandum of Understanding (MOU) with Xcel Energy to participate in Partners in Energy. From August 2016 to January 2017, a planning team consisting of city, county, and local business and organizational members participated in four workshops to develop the contents of this Energy Action Plan alongside representatives from Xcel Energy.

This planning process was facilitated through Xcel Energy's Partners in Energy offering for communities. During this process, the planning team reviewed Xcel Energy utility data for the city, prioritized areas of focus, goals, and strategies which form the foundation of the Energy Action Plan.

The following plan provides an overview of the City of Louisville's demographics, the city's baseline energy use and profile, documentation of the Partners in Energy planning process, a summary of priority focus areas identified by the planning team for implementation, and the near-term action and strategies required to keep the implementation of this Plan on track. Implementation of the Energy Action Plan will begin in early 2017.

Xcel Energy Partners in Energy

Xcel Energy is the main electric and gas utility serving the City of Louisville. In the summer of 2014, Xcel Energy launched Partners in Energy to support communities, such as the City of Louisville, in developing and implementing energy action plans that supplement existing sustainability plans, strategies, and tools (Figure 1). The content of this Plan is derived from a series of planning workshops held in the community with a planning team committed to representing local energy priorities and implementing plan strategies.

Partners in Energy will work with the City of Louisville to coordinate support for implementing this Plan and has developed an MOU that outlines specific support Xcel Energy will provide to help the City deploy its strategies and achieve its targets and goals (Figure 2 and Appendix 1: Implementation Memorandum of Understanding).

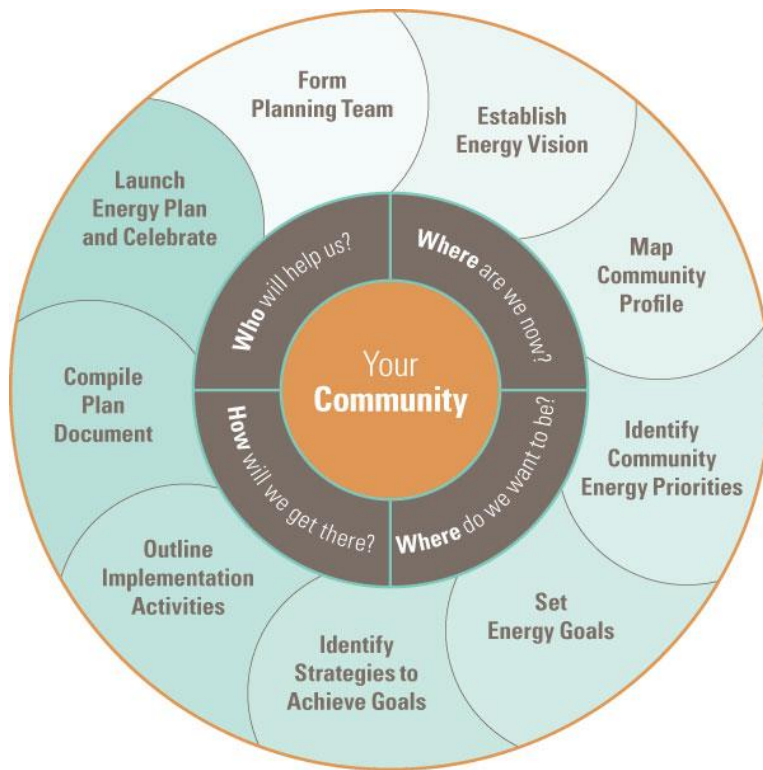


Figure 1. Partners in Energy Process for Success



Figure 2. Resources from Xcel Energy for Implementation

Who Are We?

The City of Louisville, Colorado is a suburban community, roughly 8.0 square miles in size, located in southeastern Boulder County, six miles east of the City of Boulder and 25 miles northwest of Denver. Louisville is a desirable community with many accolades lauding the city as one of the best places to live in the United States, and winning the top place to live by *Money Magazine* in 2009 and 2011. High quality of life attributable to a positive economic outlook, strong housing market, natural environment, and education are among the factors driving new growth and development.

The founding of Louisville, Colorado dates to the emerging coal mining industry in the late 1800s. Louis Nawatny, Louisville's namesake, opened the first coal mine in the area, Welch Mine, in 1877.¹ Part of the productive Northern Coalfield in Boulder and Weld Counties, over 30 mines came to operate within the boundaries of Louisville. In the 1950s the last operating coal mines closed, and over the subsequent decades the town transitioned to the modern city which we know today.

Present day, Louisville is reaching the practical limits of growth as most of the city limits are built out and there is limited available land for additional annexation. Louisville is, however, continuing to experience commercial and industrial growth concentrated in distinct areas, as demonstrated by the community map in Figure 3.

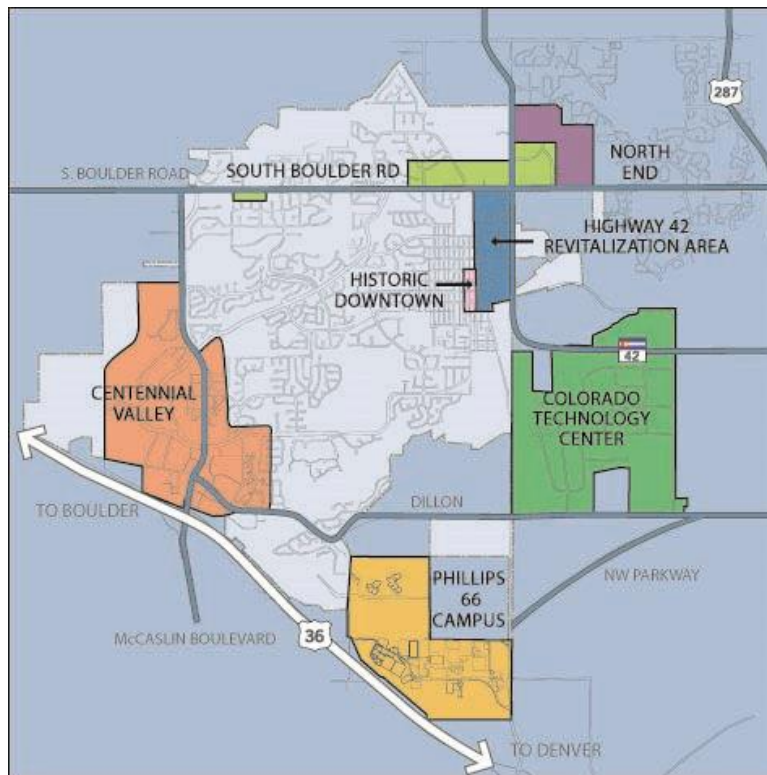


Figure 3. City of Louisville Map Highlighting Business Areas

¹ Conarroe, Carolyn. "The Louisville Story". Louisville Chamber. 2016. <http://www.louisvillechamber.com/louisville-history/>

Demographics

Louisville had a population of 20,112 in 2014, making it the 36th most populated city in Colorado and the 4th largest city in Boulder County.² According to the U.S. Census numbers, the city has experienced 2% annual growth since 2010. This outpaces trends of the greater Denver metropolitan region where the average population growth rate is approximately 1.5% per year since 2010.

While the overall population is growing, it is trending older, with an average median age of 42 years while Boulder County's and the Denver metro area's median age is about 36. Nearly half (42%) of the population are aged between 25 and 55, which comprises much of the employed population.

Louisville's population is majority white (86%), with those of Hispanic origin comprising the second largest racial or ethnic group (6%).³ Compared to the Denver metro area (66%), Louisville has a significantly higher proportion of white residents. Figure 4 displays the racial composition of Louisville.

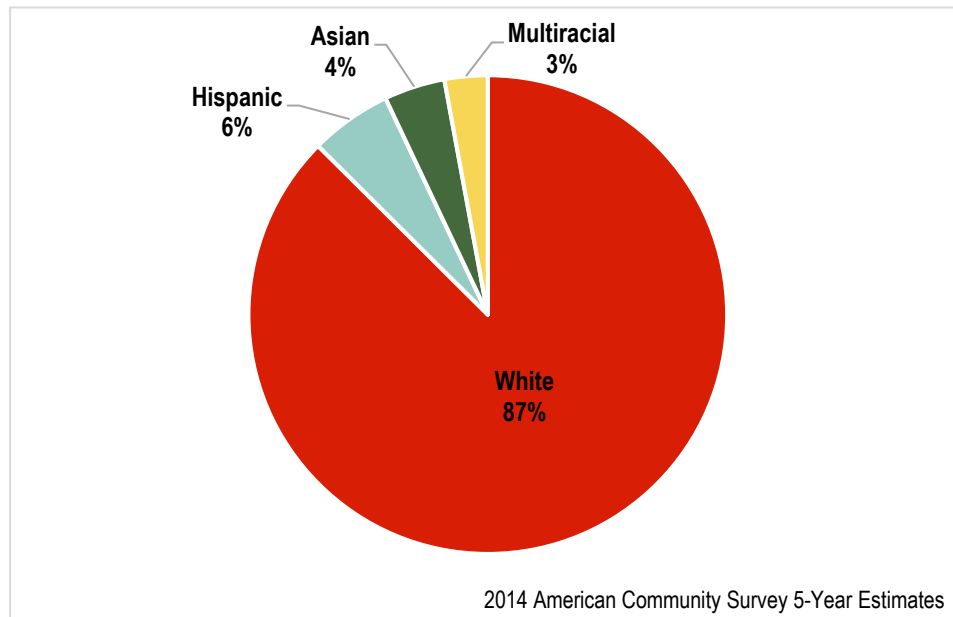


Figure 4. City of Louisville Demographics

Housing

According to the U.S. Census, there are approximately 8,300⁴ housing units in Louisville, 83% of which are single-family detached or attached structures. Of the available housing stock, 72% are owner-occupied and 28% renter occupied. Moreover, the housing stock in Louisville is considered mature with only 7% of homes built since 2000. In fact, 64% of homes were built between 1980 and 1990, representing a unique housing vintage with significant opportunity for energy efficiency improvements and savings. Growth projections approximate about an additional 220 units to be added annually through 2021.⁵ Figure 5 shows the relative age of Louisville's housing stock.

² 2016 – City of Louisville Statistics

³ U.S. Census Bureau, American Community Survey Estimates 2015

⁴ 8,274 according to the U.S. Census Bureau, American Community Survey Estimates 2015

⁵ City of Louisville 2016-2021 projections

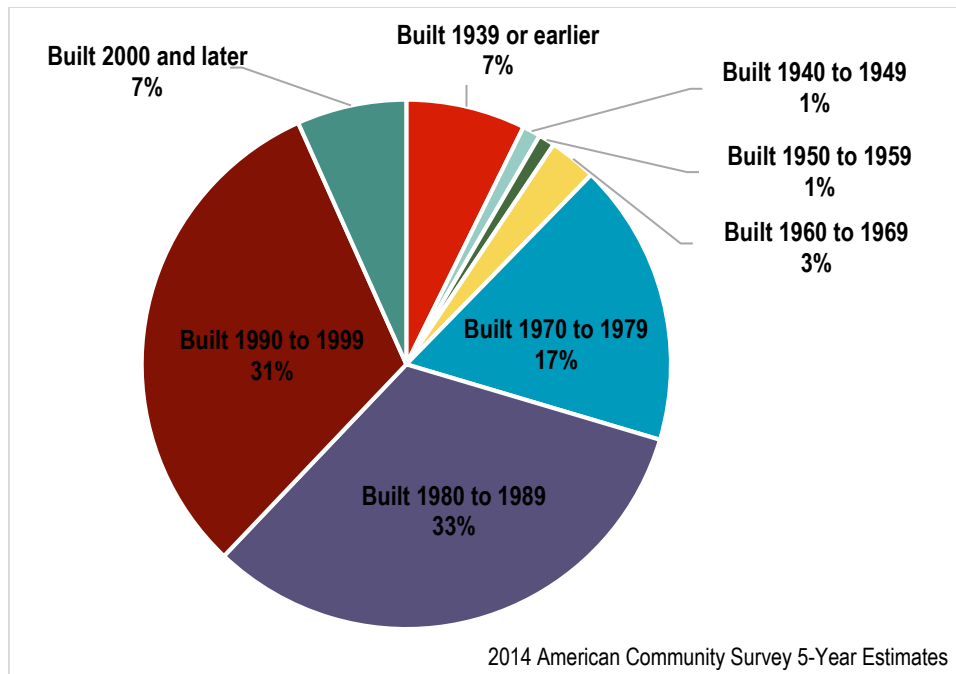


Figure 5. Original Year of Construction of Louisville's Housing Stock

Property values have been on the rise over the past decade leading to city-wide affordability challenges. The median home value has been increasing over 2.5% per year⁶ reaching \$385,300 in 2014, 61% higher than the state average. Median sales prices have increased approximately 37% since 2012, and 19% over 2015 alone.⁷ Renters are disproportionately experiencing affordability challenges with more than 50% of households spending 30% or more of their income on housing and utilities costs. Figure 6 shows the breakdown of these cost-burdened households in Louisville.

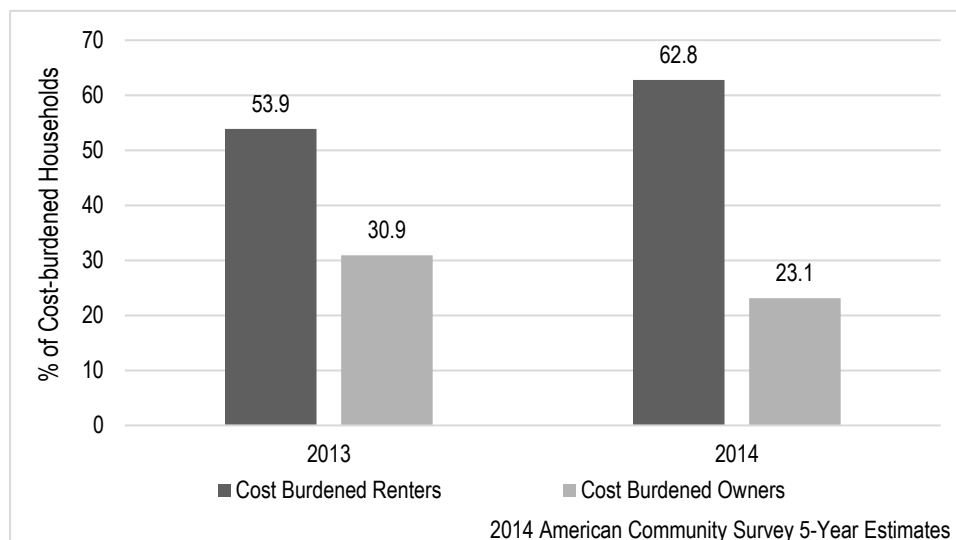


Figure 6. Cost Burdened Households in Louisville

⁶ U.S. Census Bureau, American Community Survey Estimates

⁷ Trulia

Business and Economy

There are approximately 810 businesses that employ 7,600 workers across all sectors.⁸ Unemployment, as of 2014, was approximately 2.9% and the median household income was \$92,121. Louisville residents' level of income is almost 25% higher than the median Boulder County income and nearly 44% higher than the state's median income. Additionally, Louisville's population is very well-educated relative to the county and state. Approximately 71% of residents have a bachelor's degree or higher compared to 59% in Boulder County and 36% statewide.

A highly-educated workforce is an important element to attracting and retaining high technology industries and advanced professional employers while diversifying the economic base of the community. This is reflective of the leading industries in Louisville including tech, telecom, aerospace, and clean energy.⁹ Other primary sectors include manufacturing, professional services, retail, and health care. Table 1 shows the top ten employers in Louisville.¹⁰

Table 1. Top 10 Employers in Louisville

Top Louisville Employers	
Employer	# of Employees
Avista Adventist Hospital	690
Zayo Group	480
Sierra Nevada Space Corporation	390
Balfour Senior Living	330
Fresca Foods	320
Medtronic	310
City of Louisville	290
GHX	240
Design Mechanical	190
Centennial Peaks Hospital	180

Commitment to Sustainability

The City of Louisville has an affirmed commitment to sustainability through the creation and adoption of the [Sustainability Action Plan](#) in 2016. This plan states an intent to prioritize sustainability initiatives as part of community supported responsible governance with the assistance of the Louisville Sustainability Advisory Board (LSAB) and staff support. As identified in the plan, "**SUSTAINABILITY MEANS** creating balance among the environment, the economy, and society to ensure that practices and decisions do not compromise the quality of life for future generations. Sustainability is not an end goal, but an approach that recognizes the interplay between natural, economic, and social interests." Milestones in sustainability are presented for context followed by a structured framework for establishing and achieving sustainability goals in Louisville.

The Sustainability Action Plan identifies five focus areas: 1) Climate & Energy, 2) Water, 3) Transportation, 4) Waste, and 5) Local Food & Agriculture. Each focus area has an overarching goal, for Climate &

⁸ US Bureau of Labor Statistics, City of Louisville, 2012

⁹ City of Louisville 2013 Comprehensive Plan

¹⁰ <http://www.louisvilleco.gov/business/economic-development/statistics>

Energy specifically, that goal is to “Reduce energy consumption, increase the use of clean energy and transition away from fossil fuels.” Each focus area includes internal and external targets with multiple strategies identified to achieve them. For Climate & Energy, the targets are as follows:

- Internal Target 1) Move towards carbon neutrality for all City operations
- Internal Target 2) Move toward carbon neutrality in all City buildings
- External Target 1) Increase energy efficiency and renewable energy adoption in the commercial and residential sectors.

LSAB is an all-volunteer board, originally formed in the 1990s as the Resource Conservation Advisory Board and focused primarily on waste reduction. In 2010, the members proposed expanding their mission to “promoting sustainability through energy efficiency, resource conservation, and localization to better the environment, social well-being, and economic vitality of Louisville.” LSAB has taken numerous actions over the years on a variety of sustainability initiatives, including water use and conservation, providing CFL and LED replacement light bulbs to residents, and a comprehensive residential curbside reduce-recycling-compost collection service. In 2016, LSAB has taken on the launch of a Green Business Recognition Program in partnership with Boulder County and others that will provide assistance and recognition for commercial businesses that conserve resources. By focusing on the areas of greatest impact and opportunity with the creation of the Sustainability Action Plan, LSAB seeks to encourage and implement initiatives that will contribute effectively to improve the community’s triple bottom line and overall quality of life.

The Case for a Community Energy Action Plan

In order to realize the goals and targets identified in the Sustainability Action Plan’s Climate & Energy focus area, concrete means of supporting the identified strategies are needed. Realizing that the community’s electric and gas utility should ideally play a significant role in the energy reduction efforts, and that achieving significant energy reductions will require participation by the entire community, an Energy Action Plan has been developed. While the Energy Action Plan, or EAP, will not address each of the strategies identified under the Climate & Energy focus area, identifying efforts the community stands behind will lead to tangible actions and outcomes in support of the targets.

In the 2014 Louisville Baseline Energy Study, approximately half of GHG emissions were attributable to energy use in the community. Recognizing that the EAP will play a large role in achieving emissions reductions in the short term as well as paving the way for future reductions. As such, Partners in Energy is explicitly identified in the Sustainability Action Plan, and will be a key implementation vehicle for achieving significant savings.

In addition to energy and emissions savings, it is important to note that with rebates and reduced utility costs, the community of Louisville is expected to see long term cost savings. Lower heating bills for residents and lower electric costs for businesses allow more money to be directed to other uses, leading to increased wealth and opportunity. Moreover, the environmental benefits of reduced fossil fuel energy consumption are addressed more completely in the Sustainability Action Plan. Social benefits for the community are addressed as well, with some of the actions identified addressing such topics as school

education and affordable housing, along with enabling the community to take pride in the effective work being done.

Where Are We Now?

Baseline Energy Analysis

An early step in the Partners in Energy planning process was to review current energy use in Louisville. Energy statistics were calculated and presented by the Xcel Energy team from 2013 to 2015.¹¹ Comparing these data helped the planning team understand how and where energy is used in the city. While the three years of data were used for trending purposes, the year 2015 was established as the baseline for this Plan. Electricity and natural gas data, provided by Xcel Energy, show that Louisville has approximately 7,900 residential, commercial, and industrial accounts that consumed approximately 205 million kWh of electricity and 8.8 million therms of natural gas in 2015. Figure 7 shows Louisville’s proportion of premises and total energy consumed by premise in 2015. It is important to note that the number of identified premises is less than the total number of houses and businesses in Louisville; this is in part due to multitenant buildings that may share a common meter among several or more units as well as data collection issues such as similar boundaries and active meters at time of collection.

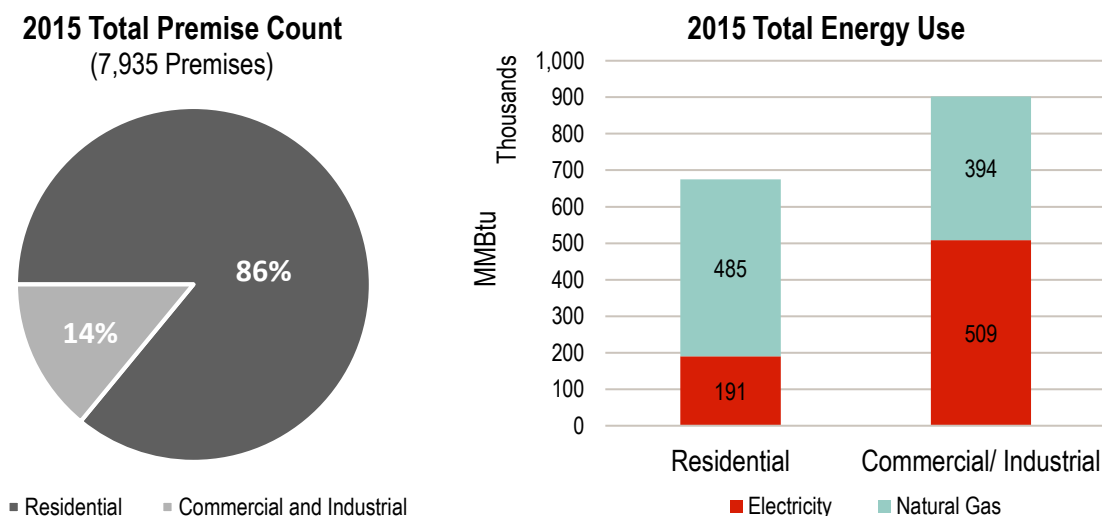


Figure 7. City of Louisville's Premises by Sector and Energy Use by Premise in 2015

While commercial and industrial premises account for less than one-quarter of total premises, they disproportionately consume 56% (675,000 MMBtu) of the total energy in Louisville. Conversely, residential premises account for over three-quarters of total premises and consume only 44% (902,00 MMBtu) of the total energy. Approximately 6,800 residential accounts consumed 56 million kWh (27%) of electricity and 4.9 million therms (55%) of natural gas while the remaining approximately 1,100 commercial and industrial

¹¹ All energy data presented through this process was developed for planning purposes and may contain variations from data obtained through other sources, including census data. All energy and program data presented here comply with Xcel Energy’s Colorado data privacy policies (all summary statistics must contain at least 15 entities, and no single entity can be responsible for more than 15% of the total or they will be removed from the summary).

accounts consumed 150 million kWh (73%) of electricity and 4.0 million therms (45%) of natural gas. Figure 8 compares Louisville’s electricity and natural gas use, respectively, in 2015.

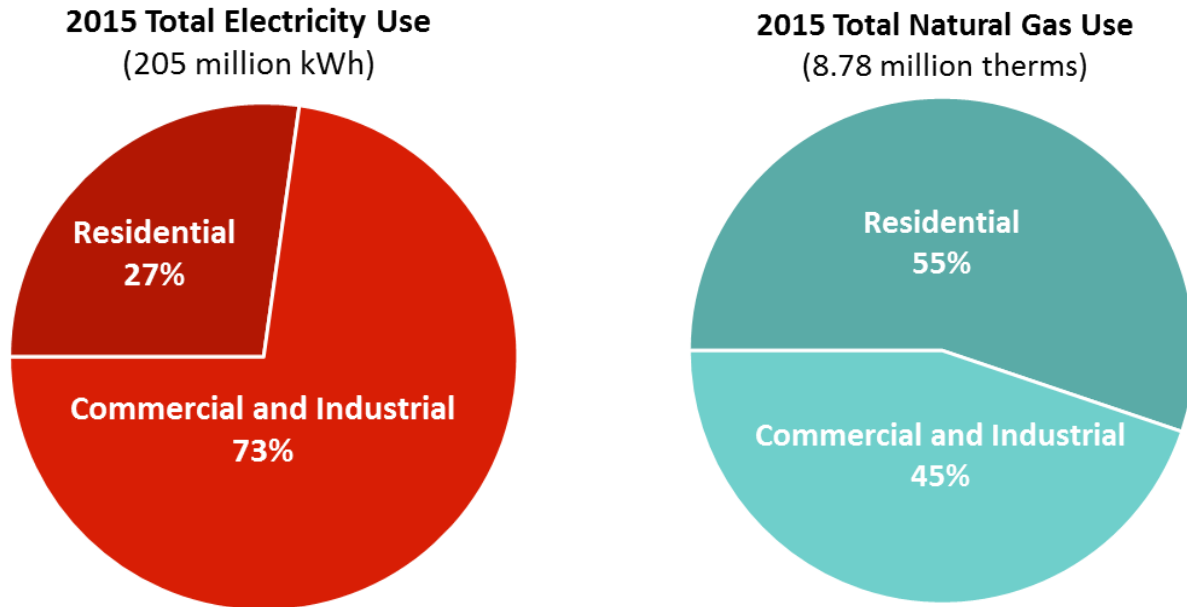


Figure 8. City of Louisville Energy Use by Sector in 2015

Over the 3-year period from 2013 to 2015, Louisville experienced a relatively stagnant total energy use trend across the electricity and natural gas sectors. Year over year, the residential sector has shown a slight decrease in electricity and natural gas consumption, offset by a slight increase in the commercial sector’s electricity and natural gas consumption, as shown in Figure 9. This trending has occurred amid population growth and economic prosperity. It is also worth noting that this data has not been weather normalized. Looking at the natural gas consumption, in particular, the spike in 2014 is also correlated to lower than average temperatures and a resulting higher heating demand.

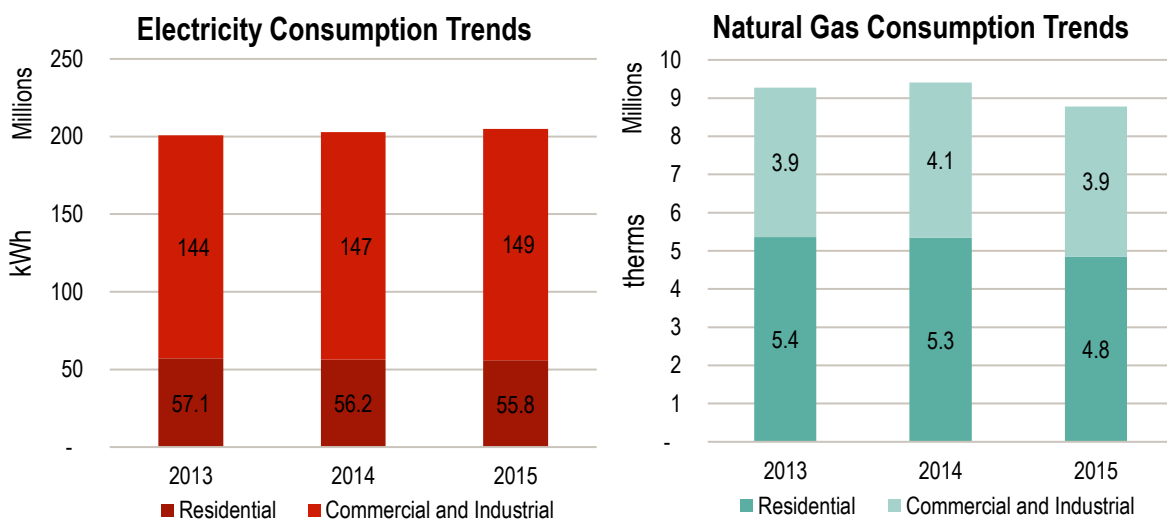


Figure 9. Energy Use Since 2013

Community Efficiency Program Participation

Baseline data gathered to help in developing this Energy Action Plan include historic Xcel Energy demand side management (DSM) rebate program participation count specifically for Louisville. These data provide a snapshot of what types of programs both residential and commercial customers are using, to what degree, and likely channels of information. They also show opportunities for greater participation in the available DSM programs and need for increased education and awareness across the community. Figure 10 and Figure 11 show the DSM program participation for the baseline year, 2015.

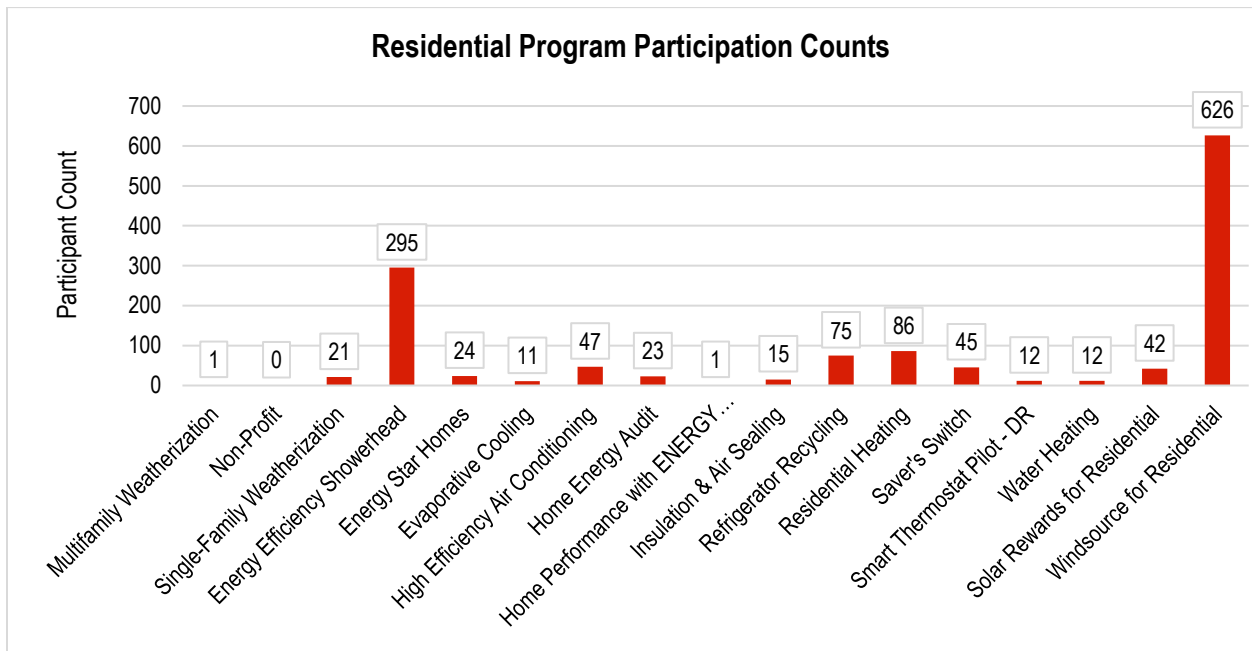


Figure 10. Baseline Year (2015) Residential Program Participation Counts

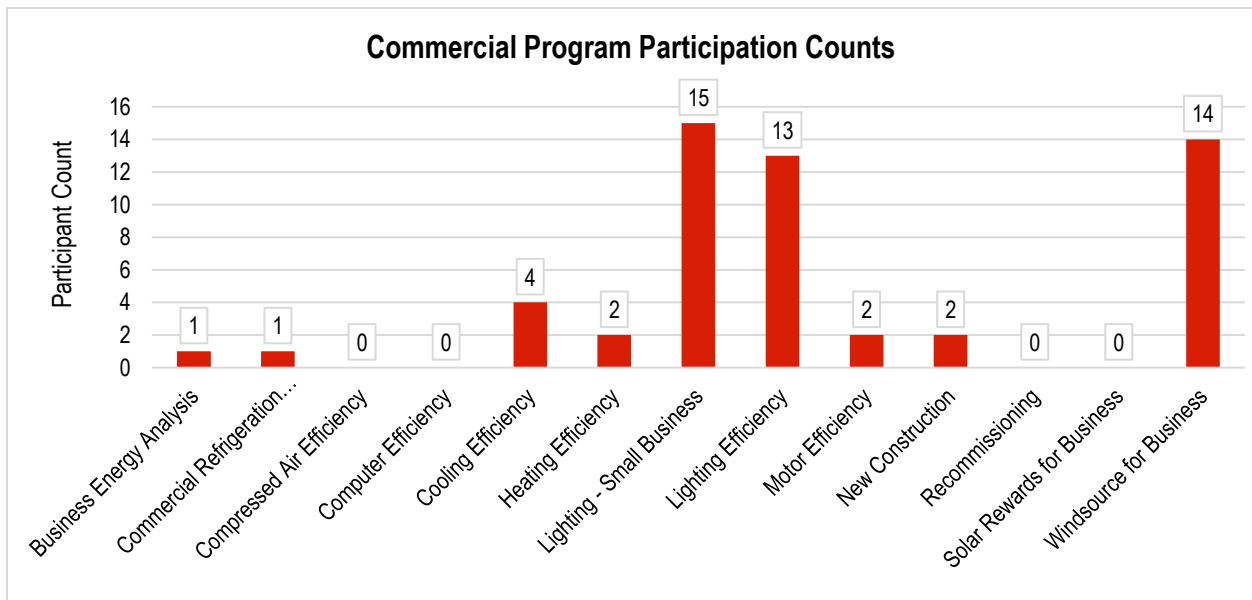


Figure 11. Baseline Year (2015) Commercial Program Participation Counts

Existing Energy Practices

Community Energy Initiatives

City of Louisville Efforts

- Received and implemented the Boulder County High Efficiency Lighting Program grant from 2006 to 2008
- Louisville Sustainability Advisory Board (LSAB) established in 2010
 - Adopted Sustainability Action Plan in 2016 with specific internal and external targets for energy and buildings
 - Plans to replace 200 streetlights to LEDs in partnership with Xcel Energy
 - Considering developing an electric vehicle (EV) plan in partnership with local organizations to explore public and private funding
- LSAB established the Louisville Green Business Recognition Program in 2016, in partnership with Boulder County Partners for a Clean Environment (PACE)
- In 2010, installed 432 kW of solar at the Waste Water Treatment Plant and Water Treatment Plant
- In 2013, installed an electric vehicle charging station at the Library
- Sponsored a Greenhouse Gas & Sustainable Action Plan that identified commercial and residential energy usage in 14 sectors
- Ongoing lighting and energy efficiency upgrades in all City facilities
- Executed lease/ purchase of 146 kW solar in 2015 and 200 kW solar in 2016 with Clean Energy Collective (CEC) in addition to executing Capacity Commitment agreement for 1,400 kW solar in 2016 (which will power over 50% of City operations with renewable energy once installed)

Boulder County Efforts

- In 2015, Boulder County energy and sustainability programs served 98 residential and 21 commercial customers

Boulder Valley School District Efforts

- Bond funds are being used in the following ways:
 - New schools are designed to be net zero energy
 - Deep energy retrofits underway for existing schools
 - 20% energy reduction goal for remaining facilities

Local Outreach and Communication Channels

Engaging the community is critical to reaching Energy Action Plan goals. Below are some of the ways that residents and businesses currently receive information about existing programs, events, and initiatives in Louisville. These communication channels will be helpful during implementation efforts and will be further explored, identified, and utilized for each strategy during the plan implementation period.

Local Outreach Channels

Digital and Traditional Communications

- Louisville Sustainability Advisory Board
- Louisville Green Business Recognition Program [Webpage](#)
- Boulder County PACE [Website](#)
- Targeted emails from Xcel Energy
- Boulder County EnergySmart quarterly email updates
- Boulder County PACE email lists
- Partner websites
- E-Notification to City mailing lists
- City of Louisville Engage Louisville [Website](#)
- Daily Camera

Social Media

- City of Louisville Government Facebook page
- NextDoor neighborhood networks

Events

- First Friday Art Walk
- Parade of Lights
- Fall Festival
- Taste of Louisville
- Street Faire
- WinterSkate
- Farmers Market
- Earth Week
- Pints in the Park

Community Spaces for Collateral Distribution

- Louisville Public Library
- Louisville Recreation/ Senior Center

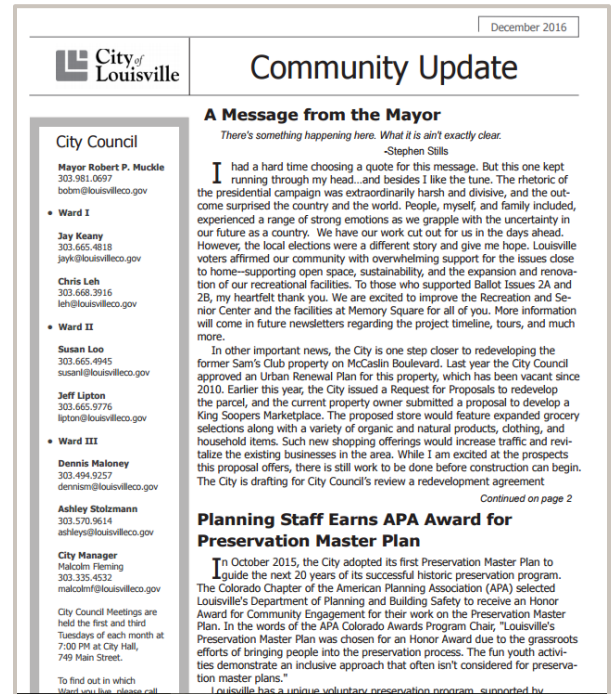


Figure 12. City of Louisville Monthly Newsletter

Where Do We Want To Go?

Our Energy Vision

In order to establish a vision of energy use for the community, the planning team reviewed examples that other communities have developed alongside relevant examples from City documents to try and identify what elements were most important to incorporate. While the vision is intended to guide the energy related efforts for the community; the final vision statement also fits well within the Sustainability Action Plan and is in keeping with the principles expressed in [Louisville's Comprehensive Plan](#).

After several iterations and discussions, the planning team selected the following vision for Louisville's energy future:

The City of Louisville, in collaboration with residents and businesses, encourages energy efficiency and renewable energy, leveraging resources, and benefitting our economic vitality, environmental health, and community well-being.

Focus Areas

Focus areas for Louisville were selected to provide coverage of the primary sectors that influence energy consumption, namely residential, commercial/Industrial, and municipal. In addition to the direct consumption that each of these sectors represent, it was also recognized that the municipal focus area provides a unique opportunity to positively influence the other two sectors. Below we have identified some energy characteristics of each focus area along with specific reasons they were identified for this Plan.

Focus Area 1: Commercial/ Industrial

- Commercial and industrial accounted for 73% of total electricity used (1.5 GWh) and 45% of natural gas used (3.9 million therms) in 2015
- Commercial and industrial DSM programs offer the greatest amount of savings per participant
- Commercial and industrial facilities are one of the fastest growing segments of Louisville
- The Louisville Green Business Recognition Program, launched in 2016, provides excellent momentum to capitalize on

Focus Area 2: Residential

- Residential energy use accounted for 27% of Louisville's electricity used (0.56 GWh) and 55% of its natural gas used (4.9 million therms) in 2015
- The majority of Louisville's housing stock was built between 1980 and 2000, which is coming of age for energy improvements that are also cost effective
- Increasing housing costs make saving money spent on utilities more important
- A gap was identified in reaching Louisville residents whose incomes are above poverty level, but below Area Median Income (AMI)
- While schools are generally performing well, providing students with the opportunity to learn about energy and share that information with parents can be an effective way to reach the community

Focus Area 3: Municipal

- City facilities used approximately 4.6 million kWh of electricity and 5,100 therms of natural gas in 2015
- Through permitting and outreach, the municipal sector can influence much of the new development and redevelopment in Louisville
- Building on the excellent work to date on improving facility performance, the City can lead by example by demonstrating resource efficient practices and operations, and inspiring civic pride

Goals

Since the goals and targets in the Sustainability Action Plan are a mix of quantifiable (e.g. carbon neutrality in all City buildings) and qualitative (e.g. increase energy efficiency and renewable energy adoption in the commercial and residential sectors), the planning team decided to build goals using a bottom up process. Identifying potential strategies in each focus area and plotting the reduction potential versus a Business-as-Usual (BAU) case. By doing so, the team was able to compare different goal scenarios. In conjunction, 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. The planning team also identified that the goals should be cast both in terms of energy as well as emissions reductions, and determined that goals per focus area based on the strategies would be the best way to track progress towards any overarching goals.

Due to the fact that the Partners in Energy team will be providing implementation assistance for an 18-month period, energy savings were initially identified using this period as a guide. Most of the measures use conservative estimates and seek to build capacity in addition to providing short-term assistance. It was assumed that a majority of the strategies will persist over time at the same participation levels chosen in this 18-month implementation period, year-over-year. The planning team identified a timeline of two to ten years as appropriate for the goals recognizing that the strategies will be initiated during the implementation period and have effects that carry over through the mid-term before needing to be updated. Partners in Energy includes tracking of performance over time and Louisville will have access to Xcel Energy Community Energy Reports annually.

Finally, it is acknowledged that the goals are not commitments, but rather benchmarks to compare progress against. While the strategies have discrete targets for energy savings based largely on participation in energy savings programs, actual progress will be measured in terms of what the community thinks is most important at the time. To that end, energy savings and renewable generation goals are supplemented with qualitative goals, like education and sharing information rather than measured energy savings.

The following overarching goals were developed for the community of Louisville, CO:

- By achieving the strategies identified, target a **reduction of at least 1% energy consumption and commensurate emissions reductions on an annual basis**, despite community growth
- **Increase participation significantly in energy efficiency and renewable energy programs** in the commercial, residential, and municipal sectors

Figure 13 illustrates Louisville's community reduction goal compared to the BAU forecast, as well as Xcel Energy's statewide annual reduction goals for Colorado over the same period (1.5% for electricity and 1% for natural gas). The BAU line (dark solid) indicates the level of total energy use expected if no action were

taken, and is based on population growth of 0.5% and commercial and industrial growth of 1.1%. The Xcel Energy goal line (dashed-dot) indicates the utility’s own efficiency goals for the state. The Louisville goal line (light dashed) indicates expected outcome from the overarching goal established in this Plan, which is above and beyond continuing level of participation in programs as occurred in the 2015 baseline year. As shown in the figure, Louisville’s goal of 1% total additional energy reduction per year surpasses Xcel Energy’s goals for Colorado over the same period.

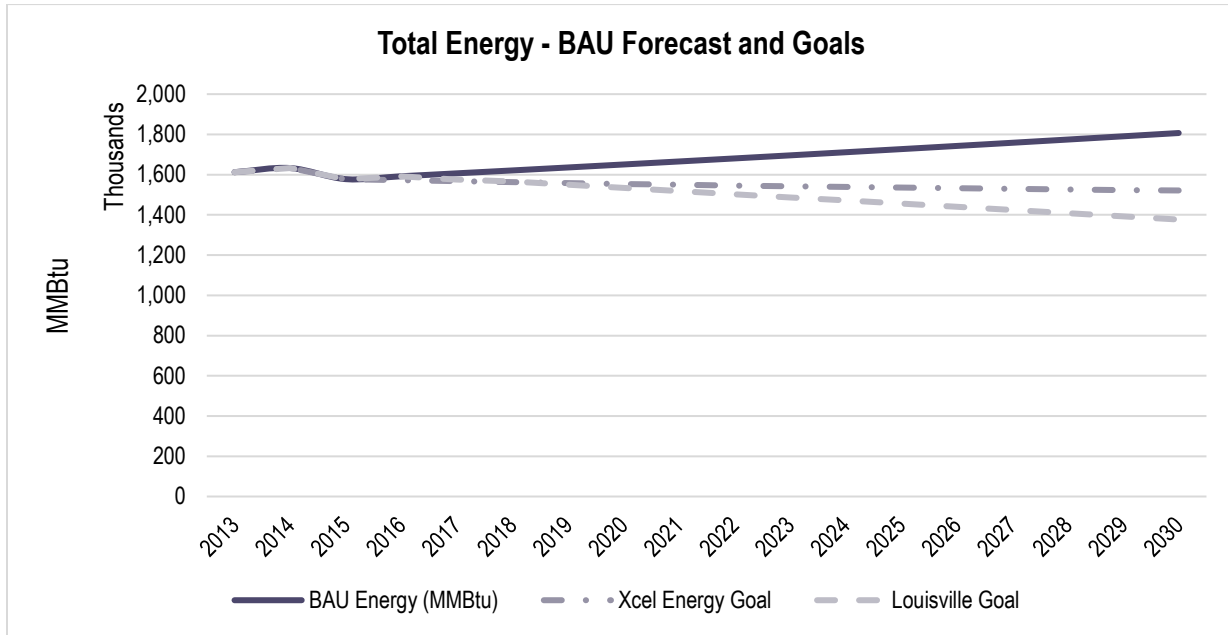


Figure 13. Louisville's Energy Action Plan Goal

How Are We Going To Get There?

Strategies are specific actions that Louisville and its partners plan to take to achieve the goals and targets stated in this Plan. After the focus areas were identified, the planning team presented and refined ideas to prioritize strategies that were deemed most important to the community. Criteria considered included relative impact, remaining opportunity, ability to be implemented, and ability to leverage existing efforts and resources. After the strategies were agreed upon, they were further refined by strategy working groups and the Partners in Energy team to include the details necessary for successful implementation.

Achieving energy and carbon reductions will require focused efforts in the short term and capacity building to ensure ongoing success in the long term. The strategies ultimately decided upon by the planning team include a mix of actions designed to educate and encourage citizens in Louisville to save energy at work and at home with a high chance of success and impact. The strategies were identified based on identified community needs, characteristics, and historical participation levels.

To support the overarching goals, focus area reduction goals and projected savings over the baseline year (2015) are as follows:

- Residential
 - Achieve energy savings of 250,000 kWh and 21,000 therms in the first year of the program and 2.7 GWh and 220,000 therms saved cumulatively over ten years

- Achieve cost savings of \$126,000 annually in the first year of the program and \$1.2 million in cumulative annual savings over ten years
- Commercial/Industrial
 - Achieve energy savings of 2,800,000 kWh and 30,000 therms in the first year of the program and 2.8 GWh and 437,000 therms saved cumulatively over ten years
 - Achieve cost savings of \$354,000 annually in the first year of the program and \$3.1 million in cumulative annual savings over ten years
- Municipal
 - Achieve energy savings of 560,00 kWh and 16,000 therms in the first year of the program and 3.7 GWh and 136,000 therms saved cumulatively over ten years
 - Achieve cost savings of \$150,000 annually in the first year of the program and \$1.0 million in cumulative annual savings over ten years

These projected savings are in addition to continued historical participation rates in the baseline year (2015). Figure 14 graphically shows the contribution from each focus area to total energy savings in comparison with the current historical contribution. Louisville’s overarching goal of 1% annual total energy use reduction is shown (white dashed-dot) for comparison. As shown in the figure, maintaining historic participation rates and reaching the targets identified per strategy puts Louisville in a position to reach its savings goals in the short and long term.

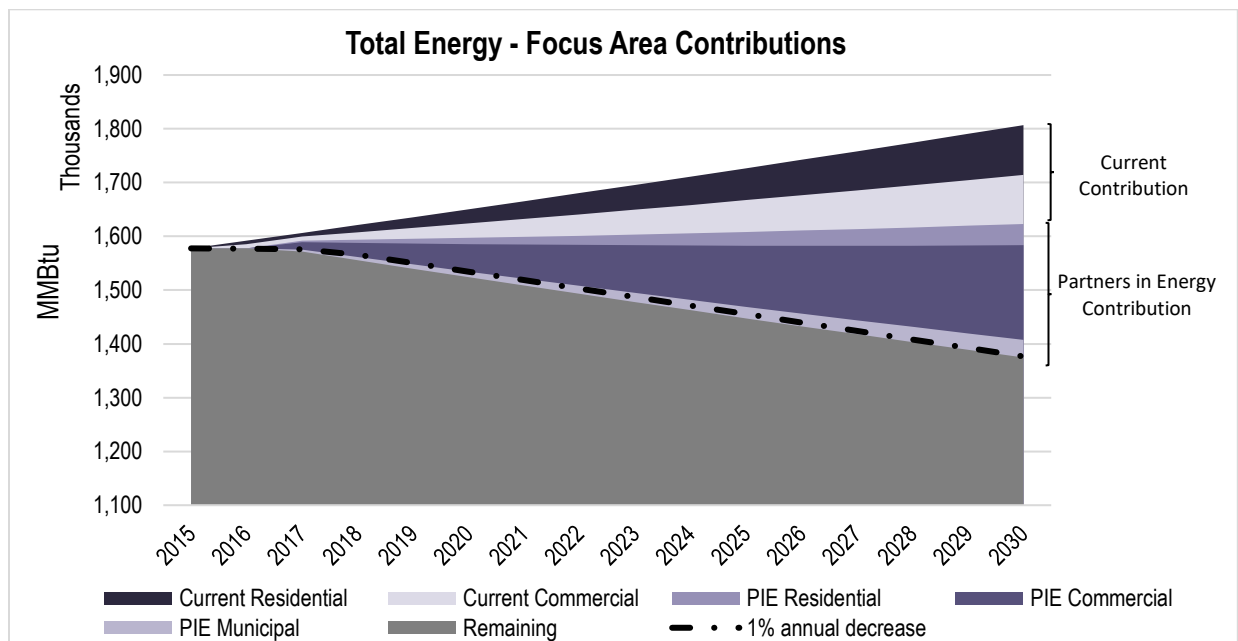


Figure 14. Total Energy Savings by Focus Area

Moreover, achieving these goals would reduce Louisville’s annual carbon footprint by 4,500 MTCO_{2e}, approximately equivalent to the carbon emitted from 950 passenger vehicles per year and a 2.5% reduction in emissions in the first year.¹² Figure 15 graphically shows the contribution from each focus area to total emissions reductions along with the continued shift to more renewable sources in Xcel Energy’s fuel

¹² [EPA Greenhouse Gas Equivalencies Calculator](#)

supply. It is notable that the greenhouse gas emission reductions are proportionately more than the energy reductions as each unit of electrical energy reduced is also incorporating the overall de-carbonization of the energy supply.

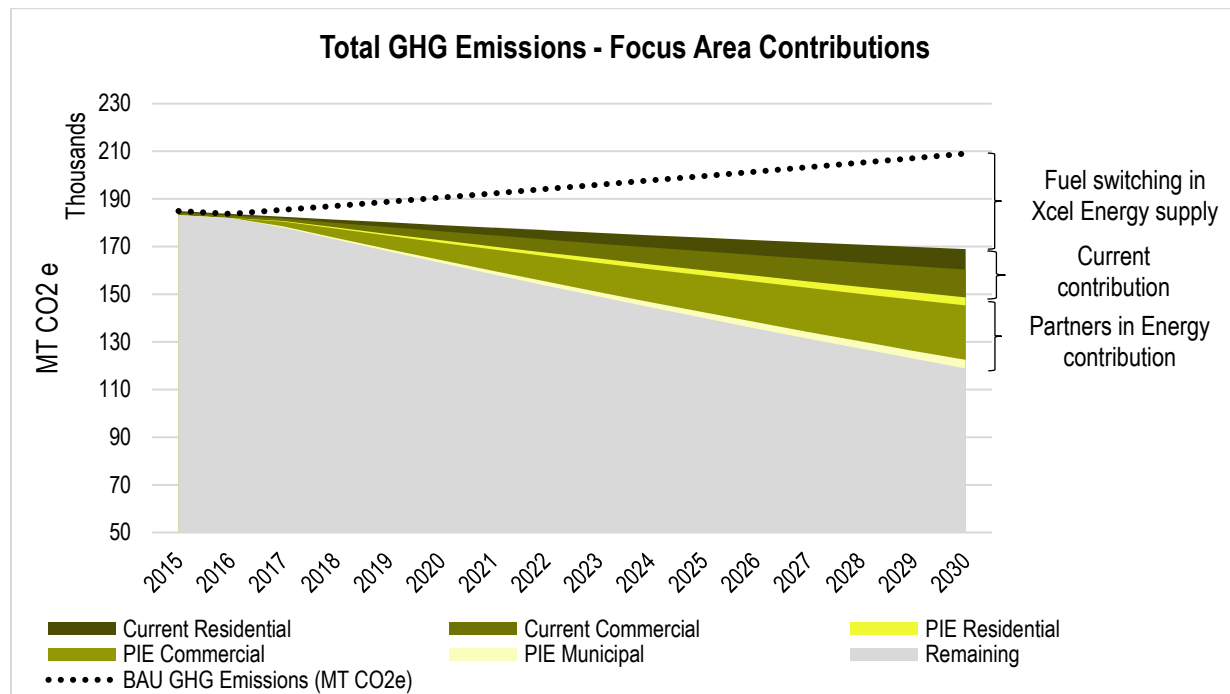


Figure 15. Total Emission Reduction by Focus Area

Each strategy identified has its own action plan that identifies a responsible leader and team members, outlines implementation steps and timeline, identifies partners and resources, and assigns metrics for tracking progress. **While Xcel Energy is committed to providing resources to support 18 months of implementation, full implementation of many of these strategies is dependent upon the level of resources and commitments made by Louisville and its implementation partners.** By providing staffing support and/or additional incentives to encourage participation many of the strategies could have amplified impacts if they are supported by Xcel Energy and the City of Louisville.

Focus Area 1: Commercial/ Industrial

Strategies in the Commercial/Industrial focus area focused primarily on large commercial and small commercial as two distinct aspects of the focus area, while also recognizing that the Green Business Program may provide an appropriate means to combine efforts and share resources.

Strategy 1: Large Business Outreach

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

<p>funding to install electric vehicle charging stations, and use energy benchmarking programs to start tracking consumption and identifying energy saving opportunities.</p>
<p>Targets</p> <ul style="list-style-type: none"> • Increase annual participation rates in the following targeted DSM programs (above historic 2015 participation): <ul style="list-style-type: none"> ○ Custom efficiency: 5 ○ Recommissioning: 1 ○ Cooling 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
<p>Scope</p> <ol style="list-style-type: none"> 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.
<p>Responsible Parties and Roles</p> <p>City of Louisville</p> <ul style="list-style-type: none"> • Lead the strategy as part of energy program and act as central point of contact • Help identify businesses and contacts <p>Xcel Energy</p> <ul style="list-style-type: none"> • Provide content and marketing assistance for direct marketing • Representation at key meetings • Logistical support • Support a large user energy forum during the day, projects to submit for recognition, and sponsor different vendors <p>Large Commercial Building Tenants, Facility Managers, and Developers</p> <ul style="list-style-type: none"> • Provide introductions, share success stories, and verify savings potential <p>Facilities Manager Groups and Business Park Associations</p> <ul style="list-style-type: none"> • Share customized material <p>Boulder County</p>

<ul style="list-style-type: none"> • Provide supportive services as available (Energy Benchmarking set-up, participation in Green Business program, etc.) and access to information on other resource saving opportunities
<p>Chambers of Commerce and Business Organizations</p> <ul style="list-style-type: none"> • Share information with members
<p>Clean Cities Coalition</p> <ul style="list-style-type: none"> • Provide information on workplace charging incentives
<p>Timeline</p>
<p>Launch-three months</p> <ul style="list-style-type: none"> • Identify businesses and contacts • Develop custom outreach materials • Make initial contacts to identify interest in participating
<p>Three-six months</p> <ul style="list-style-type: none"> • Hold meetings with individuals to identify best programs and any outstanding questions • Follow-up and enroll in programs/identify timeline for projects
<p>Six-twelve months</p> <ul style="list-style-type: none"> • Complete projects, • Identify additional participants
<p>Twelve-fifteen months</p> <ul style="list-style-type: none"> • Verify projects and select case studies • Identify additional participants
<p>Fifteen-eighteen months</p> <ul style="list-style-type: none"> • Complete case studies • Engage next round of participants
<p>Funding</p>
<p>This strategy would rely primarily on existing funding sources, but would be enhanced with City staffing support through economic development or another appropriate department.</p> <p>Funding for specific value-add initiatives such as electric car stations would come from identified partners.</p>
<p>Partners (Implementation Team)</p>
<ul style="list-style-type: none"> • Clean Cities Coalition (Janna West-Heiss) • Boulder County Commercial (Zac Swank, Matt Hannon) • Xcel Energy (Conor Merrigan) • City of Louisville Economic Development (Aaron DeJong) • City of Louisville Facilities (Dave Szabados) • Etkins Johnson (Jim Vasbinder) • Avista Hospital (Hal Hudson) • Pearl Izumi (TBD) • Louisville Sustainability Advisory Board (Mark Persichetti or other) • Louisville Chamber of Commerce (Shelley Angel)
<p>Outreach Channels</p>
<ul style="list-style-type: none"> • Business Association newsletters/direct emails • City Permitting/Building Department • Direct outreach • Introductions from similar businesses • City of Louisville general information • Targeted emails • Xcel Energy Account Managers

Measurement
<p>Mertics:</p> <ul style="list-style-type: none"> • Number of meetings held • Businesses contacted • Instances of media outreach • Xcel Energy program participation data
Strategy 2: Grow the Green Business Recognition Program
Description
<p>Support the continued success of Louisville’s Green Business Recognition Program through increasing the number of projects participating businesses are implementing. The Green Business Recognition Program publicly recognizes businesses that take steps towards sustainability, including the conservation of energy. Increasing the number of DSM projects implemented will translate to increased energy savings for participating businesses and across the program.</p>
Targets
<ul style="list-style-type: none"> • Over the next 18 months, increase number of participating businesses completing a project. Example programs and representative participation rates include the following (above historic 2015 participation): <ul style="list-style-type: none"> ○ Small Business Lighting: 15 ○ Lighting Efficiency: 16 ○ Building Optimization DR Pilot: 1 • Increase participating businesses by 20 in Year 2 of the program and another 10 in the first six months of Year 3
Scope
<ul style="list-style-type: none"> • Develop coordinated outreach content for websites, flyer, and press releases • Work with partners to spread the word through the business community • Provide direct assistance to businesses to reach their goals via PACE Advisors and Xcel Energy • Identify businesses and implement a lighting sweep to replace inefficient light bulbs and fixtures • Host annual recognition event • Have a presence at appropriate city and business events to share information
Responsible Parties and Roles
<p>City of Louisville Sustainability Advisory Board</p> <ul style="list-style-type: none"> • Identification of businesses • Program development • Ongoing support • Help design customized recognition <p>Boulder County PACE</p> <ul style="list-style-type: none"> • Planning, direct assistance, and advertising to businesses <p>Xcel Energy Partners in Energy</p> <ul style="list-style-type: none"> • Planning and content development • Event support • Program coordination (i.e., lighting sweep) <p>Businesses</p>

<ul style="list-style-type: none"> • Take additional steps to implement sustainability practices in their business operations and participate in the program <p>Louisville Chamber of Commerce</p> <ul style="list-style-type: none"> • Breakfast and informational session with a panel • Recognizing businesses (1/2 page ad) • Event advertising • Flexible ongoing support
Timeline
<p>Launch-three months</p> <ul style="list-style-type: none"> • Identify new businesses for year 2 <p>Three months-six months</p> <ul style="list-style-type: none"> • Outreach and project assistance to new businesses <p>Six months-twelve months</p> <ul style="list-style-type: none"> • Work with projects from last year to re-commit • Continue to work with new businesses • Host annual recognition event <p>Twelve months-eighteen months</p> <ul style="list-style-type: none"> • Identify new businesses for year 3 • Support all businesses in reaching more goals
Funding
<p>Boulder County PACE</p> <ul style="list-style-type: none"> • Incentives for energy efficiency <p>Xcel Energy</p> <ul style="list-style-type: none"> • Incentives for energy efficiency • Recognition event funding • Breakfast event sponsorship <p>City of Louisville</p> <ul style="list-style-type: none"> • Recognition Event funding
Partners
<ul style="list-style-type: none"> • City of Louisville Sustainability Advisory Board (Mark Persichetti) • Boulder County PACE (Matt Hannon) • Xcel Energy (Conor Merrigan) • City of Louisville (Events Coordinator, any Sustainability focused staff) • Louisville Chamber of Commerce (Shelley Angell) • Downtown Business Association (TBD)
Outreach Channels
<ul style="list-style-type: none"> • City of Louisville website • Louisville Chamber of Commerce • Xcel Energy Business Customer List • City Media – Facebook, Twitter • City of Louisville E-Notifications • Boulder County PACE website and email blasts • City Council (i.e., recognition of participating businesses and successes) • County Commissioner’s newsletter • Downtown Business Association newsletter • Events (i.e., Business Showcase)

Measurement
<p>Metrics:</p> <ul style="list-style-type: none"> • Xcel Energy program participation data • Estimated energy savings recorded as part of Boulder County PACE program • Number of events held • Number of new businesses

Focus Area 2: Residential

The residential strategy is a comprehensive strategy that include direct install programs that provide immediate energy savings, integration of school education kits, and an outreach effort to identify lower income homeowners that could benefit from energy saving services and connect them to appropriate programs.

Strategy 3: Increase Residential Participation in Priority Areas
<p>Description</p> <p>Develop an outreach campaign to raise awareness of Xcel Energy and other programs for residential customers with a focus on priority areas in Louisville which include multifamily and low-income households. The outreach campaign will connect residents through City channels and community events and will provide tailored information for children in Louisville’s schools. The outreach effort will include identification of targeted buildings and neighborhoods to share with implementation partners that will in turn implement energy savings projects.</p>
<p>Targets</p> <ul style="list-style-type: none"> • Increase new participation in Home Energy Squad to 60 homes • Increase new participation in Multifamily Buildings EE to 80 units • Double participation in Xcel Energy low income programs including Multifamily Weatherization (2 new participants) and Single-Family Weatherization (21 new participants) in addition to 2 new participants in Energy Savings Kit • Distribution of Xcel Energy School Education Kits to 240 students (3 elementary schools, 1 middle school)
<p>Scope</p> <ol style="list-style-type: none"> 1. Identify priority areas, characteristics, and methods to focus efforts 2. Develop outreach and communications plan 3. Implement outreach and communications plan 4. Share contacts with appropriate implementation team members 5. Customize, deliver, and distribute School Education Kits to 5th grade classes in Louisville
<p>Responsible Parties and Roles</p> <p>Boulder Valley School District</p> <ul style="list-style-type: none"> • Identify teachers and classrooms to participate • Coordinate distribution of Energy Savings Kits with Energy Challenge or other appropriate timing/campaign <p>Xcel Energy Partners in Energy team and program vendors-</p> <ul style="list-style-type: none"> • Provide technical support • Assist in developing outreach plan and collateral • Customize and deliver School Education Kits <p>Energy Outreach Colorado</p>

<ul style="list-style-type: none"> • Follow-up on leads for weatherization program
<p>City of Louisville</p> <ul style="list-style-type: none"> • Help identify relevant segments of the community • Share information • Include as part of overall energy/sustainability program
<p>Boulder County</p> <ul style="list-style-type: none"> • Share information on target populations • Identify candidates during regular outreach efforts
<p>Timeline</p>
<p>Launch-three months</p> <ul style="list-style-type: none"> • Confirm implementation team and develop criteria for prime candidates • Develop communications/outreach strategy • Identify school champions
<p>Three-six months</p> <ul style="list-style-type: none"> • Neighborhood sweeps and multi-family direct outreach • Share information at public events • Distribute School Education Kits
<p>Six-eighteen months</p> <ul style="list-style-type: none"> • Implement improvements • Customize collateral • Continue outreach and track progress
<p>Funding</p>
<p>City of Louisville</p> <ul style="list-style-type: none"> • Staff time to identify candidates • Outreach at city events • Coordinate with implementation team
<p>Xcel Energy</p> <ul style="list-style-type: none"> • Provide collateral • Support events (3)
<p>Participating Residences</p> <ul style="list-style-type: none"> • Improvement costs for residential upgrades
<p>Partners</p> <ul style="list-style-type: none"> • Energy Outreach Colorado (Luke Ilderton) • Boulder Valley School District (Ghita Carrol) • Boulder County EnergySmart (Dave Hatchimonji) • Xcel Energy (Ellie Troxell) • City of Louisville Planning (Lauren Trice) • City of Louisville Communications and Outreach (Emily Kropf)
<p>Outreach Channels</p> <ul style="list-style-type: none"> • NextDoor • School district classrooms, newsletter(s), and events • City of Louisville event calendar • Taste of Louisville
<p>Measurement</p>

Metrics:

- Xcel Energy program participation
- Number of students engaged
- Identified Candidates
- Events with outreach shared

Focus Area 3: Municipal

Municipal strategies showcase the City’s efforts to integrate energy efficiency and renewable energy in proposed City facility projects while using City services and outreach channels to encourage businesses and residents to take action in reducing energy use in their homes and businesses.

Strategy 4: City Showcase- Integrate Energy Efficiency in City Facilities

Description

To lead by example, the City will take full advantage of Xcel Energy rebate programs to increase energy efficiency in a number of city projects.

Targets

- Over the next eighteen months, work with Xcel Energy staff to leverage programs in order to complete the following projects:
 - Take advantage of the Energy Design Assistance Program or similar to ensure energy efficiency is maximized in the renovation of the Recreation Center
 - Utilize the Energy Management Systems program or similar to replace and/or upgrade the Building Automation System at the Library
 - Complete an audit and recommissioning for the Police Station
 - Complete a deep energy retrofit of City facilities through participation in one Building Optimization DR Pilot and one recommissioning project

Scope

1. Connect City Community Lead and Facilities Manager with Xcel Energy programs applicable for current and planned facility improvements
2. Check-in regularly to ensure that programs are best being leveraged, additional opportunities are explored, and no rebate opportunities are missed
3. Identify a plan on which programs to take advantage of with the next budget cycles
4. Prioritize any limited time rebates such as Xcel Energy’s LED rebates to take fullest advantage of energy savings

Responsible Parties and Roles

Xcel Energy Partners in Energy Team and Program Staff

- Communicate directly with City Facilities Manager(s) to ensure rebates are captured and a plan is in place for future projects

City of Louisville Facilities

- Implement ongoing energy efficiency and renewable energy projects
- Interface with Xcel Energy regularly to access rebates and programs
- Develop plan to access rebates annually

Timeline

Launch-three months

- Identify all current and planned projects that could benefit from Xcel Energy rebates and programs
- Get projects enrolled

<p>Three-six months</p> <ul style="list-style-type: none"> • Ensure rebate applications are on track • Ensure project teams are following schedule and documentation requirements • Identify any limited time opportunities <p>Six-twelve months</p> <ul style="list-style-type: none"> • Include rebate planning in decision making process • Identify projects for the next budget cycle <p>Twelve-eighteen months:</p> <ul style="list-style-type: none"> • Start process for 2018 rebates and planning for 2019 rebates
<p>Funding</p>
<p>City of Louisville</p> <ul style="list-style-type: none"> • Facilities staff time <p>Xcel Energy</p> <ul style="list-style-type: none"> • Rebates • Project coordination time
<p>Partners (Implementation Team)</p> <ul style="list-style-type: none"> • Xcel Energy Partners in Energy (Conor Merrigan) • Xcel Energy Account Manager (Michelle Beaudoin) • City of Louisville Facilities (Dave Szabados)
<p>Outreach Channels</p> <ul style="list-style-type: none"> • Not Applicable
<p>Measurement</p> <p>Metrics:</p> <ul style="list-style-type: none"> • Xcel Energy program participation data • Internal City measurement of energy savings • Overall energy use by the City

<p>Strategy 5: City Showcase – Share Information</p>
<p>Description</p> <p>The City will encourage participation and raise awareness of energy efficiency and renewable energy programs as well as sharing information about efforts in its internal operations to best support and inspire more broad actions in the community.</p>
<p>Targets</p> <ul style="list-style-type: none"> • Over the next 18 months, increase participation in residential and commercial DSM programs. Example programs and representative participation rates include the following (above historic 2015 participation): <ul style="list-style-type: none"> ○ Residential <ul style="list-style-type: none"> ▪ Evaporative Cooling: 6 ▪ High Efficiency Air Conditioning: 24 ▪ Home Energy Audit: 12 ▪ Home Performance with ENERGY STAR: 1 ▪ Insulation & Air Sealing: 8 ▪ Water Heating: 4 ○ Commercial

<ul style="list-style-type: none"> ▪ Cooling Efficiency: 2 ▪ New Construction: 1 ▪ Lighting Efficiency: 10 • Consider modification of Planned Unit Development (PUD) criteria to encourage energy efficiency and renewable energy measures in the development review process
<p>Scope</p> <ol style="list-style-type: none"> 1. Train staff on how, when and what to share regarding energy efficiency information. 2. Provide updates at 6 month intervals or when major programs change. 3. Regularly share information about available programs with contractors, owners, and anyone else pulling a building permit or submitting design applications. 4. Explore modifying the City’s PUD criteria to encourage increased energy efficiency and renewable energy inclusion. 5. Regularly share information about the City’s sustainability efforts and what homeowners and businesses can do to increase their energy efficiency and renewable energy. 6. Have regular conversations between Xcel Energy and the City of Louisville Facilities to ensure that all applicable rebate opportunities and programs are capitalized on.
<p>Responsible Parties and Roles</p> <p>Xcel Energy Partners in Energy team and program staff</p> <ul style="list-style-type: none"> • Provides updates, staff training, custom content and serve as a resource for the City <p>Boulder County EnergySmart and PACE</p> <ul style="list-style-type: none"> • Provide information, serve as a resource for homeowners and businesses <p>City of Louisville Planning and Zoning staff</p> <ul style="list-style-type: none"> • Be available for training • Update criteria as feasible • Provide handout(s) to people obtaining permits and submitting development review applications • Track interest in Xcel Energy rebates (exact method to be determined) <p>City of Louisville Communications</p> <ul style="list-style-type: none"> • Regularly share information to the public • Lead communication strategy coordinating information from partners <p>City of Louisville Facilities</p> <ul style="list-style-type: none"> • Share information about internal City facility improvements
<p>Timeline</p> <p>Launch-three months</p> <ul style="list-style-type: none"> • Hold initial training for planning staff • Provide rebate and energy program information for distribution • Develop tracking protocol for whether applicants are requesting/taking information on Xcel Energy rebates • Share information with the public on the Energy Action Plan and what it means for them <p>Three-six months</p> <ul style="list-style-type: none"> • Provide any custom materials requested by planning • Continue to implement projects • Continue to share information • Begin exploring the modification of PUD criteria <p>Six- eighteen months</p> <ul style="list-style-type: none"> • Continue to provide information • Update rebate information and provide additional training to planning staff as needed • Share rebate interest/use (as feasible) with Xcel Energy • Provide rebate and program assistance to the City

Funding
<p>City of Louisville</p> <ul style="list-style-type: none"> • Time for planning staff • Communications assistance and oversight <p>Xcel Energy</p> <ul style="list-style-type: none"> • Program collateral • Subsidize training costs <p>Boulder County</p> <ul style="list-style-type: none"> • Make information available to residents and businesses via the City
Partners (Implementation Team)
<ul style="list-style-type: none"> • Xcel Energy Partners in Energy (Conor Merrigan, Ellie Troxell) • Xcel Energy Account Manager (Michelle Beaudoin) • City of Louisville Planning (Lauren Trice) • City of Louisville Facilities (Dave Szabados) • City of Louisville Communications (Emily Kropf) • Boulder County EnergySmart (Dave Hatchimonji) • Boulder County PACE (Zac Swank)
Outreach Channels
<ul style="list-style-type: none"> • City of Louisville internal email distribution • Weekly City Manager Updates (internal and to city staff) • City of Louisville website (new platform focused on community engagement) • City of Louisville social media • City of Louisville billing/newsletters • Community events • Local news media
Measurement
<p>Metrics:</p> <ul style="list-style-type: none"> • Xcel Energy program participation data • Boulder County program participation data • Engagement with Louisville Social Media • Collateral distributed • Exit survey at conclusion of permit process (or similar)

How Are We Going to Stay On Course?

During the 18-month implementation there will be a significant amount of work developing and launching the strategies that are intended to result in energy impacts for Louisville. The goals and targets in the plan are milestones toward progress and are not binding or static. As the implementation period progresses, some of the targets will be surpassed while others may fall short. Unforeseen barriers may arise while unexpected opportunities may as well. Louisville is positioning itself to make progress based on expectations that are deemed realistic with responsibilities outlined and individuals committed to lead the efforts. As the implementation period gets underway, Louisville will ensure that the results of the many strategies are monitored and communicated in order to quantify the benefits where possible and provide qualitative examples of the community taking action.



Operational Actions and Tracking

The implementation teams for each strategy will hold regular check-ins to update on progress, identify any variance from the identified scope and make corrections to better operate under conditions at the time. Each implementation team will have a Partners in Energy team member assigned to manage the logistics and project management aspects of the strategy while team members will identify and complete tasks appropriate to their roles, availability and capabilities. City staff will be leading select strategies and play a significant role in each, and will provide some of the tracking information for a number of strategies.

Energy savings data for Louisville will be tracked on a quarterly basis and shared with the entire implementation team, and as additional members of the strategy implementation teams are identified, they will be added to the communication chains. In addition to tracking progress against the stated goals, the following additional benchmark will be tracked to show progress towards a more aspirational goal that incorporates a zero emissions goal to provide context for what measures might need to be taken if the community wanted to reach that level of energy switching:

Compare progress to the estimated energy savings necessary to transition to an entirely renewable based fuel supply by 2050.

Training, Awareness, and Competence

In order to build capacity and ensure that momentum continues after the implementation period, this plan includes training and leveraging of community resources. By engaging with the planning department on a regular basis, it is hoped that staff will be able to then share the information with new hires and maintain the relationship with Xcel Energy to find out about new programs and changes that can affect Louisville citizens. By working with the Chamber of Commerce and some of the leading companies in the community to spread awareness of the Green Business Program, it is hoped that companies will want to continue to be recognized and that distinction will carry increasing weight with consumers and owners/shareholders alike. By simultaneously engaging fifth-graders and general residents to share information about energy savings, it is hoped that the information will permeate the community's consciousness.

Because the City's communications staff is part of the implementation team, this effort will be able to be broadcast and shared widely, and once developed it is hoped that people will continue to be able to share and utilize the information. Finally, since Xcel Energy is the electric and natural gas utility provider for Louisville, there will be continuous opportunities to bring awareness and provide ongoing information for all residents and businesses that are interested.

Communication and Reporting

Developing a discrete communications strategy is one of the first items to occur during implementation. With a brand for recognition, an event schedule to coordinate with, and regular updates from the Partners in Energy team, the City will be able to share progress updates, provide dynamic content and allow residents and businesses multiple media access points to hear about the Louisville Energy Action Plan.

The Energy Stars brand for this Plan and implementation effort is anticipated to cover a wider range of efforts than those explicitly identified in the plan, and serve as the broader brand of energy implementation for the Sustainability Action Plan. As the brand becomes more ubiquitous, it is anticipated that residents and businesses will come to associate it with both the City's efforts and their own to change how energy is consumed in Louisville.

The regular tracking information provided can serve as the basis of reporting to the City Manager, City Council, and the wider community. The process of reporting will be ironed out as part of the overall communications strategy, and can serve as a reminder and dynamic progress update of the Energy Stars program.

Changing Course: Corrective Action

As results are identified through the implementation period, the regular tracking and project management meetings will provide the opportunity to adjust strategies and take advantage of new opportunities. Tactics that work better than anticipated can be expanded, while those whose impact is less than expected may be adjusted or dropped. With an 18-month timeframe of implementation support and a commitment to long term sustainability, Louisville will be able to make the needed adjustments to maintain success and strive towards greater energy and cost savings.

During the implementation period, the best process for getting involvement from team members will be determined and lined up with appropriate cycles. These may include budget cycles, school calendars, start of the heating season, etc. As these cycles and the appropriate review points in these cycles are incorporated, there may be different times of the year that specific elements may change, and at a minimum there should be at least one time every year for the major stakeholders to review progress, weigh in, and suggest changes to direction. This typically aligns with City training and/or budget cycles, and Louisville will work to find the most appropriate time and venue for this annual review.

Implementation Team Structure

The Partners in Energy team will remain constant as will the community lead from the City and the ongoing support from Boulder County. The continued support and insight of the planning team is crucial for this Plan’s success. The team will be transitioning to an implementation team that will have many similar members, but not all, and new members will be more specifically suited to implementation. Individual members will be involved in advising and supporting individual strategies as well as engaging others beyond the planning team to get strategies off the ground. Figure 16 illustrates the implementation team structure, with primary leadership from the City, primary support from the Partners in Energy team, and individual strategies being led by team members. Leadership roles will be finalized as a first step in the implementation process, and all team members will be expected to contribute some level of support.

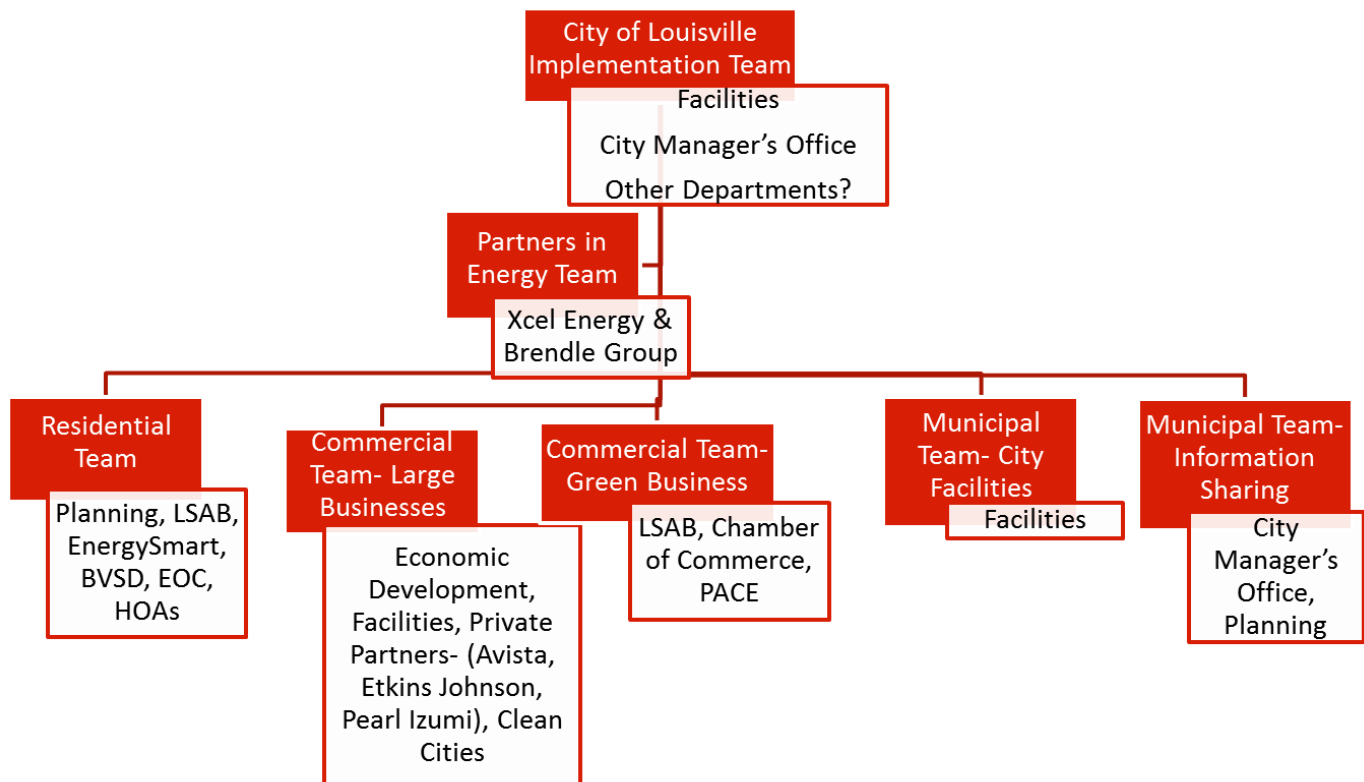


Figure 16. Implementation Team Leadership Chart

Recognition for Achieving Goals

Each of the strategies outlined in this Plan has its own methods for measuring and recognizing success; however, it will be important to engage the broader community to share how the City is progressing and recognize the collaborative efforts of those involved in hitting the Plan goals and targets. At critical milestones, the City of Louisville and Xcel Energy will publish updates on progress, share successes, and congratulate participants and partners through various communication channels and events.

Beyond the Plan Horizon

It is recommended that the City of Louisville consider an update and/ or re-evaluation of the Energy Stars effort once the Partners in Energy implementation period draws to a close in 2018. One option would be to

align future energy goals in any future updates of Louisville's Sustainability Action Plan and continue to work with LSAB to maintain a connection through the volunteers on that board and document future efforts in a plan. This recursive planning approach offers an opportunity to incorporate lessons learned from the implementation period, new technologies, new programs, changing resources, and evolving priorities for the community in an effort to continue the efficient use of energy resources and associated emissions reductions.

If, by the end of the planning period, there is a viable case made for in-house coordination of these efforts, ongoing implementation may be part of a strategic work plan, and updates to the plan may be a part of that effort. Regardless of whether there are dedicated resources in place at the individual staff level or at the more de-centralized staff and community member level, the capacity that is developed will likely translate into some continuation, and potential growth of the program to continue the pursuit towards reductions in community energy use and a transition to a lower carbon fuel supply.

Appendix 1: Implementation Memorandum of Understanding



Memorandum of Understanding Phase 2 – Plan Implementation

Malcolm Fleming
City Manager
City of Louisville

The intent of this Memorandum of Understanding is to recognize the achievement of the City of Louisville in completing the process of developing a city-wide energy action plan. Xcel Energy, through its Partners in Energy offering, has supported the development of this energy action plan. This document will outline how the City of Louisville and Xcel Energy will continue to work together to support the community as they implement their energy action plan.

The term of this joint support, as defined in this document, will extend from February 1, 2017, until September 30, 2018. This is a voluntary agreement and not intended to be legally binding for either party.

Xcel Energy will support the City of Louisville in achieving the goals of its energy action plan, by area of focus, in the following ways:

- **Municipal Sector:**
 - Coordinate with Xcel Energy program staff as well as municipal facilities' manager in providing assistance with program selection and execution to improve city facilities.
 - Develop case study and showcase content for media use.
 - Encourage energy efficiency, share rebate information with planning staff as well as examples of Planned Unit Development (PUD) criteria currently being used to support increased energy efficiency and renewable energy.
 - Develop and support staff trainings to be held at six month intervals.
 - Provide up to \$1,250 in outreach and training materials.
 - Support funded by Xcel Energy for this focus area is not to exceed 85 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and does not include support provided by Xcel Energy internal staff.

- **Commercial Sector:**
 - Support developing approach and materials for outreach to large commercial users.
 - Help identify and connect with large energy users, acting as a secondary point of contact for these groups.

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- Assist in refining the framework for the Green Business Recognition Program as well as support Chamber events to promote it.
 - Aid in identifying and tracking qualifying businesses for the recognition program.
 - Provide support in targeting communications directly with businesses based on historic Xcel Energy program participation.
 - Coordinate with Small Business Lighting program staff for campaign to Louisville businesses.
 - Develop case studies (up to 2) to support additional business outreach.
 - Provide up to \$3,000 in materials and support for large commercial and business education and recognition efforts.
 - Support funded by Xcel Energy for this focus area is not to exceed 160 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and does not include support provided by Xcel Energy internal staff.
- **Residential Sector:**
 - Support and coordinate with Louisville efforts on flyer development and outreach activities for different audiences.
 - Provide up to \$1,000 in event material costs.
 - Provide technical analytic support to help identify potentially underserved areas and buildings.
 - Coordinate with Xcel Energy School Education Program staff and Boulder Valley School District (BVSD) and provide customized information to be distributed and used in conjunction with School Education Kits.
 - Facilitate Home Energy Squad (HES) promotion to the residents of Louisville.
 - Facilitate greater outreach to weatherization candidates to encourage energy-efficiency improvements in collaboration with Energy Outreach Colorado.
 - Support funded by Xcel Energy for this focus area is not to exceed 100 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and does not include support provided by Xcel Energy internal staff.
- **Provide comprehensive project management and support of the energy action plan approval process.** This includes facilitating check-in meetings, tracking and reporting of energy impacts and activity to date, coordination and delivery of implementation kick-off activities.
 - Support funded by Xcel Energy for this focus area is not to exceed 80 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and does not include support provided by Xcel Energy internal staff.

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The City of Louisville commits to supporting the energy action plan to the best of their ability by:

- Achieving the conservation and renewable energy impacts outlined in the energy action plan. By focus area these goals are shown in the table.

Focus Area	Incremental Electricity Impact (in kWh)	Incremental Natural Gas Savings (in therms)
Municipal Sector	1,313,223	30,007
Commercial Sector	2,137,488	30,436
Residential Sector	184,319	19,215
Incremental Total	3,635,030	79,658
Continued Participation Based on Historic Activity	2,092,354	70,416
Total Conservation Goal (Feb 2017-July 2018)	5,727,384	150,074

- Performing the coordination, tracking, and outreach duties as outlined in the energy action plan. These tasks by area of focus, include but are not limited to:
 - **Municipal Sector**
 - Implement projects identified for upgrades and continue adding projects to the queue each year.
 - Share information on the City Energy and Sustainability Initiative through city media channels.
 - Explore modification of PUD criteria language to allow for consideration of energy efficiency and renewable energy inclusion.
 - Continue support of recognition and training events by providing venues and aiding in logistics; this may include marketing, signage and material review as well as recruiting applicants.
 - **Commercial Sector**
 - Coordinate with Xcel Energy team to identify large commercial energy users and identify effective communication channels and contacts.
 - Commit city resources (staff, time, etc.) to encourage participation and act as central point of coordination.
 - Coordinate with Louisville Sustainability Advisory Board and Boulder County to develop Green Business Recognition Program framework.

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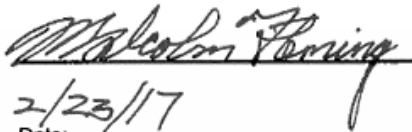
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- Coordinate with Xcel Energy and Chamber of Commerce to support events targeted at driving additional energy efficiency in large businesses.
- **Residential Sector**
 - Support development of three flyer concepts for various residential outreach activities and audiences.
 - Assist in advertising and outreach for various outreach events.
- Provide Xcel Energy an opportunity to review marketing materials to assure accuracy when they incorporate the Xcel Energy logo or reference any of Xcel Energy's products or services.
- Share the collateral, energy action plan document, supporting work documents and implementation results from the Louisville Energy Action Plan with the public. The experience, successes and lessons learned from this community will inform others looking at similar or expanded initiatives.

All communications pertaining to this agreement shall be directed to David Szabados, on behalf of the City of Louisville, and Tami Gunderzik, on behalf of Xcel Energy.

Xcel Energy is excited about this opportunity to support the City of Louisville in advancing their goals around their municipal, commercial, and residential sectors. The resources outlined above and provided through Partners in Energy are provided as a part of our commitment to the communities we serve and Xcel Energy's support of energy efficiency and renewables as important resources to meet your future energy needs.

For the City of Louisville:



2/23/17

Date:

For Xcel Energy:



Date: 2/28/17

Appendix 2: Glossary of Terms

Demand Side Management (DSM): modification of consumer demand for energy through various methods, including education and financial incentives. DSM aims to encourage consumers to decrease energy consumption, especially during peak hours or to shift time of energy use to off-peak periods, such as nighttime and weekend.

Energy Action Plan: a written plan that includes an integrated approach to all aspects of energy management and efficiency. This includes both short- and long-term goals, strategies, and metrics to track performance.

Goals: the results toward which efforts and actions are directed. There can be a number of objectives and goals outlined in order to successfully implement a plan.

kWh (kilowatt-hour): a unit of electricity consumption

Premise: a unique identifier for the location of electricity or natural gas service. In most cases it is a facility location. There can be multiple premises per building, and multiple premises per individual debtor.

Recommissioning: An energy efficiency service focused on identifying ways that existing building systems can be tuned-up to run as efficiently as possible.

Therm: a unit of natural gas consumption